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Review Article

Evaluating Nursing Students' Perceptions with Simulation Northeastern College in the U.S. Through Learning Environment Processes

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Abstract

The voices of nursing students are vital in creating a dynamic up to date and to include more information about those activities which, in the author's opinion, are important in the effective practice of team leadership. The nursing profession needs feedback from students to enhance education and, ultimately, care delivery. In nursing, the focal point has been and will always be the patient. Research has shown, nurses who derive satisfaction from and feel more secure in their work will be able to provide better care for their patients. The study site, recognizing this need, is gradually enlarging their curricula to include learning experiences designed to prepare nursing students through the use of learning environment processes. The purpose of this quality initiative was to realize the importance of interprofessional collaboration, using the core domain of communication as it becomes a tool of administration to ensure successful completion of nursing responsibilities. Learning environment processes were measured in 16 senior year nursing students at the study site students participated as a group where learning environment processes were introduced and their perceptions were evaluated using the Interdisciplinary Education Perception Scale (IEPS) [1], before and after their experiences. The IEPS was separated into three themes: autonomy, collaboration, and training.

Qualitative Findings

Qualitative findings support an upward trend toward changes in the quantitative data this was done using thematic analysis of responses. The themes have been identified as areas of development as a result of this IPE project are:

Autonomy among Professions

A few suggestions came from students after the video vignettes were evident:

A student exclaimed, "If they were going to refuse the stat labs then the patient should've been taken to the Emergency Room".

When asking the patient about her past history, an important issue that she had for several weeks would've lead to a solution".

A student declared, "Open communication is needed and an explanation for code words needs to be explained".

Collaboration among Professions

Several students gave mention to having no members of the code response team showup:

"Although they were busy in the ICU, this caused a delay in patient care".

"There should be multiple team members so that there is not a lack in patient care".

"The team did not have a good recognition of respiratory failure."

Training among Professions

A third theme, training among professions, was exemplified by these statements:

"Supplies during the rapid response were missing, this is a direct result of poor management."

"Limited English Proficient (LEP) patient presenting with chest pain needs an interpreter present so there is no delay in patient care".

Implications

The aims of this study have been satisfied. First, the students' perceptions of their environment proved essential to preparing

them for working in the interprofessional realm upon graduation and securing employment in the healthcare environment. Secondly, the results indicate that the students captured the essence of their perceptions. This demonstrated the value of interprofessional core competencies of communication. It has been my experience that the majority of the students felt that they realize the importance of communication in producing better performance and patient safety outcomes. Thirdly, these findings resembled those of Riesen, et al. [2], who used the IEPS as a means of measuring students' reliance on their own conjectures valuing interprofessional communication. This is seen in the students' comments regarding their experiences.

Introduction

Nature of Capstone Project

Nurse educators realize the old concepts of autocratic supervision are less effective in providing good patient care than are the techniques of democratic leadership [3-8]. The problems pointed out are a mismatch of competencies to patient and population needs, poor teamwork, and narrow technical focus without broader contextual understanding, episodic encounters, predominant hospital orientation and weak leadership [9]. This DNP Project using interprofessional collaborative practice was developed to provide the techniques that the nursing student should use in planning, directing, supervising, and evaluating their work to develop improved practice outcomes. Interprofessional Collaborative Practice (IPCP) occurs when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, caregivers, and communities to deliver the highest quality of care across settings [10,11]. Although it does not occur automatically, collaboration may develop informally through learning by trial and error [12]. Communication has proved efficient as promoted through simulation. Practicing communication skills through simulation in a clinical learning laboratory allows students to practice and test skills in a safe, nonthreatening environment and allows faculty to evaluate and provide feedback to the students [13].

Description of the Problem, Environment, and Target Population

A review of the literature demonstrates that there is an increasing need for student nurses to learn and apply simulation to practical experiences in a clinical setting. Classroom-based knowledge is not always easily transferred into clinical practice, as was demonstrated in the research by Aled, [13,14]. Simulation is increasingly being used in multidisciplinary training of post-licensure practitioners. It has been shown to improve team performance by improving efficiency as team members assume specific roles and perform delineated tasks, resulting in improved completion of specified tasks and simulated outcomes [15]. Planning patient centered care is not easy, but with practice the student and the team will be better able to consider each patient as an individual, define the problem, and determine the best way to meet those problems [3-8]. Students may experience additional stress as they work to demonstrate competence in unfamiliar clinical settings [16]. Exploring students' perceptions, keeping simulations up to date, and using them constantly, are the prerequisites for effective team action.

Purpose of the Capstone Project

The purposes of this project were to (a) explore the [17] students' perceptions as they received new information, either from what they had seen or from what they were told, indicating a change in the plan of care is [17] necessary; and (b) evaluate if the current information is necessary, if the learning environment processes are to be of any value to themselves and the team. Without this purpose enforced within the project as an adjunct and or essential to it, students would continue to provide subpar documentation about their experiences. Such experiences gained as learners are excellent ways of preparing for leadership in any nursing endeavor. The overall consensus from the nursing students who participated in this project was that the small group format, which combined didactic sessions with scenario-driven simulations, was a valuable learning experience for them [18].

Significance of the Capstone Project

The necessity for greater understanding of the patient and the tensions imposed upon him or her by their illness, along with the changes in nursing philosophy and responsibilities of the professional nurse, suggest the need for the use of simulation in the undergraduate nursing curriculum. Ells, [19] found much symmetry in the guiding values and clinical goals of healthcare professionals regarding respectful, patient-centered, team-approaches to health care for advance planning and use of potentially life sustaining/supporting interventions. Yet, the need to overcome miscommunication brought on by commonly-used ambiguous terms, and specific local practice issues were revealed. There is much talk about "freeing the nurse to nurse".

Students will perceive how simulation will allow them time to learn the administrative and coordinative duties of a professional nurse, leaving the time for real nursing functions such as planning and evaluating the nursing care for each patient and supervising the staff who give that care. Studied 8 near-miss and adverse-event situations involving novice nurses to identify causative themes. Seven of the 8 events included communication omissions of essential patient information in a chaotic environment during the handoff report [20]. The results suggests that an empowering leader who promotes equity and respect in group interactions can have an important effect on new graduates' IPC experiences [21].

Recognizing the need to improve student nurses' awareness of communication and safety errors without endangering patients, Jenkins et al structures simulated scenarios, which required

students to interact in an evolving care situation that included interdisciplinary communication [20]. Capitalizing on how to help the patient most effectively would be acquired through a greater understanding and skill in actual performance of nursing techniques and delegated medical therapy.

Definition of Relevant Terms

The Caring Theory

This theory purports that by enhancing authentic, caring consciousness within healthcare practitioners, they will be more intentional in creating caring environments where optimal healing can occur [22-25].

The Cochrane Review

The title of a Cochrane review is structured to include the population or type of people studied, the healthcare intervention under investigation, and often the outcomes being sought. The authors use systematic and explicit methods to identify, select, and critically appraise the relevant best evidence, clinical trials, and generally randomized controlled trials. The findings from the trials are collated and analyzed to draw overall conclusions from the available evidence [26].

The Institute of Medicine

The Institute of Medicine (IOM) is an independent, nonprofit organization that works outside of government to provide unbiased and authoritative advice to decision makers and the public [27].

Interprofessional Collaborative Practice (IPCP)

IPCP involves healthcare practitioners from different professional backgrounds working together to provide patients and their families [1] with comprehensive services, in order to provide the highest quality of care across disciplines [10,11].

Mega Code

In managing the mega code, team leaders assign their team members to specific roles and responsibilities, including: CPR, respiratory management, use of the defibrillator/ monitor, selecting drugs from the code cart, recorder, etc. [28].

Roy Adaptation Model (RAM)

In Roy's worldview, persons are the discoverers of truth, and truth is viewed as a unity of oneness that is the creator. The scientific assumptions are based on systems theory and adaptation level theory [29]. Roy believes that adaptation involves human response to stimuli within the system [29]. Roy emphasizes that within her model, the person is an adaptive system with cognator and regulator subsystems that act to maintain adaptation in the 4 adaptive modes: physiologic-physical, self-concept-group-identity, role function, and interdependece [29].

The SQUIRE Guidelines

The SQUIRE guidelines outline six items to be included in the methods section of a Quality Improvement (QI) report [30].

Assumptions

One can postulate that students who would opt out of this experience have a different comfort level with technology or their communication style is different. But given the similarity of the clinical work that needs to be accomplished daily, the actual content would likely be similar [31]. Berg and colleagues results' suggest that early experience with manikin-based simulation may prime students for additional learning by engaging their attention and heightening their interest in using effective communication techniques. First, we see potential for improving communication by reducing unnecessary communication and liberating more time for patient care [31], including but not limited to:

- A delay in report contributes to confusion, which in turn, leads to further delay.
- Changes in patients' conditions may alter the models of giving care.
- Each professional must be informed of changes to ensure safe nursing care for the patients.
- Most errors can be traced to a breakdown in communication, frequently in the giving or not giving of a thorough report [32-34].

These in turn, will require communication that is responsible for overseeing the care given by the team [32-34]. Collaborative learning strategies offer various benefits including increased student engagement, confidence, peer support, stimulation of higher level thinking, and acquisition of collaborative and communication skills [20]. Yet, organized leadership demands a thorough, concise collaborative report be given promptly at the scheduled times [32-34].

Limitations

The perceptions analyzed in this project are those of associate degree nurses who, at the time of their participation in the project, were completing the Associate of Science degree in Nursing. It is plausible then that the nursing students in their senior year would not be well poised to articulate discerning perceptions regarding their position as professionals, even though they have been versed on IPCP using these learning strategies. Consequently, these factors constitute limitations. Furthermore the projects' results are compromised by a limited sample of senior nursing students from a single tertiary institution. Although this project and its results do have a contribution to make, they do not necessarily represent the nursing profession as a whole.

This project was conducted as an impromptu experience for the students who served as participants. This has the propensity to bias the results, as students who [35] would choose to take this course as an elective likely would demonstrate authentic enthusiasm for the content. It is an important point to remember that, although initial interest [35] can very well determine the selection of these learning experiences, engagement can be lost if interest does not continue [35]. Engaging the students will be important in keeping their interest for subsequent interdisciplinary projects. The post survey responses demonstrated how the students conceptualized engagement during this project.

Capstone Project Objectives

For the purpose of this project, interprofessional communication is defined as communication with families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and treatment of disease [36]. Objectives that emerged from the capstone's goal follow.

- Create opportunities for nursing students to learn and apply IPC principles [37] and practices.
- Plan and facilitate structured opportunities for nursing students and nurse educators to reflect on their experiences with applying IPC principles and practices.
- Collect feedback from participating nursing students and nurse educators for use in developing a nurse education curriculum that integrates IPC principles and practices.

Theoretical Framework and Literature Review

Theoretical Framework

Interprofessional Communication

A national imperative called for health professions to restructure professional education to emphasize patient-centered learning through interprofessional teamwork. This was articulated by the release of the 2003 IOM report on patient-centered and interprofessional education, entitled "Health Professions Education: A Bridge to Quality". The report identifies core competencies that all healthcare professionals should possess and urges training programs to adopt and address these core competencies [38]. For this reason, nursing students, preferably in their senior year, should have a thorough indoctrination in the actual experiences of interdisciplinary collaboration using the technique core competency of communication. Domain 3, Interprofessional Communication, contains subsets of information and technologies [39]. Interprofessional communication: Communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease [36]. As part of team preparation, the approach should be to plan the points, preferably in writing, that is needed to bring out in the discussion. The focus of communication is on facilitating a team approach for patient-centered care [39].

One strategy for improving interprofessional communication was to implement Team STEPPS. Team STEPPS is an evidence-based teamwork system to improve communication and teamwork skills among healthcare professionals [40]. It is presented in a multimedia format, with tools to help plan, conduct, and evaluate its own team training program [41]. This teaching tool includes vignettes and simulation exercises. Simulation experiences typically include the components of faculty preparation, set-up of the simulation environment, and student involvement in the scenario using high-fidelity simulated patients. The simulation is followed by student and faculty debriefing [42]. Other strategies provided by nursing faculty for improving interprofessional communication include situation Mega Code, an assessment that features enhanced visual and hands- on scenarios (Emergency Room Day) and a debriefing session (possible corrective actions). According to Jeffries, [43], "Simulations are defined as activities that mimic the reality of a clinical environment and are designed to demonstrate procedures, decision-making, and critical thinking through techniques such as role playing and the use of devices such as interactive videos and mannequin". Using case scenarios, the students' phrases and words are implemented as possible interventions/new knowledge learned to create this educational project.

Knowledge Attainment and Assessment

Learning does not always ensure the acquisition of understanding and wisdom [44]. Wisdom and understanding, on the other hand, imply the ability to put knowledge into practice through the use of [44] judgment and the power to make decisions. As stated by Callista Roy, The conceptual models for nursing that have emerged over the past couple of decades have the task of probing the reality of nursing to add to our knowledge for practice through research, and to direct nursing education in the science and art of nursing. Scholarly inquiry, based on solid theoretical foundations, continues to be instrumental in building the knowledge within the nursing profession Callista Roy [29].

Caring in itself is not learned; yet it must make use of some of the learning skills as a means of helping nursing students. It is guided by a caring consciousness for the other person and transcends beyond the ego's desire to control others. It requires an authentic presence that is sensitive and responsive to what is happening at the moment [25,45].

A fallacy concerning attaining knowledge needs to be addressed. It involves the belief that when all the facts and information have been presented, learning has taken place and the students are finished. Among other matters, the survey identified that very few of the participants received therapeutic

communication tools during their undergraduate studies; a fallacy that was heightened during the graduate training, given that they received no communication formation [46]. Simulations can positively impact nursing students' practice in several ways. And can help student nurses understand when it is appropriate to notify physicians, improve effective communication with the interprofessional team, and enhance awareness of maintaining patient safety when caring for multiple patients with complex problems [47]. Frequently, when trying to determine the reason for an error, a teacher may exclaim, "But I told her how to do it". However, merely relaying certain information in no way guarantees the learning of it; learning will not occur unless the learner wishes to acquire that knowledge.

Research results suggest that schools of nursing often emphasize the acquisition of knowledge but pay little attention to the degree of understanding that nursing students [44] acquire or need. Some perspectives pointed to traits from the past. This caused some concern, because students should not start their careers with the shadows of historical hurts. Faculty should make the teaching and work of nursing healthier [48]. Most examinations in nursing are objective in form and stress recognition of facts. However, in simulations, facts are applied to particular patients. Situation-specific questions can be difficult to construct, especially those that will yield a valid evaluation of a student's understanding of an actual nursing problem. Although the acquiring and assessing of situation-specific decision making can be challenging, it is essential to the education of well-prepared nurses, who are capable of assuming leadership roles, either in team nursing or in other fields of nursing [49].

Another common fallacy concerns the belief that teaching and learning can only occur in a classroom. One respondent noted, "The idea student will leave this program with a continued passion for knowledge, an ability to find resources to locate up-to-date information" [50]. However, teaching and learning can occur in a variety of settings and contexts. Similarly, another commented, "Instructors must encourage their students to want to learn, long after they leave the academic arena" [50]. Learners want meaningful assignments with real patient care responsibilities. Logistically, providing this enriching experience is difficult when learners are not available consistently throughout the year [51].

Student nurses also learn from watching and listening to others. Attitudes, beliefs, even ways of doing things, are passed from one person to another in this way. The adage, "What you do speaks so loudly I can't hear what you say," is especially true in nursing. Communality is a major norm of science and guides scholars with like interests toward one another and, most importantly, encourages peer review that allows for self-testing and self-correction of knowledge and approaches [52]. Those methods of nursing care that feature observation and practice are remembered much longer than methods that are described or demonstrated in the classroom. The end result of learning is a change in behavior, which may involve mental, emotional, or physical activity. Two examples include (a) having a publication record that reflects a consistent and progressive joint reporting of research projects in the referred scientific literature and (b) being known by and having a reputation for the subject matter of one's research [52]. The manifestation of these changes will vary according to the individual's capacity or opportunity for self-expression and will not be noted until a situation arises in which that learning must be used. As such, caring science is rapidly becoming an interdisciplinary or transdisciplinary field of study. It has relevance to all the health, education, and human service fields and professions. CS investigates reflective, subjective interpretative observations as well as objective-empirical inquiry [45,53] Students may respond in a certain way because of the teaching received weeks, months, or even years previously. Learning took place at that time, but the evidence of their learning did not appear until they had occasion to apply this knowledge.

Early education experiences within an IPE program: increase participants' desire to work with other professions, decrease participants' negative stereotypical attitudes, and increase participants' communication skills irrespective of specialized knowledge [37]. Effective interprofessional learning that occurs in practice provides a genuine opportunity for participants to utilize real-life examples of integrated working and teamwork. Such examples of good practice are often submerged under uniprofessional drivers of achieving profession-specific competencies [54]. Effective learning opportunities provide a variety of methods to help the students acquire more knowledge and understanding of what good nursing care entails.

Cooperation during Simulation

The spirit of cooperation, while necessary among the students themselves, must extend beyond the boundaries of the simulation. It should permeate the atmosphere of the unit, the department, and the entire hospital [55-56]. Cooperation is essential in building new knowledge from clinical experience and for the development of clinical decision support [57]. If the philosophy of the simulation plan becomes a motivating force within each student, then the influence will grow and expand to include all staff within the hospital.

Students report that simulation experiences improve their understanding of interdisciplinary communication and increase their interest in communication skills [58]. Simulated patients are everyone's responsibility. The fact that a patient is assigned to a particular team does not mean that only members of that team are responsible for helping that patient. The activities of the personnel must center around one person, the patient, and every person in every department of the hospital must share in the responsibility of patient care.

Medical simulations allow student nurses to practice team skills. In a study conducted by Robertson, et al. [59], students chose the roles they would play in the simulation. Those roles were: bedside assistant, documenter, treatment leader, procedure provider, and runner [59]. A strategy that can be used effectively in medical simulations is the "What would you do at this point?" approach, in which students discuss a case as it unfolds. A brief amount of information is disclosed, and the instructor pauses to ask the students to think about what information they have and what information they need to know [60].

Simulation patients provide an opportunity to ensure that adequate nursing care is always available for all patients on the scene. While one nurse receives the report and assignment, the rest of the staff must assume the responsibility of caring for the patient. In addition, debriefings must be conducted so that a nurse is free to care for the patients while others are participating in the debriefing.

Debriefing

Effective debriefing by simulation leaders is imperative if IPE is to be practiced appropriately by student nurses. Simulation leaders must believe whole-heartedly in the philosophy of the team plan and provide an example of democratic leadership, which can serve as a guide to the students [61]. Debriefing offers students opportunity for personal growth and self-expression and helps them acquire a broader understanding of the meaning and practice of democratic leadership. Such opportunities also provide students venues through which to develop the administrative, supervisory, and teaching skills necessary for them to lead their teams effectively.

Team debriefing allows student nurses time to assume those responsibilities that are rightfully their own. Debriefing provides time to plan the work of the unit more efficiently, which can result in student nurses having better supervision in their work. Team debriefing also may allow the students to spend more time with the patients, determining their needs and coordinating all hospital and community services to meet those needs. Dierckx, et al. [62] noted this requires that nurses have ethical maturity, as described cognitively in Kohlberg's post-conventional moral level. If a patient's well-being is used as a final criterion, then a fundamental condition for high-quality care is fulfilled.

Reflection supports a humanistic and caring framework within debriefing. Reflection in debriefing of the students' experiences influences their attitudes toward their work and toward the patients; the students act as examples, both as citizens and as nurses. Nursing students can never delegate or ignore these responsibilities. Reflection in debriefings can either be an asset or a liability to the education of nursing students, depending upon the interest and skill of the educator and the team in teaching the techniques and modeling democratic leadership [3-8]. Faculty attitudes affect student attitudes [63]. Nurses and personnel are so often concerned with the care of todays' patients that they forget about the individuals who will be giving nursing care tomorrow, or next year, or two years from now. The kind of education the students receive in the future will only be as good as the debriefings conducted today [3-8].

Research-Based Recommendations for Nursing Education

Debriefing was designed to emphasize the key concepts of interprofessionalism, based on the Canadian Interprofessional Competency Framework [64]. Those key concepts are: communication, leadership, conflict resolution, role clarification, patient/family-centered care, and team functioning [2]. However, it is not sufficient for nursing students to know what those concepts are; they must be given the opportunity to apply and to practice the skills needed in directing and supervising others in their performance [3-8]. Some creative methods of simulation have shown promise in helping learners develop their interprofessional competencies [2].

Nursing students must recognize the importance of good human relations and learn to work cooperatively with others in meeting the nursing care needs of patients [3-8]. The program stage, as well as the style of educational delivery, may influence students' interprofessional attitudes [9].

Practicing communication skills through simulation in a clinical learning laboratory allows students to practice and test skills in a safe, non-threatening environment and allows faculty to evaluate and provide feedback to students [13]. Students must know that the line of communication travels through the team to the members of the organization and that effective communication never travels in one direction only. Students engaging in formal IPE experiences are more likely to have constructive attitudes toward colleagues from other professions. Therefore, the earlier students engage in Interprofessional Collaborative Partnerships (IPCP) the better [11]. Nursing students may wish to attend team conferences, where they can act as resources and offer suggestions concerning patients' needs which they have observed.

Nursing students should become members of interprofessional teams from the beginning of their clinical experiences. Students can see team work in action and learn the importance of cooperation in the context of teamwork that can then extend beyond the team. Bartges, [20] asserts that collaborative assignments push students out of the passive-observer role into the active-participant role. Hence, as student nurses attend interdisciplinary conferences, receive reports, and listen to explanations offered by leadership, they will realize how the organizational plan is carried out.

Policies must be followed when planning student assignments; however, learning requires both stability and change in the environment [65]. Every assignment must be planned on the basis of the learning needs of the students. Early in students'

experiences, they acquire skills in the performance of nursing techniques and in the actual planning, giving, and evaluating of patient care. As students [66] carry out their assignments, nurse educators should be willing to offer assistance as needed.

Because nursing educators are responsible for the nursing care given by their students, they want to supervise and help the students in the giving of that care. It is important to take into consideration the consequences associated with decreased quality, resulting from lack of workgroup effectiveness and learning [65]. Learning via working with other students provides an opportunity for students to position themselves within the healthcare team and to fine-tune a professional persona [67]. As nursing students become more skillful in performing the required techniques, in understanding the needs of her patients, and in helping them to solve their problems, they should learn how to guide and direct others in giving patient-centered care (e.g., student nurses can serve as team leaders).

If nursing students are to acquire acceptable attitudes towards an appreciation of their [55-56] professional responsibilities as leaders, their opportunities to serve as leaders must be carefully planned and closely supervised. The students must recognize the importance of human relations and learn to apply the principles of democratic leadership in all team relations [3-8]. They also must be helped and encouraged to increase skills in planning and evaluating patient-centered care, solving nursing problems, and directing and supervising the work of others [55-56]. These responsibilities mean that the leaders must transfer ownership of the work to those who undertake the work by creating an environment for ownership in which each person wants to be responsible for his or her own performance [68].

Nurse Managers and team leaders must be especially careful to plan assignments in such a way that the idea of performing nursing techniques on a functional basis is minimized and, instead, the part each team member has in the total care of the patient [37] is emphasized. Especially when nursing students are acting as team leaders, they must be made to realize that the responsibility to the team and to the patients goes beyond the mere giving of treatments and medications and doing the necessary recording on the patient's chart. Although the team leaders often find opportunities to apply their clinical expertise to direct patient care, their primary responsibility is to facilitate the patient care delivered by members of their team [69]. If students are to realize and appreciate fully the scope of this responsibility, they must have been brought up in the atmosphere of teamwork from the very beginning of their clinical experience and have had the opportunity to observe other interprofessional team leaders as they effectively put into practice the principles of team leadership. Working in a multidisciplinary team requires recognizing professional expertise and dividing labor accordingly, whereas working in an interprofessional team requires greater sensitivity to social issues within the team and a willingness to share roles to develop collaborative ways of working [70].

There are times when student nurses will have to function more specifically as team leaders. Although such situations are not ideal, there also may be times when the student is the only healthcare team member available. The process of communicating with families involves an array of skills, from simple skills such as data acquisition to more complex skills such as consulting and negotiating care goals [13]. If students find themselves in this dual role of nurse and team leader, then they must take a critical look at all the interactions they think they have to do, such as checking, recording, copying, etc. They must decide which is more important, the patient or the paperwork [21].

Cooperation between the interprofessional teams, nurse managers, and clinical educators is absolutely essential in order to provide nursing students with high quality learning experiences and adequate supervision. Nursing students' attitudes about what their role in nursing is, and how to fulfill it, are influenced by what they observe and experience prior to becoming practicing nurses. It is important for nurse educators and [71] team leaders to remember that nursing students are present on the team primarily for the purpose of learning and only secondarily for service [72]. True transdisciplinary communication requires understanding the language of the relevant disciplines and integrating their individual perspectives to form a shared problem. This is a significant effort because the way the problem is framed or stated may drive how it is studied [73]. More important, patients and certain components of their care may be neglected, unless all are kept informed. The integration process in relevant disciplines has challenges that need identified. The four modes of adaptation according to Roy [74] are (a) physiologic/physical, (b) self-concept/group identity, (c) role function, and (d) interdependence can be used to explore the experiences of students and faculty.

Summary of Relevant Research

Watson's Theory on Human Caring Roy [29] and The Roy Adaptation Model (RAM) informed the development of this quality improvement initiative [75]. In both its original and evolving forms, Watson's theory presents caring as the ontological-epistemological foundation of a theoretical, philosophical, and ethical framework for the profession and discipline of nursing. Watson's theory also can help clarify nursing's distinct intersections with other health-related sciences. The Caring Model offers a framework that embraces and intersects with art, science, humanities, spirituality, and new dimensions of mind- body-spirit medicine [53]. This trend may indicate that nursing as a discipline is now up to the stage that actually links the theoretical basis directly to nursing care [76].

The Roy Adaptation Model (RAM) can be used to help student nurses in their work. Adaptation, which is the central concept in the RAM, is defined by Roy as the human's capacity

to adjust effectively to changes in the environment and affect the environment Andrews & Roy [74]. The Roy Adaptation Model consists of three major components, which are profiled here:

- Contextual stimuli: Internal and external factors that can act on an individual's perception of the focal stimulus
- Coping mechanisms: Information processing and judgment, which encompasses such activities as problem solving and decision making.
- Self-concept: The composite of beliefs and feelings that a person holds about himself or herself at a given time Roy [77].

The RAM also involves problem solving and decision making during the simulation [77]. This can be used as a guide to ensure that no part of the patient's care will be, or has been omitted. Fink, [78] also notes that "learning how to learn" is important for significant learning. Nurses know they must always check to make sure that all treatments and medications have been given. It is just as important to check to make sure that the patients' problems have been recognized and that some attempt has been made to solve them.

Organizations must invest in the tools and skills needed to create a culture of evidence-based practices where questions are encouraged and systems are created to make it easy to do the right thing [79]. Nursing students focus on determining how simulated patients respond to particular treatments or drugs. It is just as important to determine how patients react to the care given, with respect to their particular needs or problems. Last, it is important to evaluate the processes and outcomes of implementation. Users and stakeholders need to know that the efforts to improve care based on evidence have a positive impact on quality [80]. As students acquire this information, they can evaluate better the care given by the team. All members of the healthcare team need to view patients holistically—considering physical, psychological, and social aspects when giving care and treating patients [81]. Hence, "Teaching to Learn" sustains "learning to learn". The RAM and the Caring Theory must be kept at the forefront of IPE using the core domain of communication. A growing body of evidence suggests that therapeutic alliance, partnership building, and effective communication with patients are proving to be significant predictors of outcomes, especially interventions delivered in the context of primary care and mental health services [73]. The RAM and Caring Theory also serve as frameworks that can guide the discussion of IPE and the responsibilities of the team delegated by physicians. If students and team members are to contribute to the total care of the patient, they must know how to do it. Certainly, these models should not be the jealously guarded secret of just a few.

Nurses may sense that constant change and unpredictability can serve to undermine meaningful relationships with patients and families in the context of clinical practice, setting off issues of creative tension that appear unsolvable [82]. In addition, any personnel problems are of immediate concern to nurse educators, because a problem in IPCP relationships will often give rise to other problems [3-8]. This may be exacerbated in interprofessional simulation. Participants concerned about poor assessments of their ability to work as "Team players, may over-emphasize their collaborative behavior during a simulation, which may be truly unrepresentative of the way they normally act in their clinical practice" [83]. Nurse educators must be willing to help student nurses arrive at acceptable solutions to the problems. Bengtsson, et al. [84] stressed the importance of coordinating superficial knowledge with in-depth learning, and applying theoretical knowledge in practice. Safe and effective delivery of healthcare requires communication between individuals with different roles, training, experience and perspectives on care. Some of the key problems relate to the following: shift or patient handovers; the quality of information recorded in patient files, case notes and incident reports; status effects inhibiting junior staff from speaking up; and difficulties of transmitting information within and between large organizations (e.g., safety alerts) [10]. On occasion, nurse educators may decide to refer the matter to the department for further study. Ultimately, the implementation of metacognitive skills is intended to support nurses in maintaining a caring ethical stance while managing their professional clinical practice in the context of today's complex health care delivery systems [82].

Capstone Project Design

Project Design and Description

A mixed methods project design was used for this initiative. The mixed measures approach was useful, as it yields wide-ranging information and provides multiple ways of seeing and hearing the data [85]. The pre and post-survey design evaluated students' attitudes toward interprofessional collaboration using the core communication, before and after exposure to the Mega Code, Team STEPPS vignettes, Emergency Room Day, and the debriefing session. This investigator utilized the IEPS [59] to provide data to support categorization of the students' perceptions into themes that explained the descriptors in the student IEPS.

Concepts were operationally defined, based on a review of the relevant literature [86]. Of the 21 second-year Associate Degree of Science (ADN) nursing students, 16 *(*n =16) actively participated in the project. Participants included 13 females and 3 males. They ranged in age from 18 to 65 years, with a mean age [87] of 26. The participant group was composed of 14 Caucasian, 2 African Americans.

Rationale for Design Framework

As described previously, a national imperative, in the form of the 2015 IOM report entitled "Health Professions Education: A

Bridge to Quality" [88] called for health professions to restructure professional education and to emphasize patient-centered learning through interprofessional teamwork [27]. The report identifies core competencies that all healthcare professionals should possess and urges training programs to adopt and address these core competencies [38]. This project focuses on using interdisciplinary collaboration to facilitate nursing students' acquisition of the core competency of interprofessional communication.

Nurse educators already have a jam-packed curriculum. The project described in this paper can be integrated into an existing curriculum and can become an integral and essential component of that curriculum. Some schools of nursing include one or two courses designed to help nursing students acquire basic knowledge of the principles of communication [55-56]. Cardiac arrest and being in crisis situations are needed elements of both undergraduate and graduate nursing student learning, but these experiences cannot be reliably scheduled into clinical experiences [89].Very few schools, however, offer students a well-planned experience in learning how to apply these principles in an actual IPE situation. Reported levels of inadequate preparation have indicated the need for innovative methods to be employed by education institutions to improve nursing student performance [90,91].

Capstone Project Intervention

The study site granted their approval for the project to be implemented, and students gave informed consent to voluntarily participate in the project. Students received an assurance of confidentiality. Recruitment was done by distributing an email call, linking students' ANGEL learning boards through faculty, and announcing the opportunity in class for those students who had not accessed their emails. ANGEL is an Intranet-based technology similar to Blackboard that communicates information concerning the activities the students should observe. Faculty used ANGEL to provide current and accurate information to students and to offer updates as necessary.

The project intervention consisted of the following steps and processes. Students were enlightened of the project and consented, which was acknowledged and granted approval by the Institutional Review Board at the study site [92]. All students accepted participation and were informed to access via online ANGEL, the pre IPE scale. The test was available for five days including the weekend which allotted for easy convenience online prior to the immersion experiences. The students then participated in a one day Emergency Room Day (ER) experience which involved care of specific ill patients. The diagnoses were preselected by faculty and material that was given attention to in the didactics. In addition to the scale items the students' provided their ages as "Other" demographic information.

Emergency Room Day

The participating students proceeded to actively and purposively attend to the patients that were randomly assigned, based on the diagnoses given for the "Emergency Room Day" experience. The emergency room day simulation included the following healthcare professionals who actually participated in the experience: the supervising Medical Doctor (MD), the five paramedics, forest rangers, student nurses (Including the ER charge nurse) as well as the Hershey Life Lion Flight Crew. As the project leader, collaboration with the ER charge nurse was essential.

Given the following operational definition of IPE-when two or more professions learn about, from and, with each other to enable effective collaboration and improve health outcomes WHO, [93]-the emergency room day simulation falls within that definition. As Hall, et al. [94] emphasize, when organizations implement change the innovation configuration can vary greatly from site to site. In this particular application of IPE, the professions involved included physicians, paramedics, and nurses. Working as a team that included nursing students, they modeled effective collaboration that leads to improved outcomes. This application of IPE was designed to offer nursing students the opportunity to learn from [95] an ER physician, paramedics, and the ER charge nurse. In learning from these different healthcare professionals, the nursing students also learned about their roles in this particular setting.

The Emergency Room Day simulation focused on nursing assessment and triage acuity. Consequently, audits played an important role in the simulation as "door to triage time" a measurement to decrease the length of stay in the ER, is a critical variable. This was imperative as the clock starts ticking for the MD to see the patient when the patient is in fact an ER patient. This was illustrated using the chalkboard as a "Bing Board," in other words for the staff to see what patients' complaints take precedence and require the most attention. Emergency Room Day with enhanced visuals and hands-on scenarios was used as a guide in supervising and evaluating the work of the team. Developmental evaluation supports innovation to "Guide adaptation to emergent and dynamic realities in complex environments" Patton [96]. This experience was a prelude to provide information concerning the activities the students might experience in the future. Faculty members remained in the room as students navigated through the standardized patient encounters. Faculty members and standardized patients also noted who took the lead in the following areas: patient medical history, physical examination, vital signs, interpretation of a chest x-ray, and communication of a care plan with the patient [97]. The visuals and hands-on scenarios and the RAM Model are guides to the Caring Theory at that time care is being given to the patient and cannot take the place of a patient's chart, which is a record of the care that has been given. The "caring" helps to ensure the continuity of safe, individualized nursing care around the clock.

The focus of IPE is to teach learners about the roles of other

health professionals and the key behaviors essential to health care team functioning [15]. During Emergency Day, the students more readily saw the value of the experience and how it was carefully thought out and made more individual for the patient. By requiring students to prioritize care and resources for multiple patients with health problems of varying acuity, they experienced some of the chaotic nature of the Emergency Department [98].

During the Mega Code simulation, faculty prepared the scenario to run it. The high fidelity simulator named "Stan" a mannequin was used. The students were prepared for emergency day after their critical care rotation as set forth in the pedagogic skill requirement. The treatments and information obtained for solely based on "Stan" demonstrating the physiologic responses that presented him pulseless. Students then were assigned based on their interest in the role. For example, one student was selected to be the code responder who documented the care and medications given at the appropriated time. Another student would be assigned to give basic life support, while yet another student would actually push the intravenous medications. A third student would then document vital signs and the particulars as it related to the status of the patient pre and post interventions. The remainder of the students posed as other healthcare professionals when needed. In an effort to an improved outcome, an onlooker nurse was astute in calling report to the critical care nurse to [86] receive the patient prior to transferring, for further monitoring of breathing and circulation [99].There were cases were there was spontaneous return of circulation. Lastly, students also presented as distressed family of the patient and as a passer-by.

The Caring Theory Model coordinated the abilities of the RAM with the care the patients needed. When discussing the assignment with the students in the Mega Code, reference was made to the entire plan of care and attention called to those aspects for which the students were responsible. This concept includes coping mechanisms. The elements of human dimension and caring are particularly relevant to the experiential nature of simulation learning, as this pedagogy uses fidelity to manifest a sense of reality into a simulated clinical environment. The ability to create a situation where participants can demonstrate caring and a human dimension in this simulated context solidifies the learning that can be translated into nursing practice [100].

According to RAM and the Caring Theory, when patients are transferred to another section of the hospital, the essential elements should be transferred along with the patients' charts. The history of the patients' nursing problems and how they are being met is important for helping everyone to understand patient progress within their medical history and treatment. If the care is used in these ways, it will give the team concrete goals toward which to strive in their work, thus stimulating a feeling of unity and satisfaction within the group. Instead of simply focusing on clinical management, the students were expected to demonstrate behaviors such as team formation, closing the loop with other team members, recognizing missing information and other safety issues, and situation awareness [101].

Students completed the IEP scale three weeks after their experiences. A period of at least two weeks is recommended between pre-test and post-test to avoid a familiarity effect where students choose answers on the post-test based on something they remembered from the pre-test [102]. The post test was open for the student to have access to allow them to complete at their earliest convenience. In this posttest the students submitted at the debriefing in writing on paper. The second IEP scale was identical to the pretest, no modification was used.

Therefore the students were familiar to the items of the tool. The students' perceptions were included as open-ended opportunities and used as free text into the three themes given in the Data Analysis (autonomy, training and collaboration). Their perceptions improved their use of IPC using communication by the perceptions that increased the effectiveness of their capabilities. The more effective the student's communication, the more effective their leadership will be. The results suggest that an empowering leader who promotes equity and respect in group interactions can have an important effect on new graduates' IPC experiences. They also highlight the importance of empowerment in promoting respectful communication within collaborative teams [21].

Debriefing

These experiences were followed by a meeting in an allotted classroom with the students, park rangers, paramedics (First responders), Supervising MD, nurse educators, and adjunct faculty, to debrief for approximately an hour. The professionals' aforementioned, comments and questions were considered to ensure the successful completion of tasks. The group was debriefed by Carranda Barkdoll (MSN, RN CRNP), Campus Coordinator for Nursing Programs using an open forum to engage, extend and explore the students' perceptions for elaborating learning through the environment processes.

There are two aspects of debriefing to consider. First, leadership must address this or they would not be assuming their responsibilities as leaders. This alleviated the problem of making the best use of their few minutes, to talk with, not to the students, getting them to talk about reflection. When debriefing is structured to promote reflection, encouraging students to analyze their own assumptions and think about how to enhance or develop more skillful nursing practice, reflective practice may be involved [86]. It facilitates RAM principles, by testing the concepts, as well as the Caring Theory of the project. These analyses drive RAM knowledge that can be designed to test the RAM [103].

The second concept of this initiative is directly related to one of the reasons for having a debriefing. Knowing that

leadership does not have as much time as they would like to become acquainted with the students, they must then rely upon the eyes and ears of the team members. "And finally, there is almost no opportunity for us in management to evaluate the employees' attributes on anything except technical competence and accomplishment; there is no chance to observe people skills or to determine potential for leadership" [104]. Faculty members need to become skillful in questioning nursing students so that the students relate as many details as possible about the experience. Debriefing is a great responsibility for leaders. They must first collect all the information the team members may have, and then they must determine the importance of that information in relation to the care the patients need. None of the participants in the pretest were lost in the posttest. There were no incomplete tests or test that was omitted because of an administrative error, which would have resulted in the project being unable to distinguish baseline from posttests results. It is honorable that none of the tests were removed from the analysis; while it would have been inappropriate to include them.

Administration and Supervision

Another major responsibility of student nurses is that of learning the principles of administration and supervision, which are necessary to make leadership more effective. A few reflections were selected [105]. These reflections were presented at the didactic sessions. Students concluded that self-introspection is necessary to make their leadership more effective. Efforts to achieve creative insight or the conceptual integration of multiple features emphasize a caring affect, skill in decision-making, intelligence, compassion, ethical codes, clinical experience, academic learning, self-knowledge, and courage [106]. Strategies are needed to engage students in this type of reflection. Students should evaluate the experience and potentialities of each staff person. Pask, noted it must be acknowledged that some nurses may consider themselves to be unequal to the task [107].

Assessment Tools

This project featured the use of the IEPS as a pre-post measure [108]. The IEPS is an 18-item survey-based tool that is separated into four factors: professional competence and autonomy, perceived need for professional cooperation, perception of actual cooperation and resource sharing within and across professions, and understanding the value and contributions of other professionals/professions [2]. The IEPS uses a five-point Likert Scale, with high scores indicating a more positive view of the process [109] the IEP scale has a Cronbach's Alpha value of .80.

Data Collection

The project leader, nursing faculty, and the author facilitated the students' work. Participants were guided by questions, mentoring, discussion, and their previous IPE experience using the core competency of communication. Data collection methods focused on selected diagnoses, including: flail chest, urinary tract infection, chest pain, trauma, dehydration in the infant, suicidal ideation, urosepsis, and diabetes mellitus. Pre- and post-project surveys were chosen from the existing IEPS (The scale was not modified as they may have affected reliability and validity), to assess changes in participants' interprofessional attitudes and self-perceived competence [2]. In April 2014, 16 nursing students completed the IEPS before participating in the capstone intervention and a second time, three weeks after the students participated in the capstone intervention.

Data Analysis

There is one research question in this project. The determination of the distributed data necessitated the use of Microsoft Excel statistical tests to analyze the data addressing this question. Excel was used to analyze the pre- and post-results of the Interdisciplinary Education Perception Scale [66]. Data from the IEPS was downloaded directly from the results into a spreadsheet and imported into the various formulas for analysis.

The project question, "Can educating Associate Degree nursing students in interprofessional education which implements the core competency of communication promote collaboration while nurturing teamwork?" was analyzed using the students' responses from the IEPS and categorized those responses into themes. Lastly, the analysis methods involving the survey results from the pre and post data demonstrated a positive correlation between the themes pre and posttest that "strongly agreed." In other words, the students' perceptions using communication, increased in autonomy, collaboration and training after the interprofessional experiences. The data analysis and the statistical tests used to speak to the research question are outlined in (Tables 1& 2). The association and the determinations of those results are related in detail in Chapter 4.

Themes	Strongly Agree	Moderately Agree	Somewhat Agreed
Autonomy	25%	31%	18%
Collaboration	18%	62%	18%
Training	31%	31%	31%

Table 1: Pre-Survey Short Response Question Results Regarding Students' Beliefs in Autonomy, Collaboration and Training among Professionals.

Themes	Strongly Agree	Moderately Agree	Somewhat Agreed
Autonomy	43%	37%	18%
Collaboration	56%	37%	18%
Training	43%	37%	18%

Table 2: Post-Survey Short Response Question Results Regarding Students' Beliefs in Autonomy, Collaboration and Training among Professionals.

Quantitative analysis of the data was done systematically using the Microsoft Excel program to run the statistical tests. A categorical data analysis using the Statistical Analysis System (SAS) can be considered. Using Microsoft Office Excel 2010, two input data tables were created by putting the number representing the responses from each IEPS, into a cell titled with the correlating theme and then tallying results. Once the tables were configured, it allowed for testing to determine how changes in two variables affected the different formulas.

Other Evaluative Strategies

Formative Evaluation

My main concern is that the students are not only aware of what they should do but how they should do it. The direction and guidance that this educational project gives the students as a whole and to each individual is extremely important: therefore one must keep the students informed and expect them to report their observations to me. Just as being a nurse and how we try to find out how the patient responded to a drug; it is just as important to find out how their perceptions are trending. As the investigator, one can assess their perceptions by a needs assessment by way of individual in-depth interviews and surveys, these resources will ensure that I am using effective procedures. As this project is under development; it is at the completion of my needs assessments I can then do an analysis to determine if the intended objectives are able to be evaluated. I will need to revise the project as their learning needs change or some students are not successful in the program. As we get this information, one can better evaluate better the effectiveness of this project [55-56].

Summative Evaluation

I will resubmit the IEPS at the completion of the student nurses' roles and find out what gaps in learning have occurred and apply the answers as a back drop for a future study. The results of the test may concern the identification of leaning needs and problems or the evaluation of the results of the project. For instance, the small amount of time the students presented (Three weeks), indicates that It is probable that a longer amount of time is needed. Is it the appropriate time for complete engagement, i.e.; time into first clinical experience vs. while completing the end of the senior year? I can obtain their forwarding address to complete a survey in one year or when they graduate. In order to determine what has occurred of these experiences. I will analyze changes in behavior, attitudes, knowledge and more importantly if there has been a change in their perceptions. The large impact of this project is to make it an adjunct to the study site's Nursing Program and offer it as an Orientation/Competency Profile for the nursing student [55-56]. It is clear that a standard of care needs to be implemented to prevent miscommunication. In order to accomplish this important task, the professional team needs to have a shared understanding of what the evaluative strategies are. It also is imperative that team members are aware of, can account for, and develop strategies to reduce miscommunication [110] and minimize threats to quality patient care. The three main attitudes to guard against that was identified in this project include:

- Confirmation bias, which involves discounting information that disagrees with preconceived [111] ideas (e.g., the student count is different from the informed consents).
- Risk perception, which occurs when team members assume that mistakes will happen to someone else.
- Overconfidence and automated behaviors, which involve going through the motions of a time out without paying attention to the steps [111].

Rectifying these attitudes ensured engagement of the students. To verify these attitudes and discount them before miscommunication and a threat occurs, as well as human and cognitive factors that come into play, such as distractions and interruptions [3-8].

Just as the Operating Room has a culture of identifying the correct patient, procedure and site in their time-out steps [112]. It is essential to recognize and reduce threats in order to make decisions regarding appropriate intervention measures to take.

Nurse Educators' Observations

The recommendations by the nurse educators aligned well with the issues identified and the aim of this project. Their plan included challenges related to miscommunication, behaviors and changes in their perceptions. Linking the effects of poor communication with the issues of miscommunication provides opportunities for improvement in leadership and staff engagement. The recommendation to assess these factors that impact the project is essential for the students who are poised to succeed in their workplace. In addition to successful enrollees, faculty places financial accountability for budgets and expenses at the educator's level. Goetz, et al. [113] suggests this model of accountability "Ensures a culture built around financial performance" and results in an ownership and engagement by staff and leaders.

The educators' observations were very thorough in their analysis and strategic recommendations; they addressed the three common themes as to what constituted good IPE using communication and that which could be required in their grading criteria (autonomy, training and collaboration). They identified that these themes can be identified for improving their student satisfaction scores in order for the university to remain competitive. In regards to spending, this project can assist with pointing out a base percentage of the budget in an effort to identify where the money is being spent. Furthermore for workforce, communication was addressed as an important aspect of workforce; the team identified ways to improve communication in the curriculum by

implementing an open door policy, newsletters and chat meetings via ANGEL.

Anecdotal Notes

The observation of the students and her work was one of my endearing responsibilities as a facilitator [3-8].... personally, that's what I would sort of focus on is ... how do we get more training for these guys ... whether it's simulations, whether it's videos, you know sick/not sick ... Whatever you can to sort of expose these people, for the more you expose them the better they will be able to handle it [114]. A resource that would prove useful would be to develop evidence packets with the assistance from the information specialist to represent all viewpoints reported in the literature and provide concise, informative summaries of the findings as they relate to this project at hand. I was able to see nursing in its entirety as well as its individual aspects [3-8] to do this, I not only observed the physical performance of the team in the ER day and the Mega Code but also the manifestations of those abstract areas involving their emotions and understanding [3-8].

This experience has taught me that not only must I observe correctly, but I must also learn to evaluate my observations. Evaluation of successful change requires not only rigorous measures that drive diverse healthcare systems to common evidence-based goals [115]. I have found that evaluation should be a continuous process of analyzing strengths and the weaknesses that you observe in the personnel themselves or in their work, so you can encourage them to continue doing good work or help them to improve in those areas in which they are weak [3-8]. But after evaluation, what? My work is not finished, by no means! After determining progress as well as a team and where I need to improve, then I have to set new goals, make new plans, reorganize my resources, and begin work again. Leadership can never become static; for when it rests on past achievements, there is no longer any leadership [3-8].

Analysis of Impact

IEPS Results

The students' post-project IEPS scores increased for all 18 questions. All three themes: Autonomy, Collaboration, and Training, had post scores ranging between four and five on a five-point scale. (Table 1) and (Table 2) outline the descriptive analysis. Evaluation scores for primary desired themes increased. Students reported autonomy among professions was good (98%), collaboration among professions was realistic (99%), and training among professions provided a good opportunity for problem solving (98%).

Nursing Student Feedback

Qualitative data were assessed using a thematic analysis of responses. The themes that were identified as areas of development as a result of this IPE project are profiled below. The students were given the IEPS using the 18-point tool. Each student was given a sufficient amount of time to complete the survey.

Following a teaching of the vignettes from the Team STEPPS evidenced-based teamwork system to improve communication and teamwork among health care professionals, the [116] 16 last semester associate degree student nurses were assigned to focus groups. During this time students reflected on the quality of the interprofessional attention that was given, considering the needs of the individual, yet not forgetting the welfare of the patient. The students assessed their preparation as a team in keeping the flow of the team moving ahead smoothly. Needless to say, how they felt toward the professions reflected the quality of nursing care they would have given.

They were able to inspire their confidence, by being firm but not intolerant, by formulating plans that was well organized but not rigid. By playing different roles, as the project's investigator, I was able to handoff to the students the most common method of giving directions which was by making them in the form of a request. There are many different ways of wording a direction in this manner, for instance, "Will you..?" or "Let's or... "How about..?" This stimulated cooperation and help get more work done. It works well with the person who is extremely "Touchy" or with a nurse who is your equal rank. It will also work with the person who is interested in your job, or with the nurse who is older than you and may, therefore, dislike taking orders from you.

The students were then asked to provide a verbal order or command that might be used in the form of a request to inform the respiratory technician, the attending Medical Doctor for that particular patient's change in status. Students were made aware by the nursing lab coordinator, the manner of giving directions is important, "As nurses, you must learn how to work and get along with people. The manner in which you give directions and explain care will indicate to your team your attitude about them as individuals. Always keep in mind that you are working with them." The subjects in the video vignettes were chosen by the nursing lab coordinator.

Autonomy among Professions

A few suggestions came from students after the video vignettes:

"If they were going to refuse the stat labs then the patient should've been taken to the Emergency Room".

"When asking the patient about her past history, an important issue that she had for several weeks would've led to a solution".

Open communication is needed and an explanation for code words needs to be explained".

Collaboration among Professions

Several students mentioned that no members of the code response team showed up.

"Although they were busy in the ICU, this caused a delay in patient care".

"There should be multiple team members so that there is not a lack in patient care".

"The team did not have a good recognition of respiratory failure".

Training among Professions

A third theme, training among professions, was exemplified by these statements:

"Supplies during the rapid response where missing: this is a direct of poor management".

"Limited English Proficient (LEP) patients presenting with chest pain needs an interpreter present so there is no delay in patient care.

In the subsequent weeks, students worked efficiently in Emergency Day and the Mega Code, when time was important, where they posed as having the only one with the necessary knowledge; therefore, telling each student nurse just what to do.

At times in order to control certain types of individuals, e.g., the one who is indifferent or refuses to follow accepted procedures, it was found that the direct approach was more effective [117] than any other. The listening to the student interact revealed that management decisions were being made [20]. In the author's opinion, this exposed the degree in which their leadership was creative, and the situation itself, will determine to a great extent the manner in which the students gave directions. These IPE experiences allowed the author to mark the key words with a highlighter and then cluster them to find the themes [118]. This presentation exposed students to the evolution of the patient safety movement and current recommendations for improving quality of healthcare [20].

Anecdotal and Observational Data

- Students identified with the nature of patient safety and errors in a highly personal way and related to the systems approach to problem solving as a critical approach [38]. The main aim of the project was to help the students discover the value of written plans and of receiving accurate reports from the interprofessional team. The more credible and informative the documents were, the more the nursing students would want to use them.
- The report exercise from the video vignettes allowed for specific critique of content and also identified knowledge gaps that could be addressed after the assessment [20]:
- Critique the problem
- When the students collected all of the identifiable information, they were able to sort out that which was essential to their understanding of the problem. Consider each fact by itself, then consider it in relation to the other information they had at hand [3-8].
- Determine which information is pertinent to the situation that was considered.

The students were beginning to question the status quo and to think critically while at the same time encouraging creativity and an analysis of new perspectives [68]. By this, they were defining the problem. Listening to the student pairs interact revealed that management decisions were being made [20].

After the interprofessional learning experiences, there was a significant increase in the percentage of students [105], who strongly agreed that IPE using communication identifying the theme of collaboration and belief of teamwork with other health care professionals [119] could prove invaluable in the professional development of students (Pre-collaboration 18%; post- collaboration, 56%; p 0.001). Based on an analysis of student perceptions regarding the requirement of such workshops in their education, a majority strongly agreed that these workshops should be required (Pre-workshop, 39%, post-workshop, 57%; p, 0.0001) [97].

The ADN students demonstrated improved information transfer by using the video vignettes, Emergency Room day and the Mega Code in their own interprofessional interactions. This was evident by questions being asked about being a charge nurse. As a new charge nurse/nursing students therefore, feel reluctant because of your youth or lack of experience, surely this situation can rectify itself over time. Meanwhile whenever you try to help your team members improve, indicates to them that you are using information or techniques that your clinical instructors, supervisors or charge nurses found helpful, thereby transferring some of their authority and experience to yourself. If a situation develops that you cannot handle, you should discuss this matter with the Nurse Manager. Participation increased confidence in and awareness of their professional roles [120]. This implied that a certain amount of active participation of the learner is necessary.

Course Evaluation Data

On the Post-Survey Short Response Question Results Regarding Students' Beliefs in Autonomy, Collaboration and Training among Professionals all students strongly agree/ moderately or somewhat agreed that these environment processes can be: (a) carried with them at all times; always refer it; (b) Try to anticipate changes that may occur in the treatment of their patients, and forewarn the team to expect these changes and plan accordingly; and (c) determine if the patients were satisfied. This project can identify tools health professionals need to work effectively with the team to improve patient safety [35]. Assigning an equal number of patients to each team is not always

a fair distribution of responsibility. The student has the insight to know the patients and their needs well enough so that it can be determined the quantity of nursing care and the length of time needed to complete it [3-8]. The relationship of problem solving to planning or better foreseeing certain problems and preventing their occurrence was evident [3-8]. Even though the environments were planned carefully, situations will develop that must be straightened out. The team members recognized that problems may occur [3-8]. They want a leader who thinks before she speaks or acts, one who will help them in a systematic way [32-34]. The systematic way is sometimes called the "evidence based research" way of thinking and can be used for significant improvements. Significant improvements were seen in attitudes toward "increased experience working in interprofessional healthcare teams" and "Understanding roles and responsibilities of different health professions' team members" [105]. Although the number of team members will be determined in part by available personnel, all teams need not be the same size. If the physical layout of the unit is such that the patients are divided equally among the teams, the student and the interprofessional team may need to revise the number of each team proportionate to the nursing care that must be given and the ability of the team members to give that care. The most recent "Cochrane Review" concluded that IPE has positive or neutral outcomes on professional practice and patient care, but more rigorous evaluations are needed [105].

Implications and Conclusions

Implications for Practice

The results of this project indicate that the IEPS is a reliable tool [121] that needs no modifications. The students' perception suggests that a program guide would be helpful to ADN students. Perhaps what needs further study is whether interprofessional education, using the core competency of communication, yields better patient outcomes.

The Role of Nursing Educators

The clinical instructor should be an ex-officio member of any team of which the student is a member, especially if the student is acting as a team leader. The sometimes significant gap between the desired future of team-based care and what health professions' students observe and experience during their clinical experience can be challenging [122] for all. The evaluation process enabled learners to be supported as they shared their feelings and experiences, received validation for ideas, and created a sense of belonging and connection [49].

The faculty member has a key role to play in facilitating debriefing of learning experiences and showing how the expected behaviors could contribute to quality, safety, and satisfaction [122]. Nurse educators need to work with students in identifying needs of the patients and in planning their care. The students in the project group learned different ways of thinking. One student made the statement: "The class makes you think differently, i.e., thinking about systems rather than individuals". Students identified with the nature of patient safety and errors in a highly personal way and related the systems approach to problem solving as a critical approach [38].

Summary of Outcomes as Related to Evidenced- Based Practice

The majority of the students reported that they realize the importance of communication in producing better performance and improved patient safety outcomes. The author of this capstone project has clearly identified and explained strategies recommended that addressed issues and challenges presented in these experiences and have considered possible counterarguments that may have affected outcomes and suggested ways that these factors could be addressed; and have applied a theoretical approach, principles and standards learned in this course and previous courses. As suggested by Kovner, et al. [123]. "Effective strategic planning can be a force for mobilizing all the constituents of an organization, creating discipline in pursuit of a goal, broadening an organization's perspective, improving communication among disciplines, and motivating the organization's workforce" [124]. Project findings resembled those of [2], who used the IEPS as a means of measuring students' reliance on their own conjectures about valuing interprofessional communication. This is seen in the students' comments regarding their experiences.

As has been stated several times previously and certainly implied by the evidence, the student nurses must give care which goes beyond the mere execution of the doctors' orders or adherence to hospital policy [3-8]. The formative evaluations and summative evaluations at the end of the program provided evidence in support of the [125] participants' perceptions of the program's success [126]. Nursing students have the duty to render that quality and quantity of care that is provided by the average nurse in the community at that time [3-8]. While there is no medical definition of standard of care, the term is firmly established in law and is defined as, "The caution that a reasonable person in similar circumstances would exercise in providing care to a patient" [127]. This care must be planned and is based upon the nurses' application of principles found in the biological, physical, and social sciences [55-56].

Understanding brings respect; respect improves collaboration; and collaboration leads to better patient outcomes [128], which is the ultimate goal. These outcomes necessitate the assessment of patients' nursing needs, the making of a nursing diagnosis, the determination of appropriate nursing measures, and the execution of the [32-34] interprofessional team plan in order to achieve the aim of [32-34] better patient outcomes. All of these outcomes are professional nursing activities that are essential in the role of [32-34] interprofessional education using communication. The student

and nursing division collaborating with the interprofessional team determines an appropriate plan of care for each patient during the conference [32-34]. Overall, the IPE experience within the school of nursing has been positive, based on anecdotal comments, course evaluations, and faculty expectations [128]. When put into written form, the plan provides the team with a constant reminder and guide about what they hope to accomplish for the [32-34] patients and the work of each professional. Without the use of these tools, student nurses cannot truthfully say that they are demonstrating exemplary care [32-34].

Conclusions

Interprofessional team meetings are a practical means whereby everyone's ideas, observations, and suggestions about the patients and their care are heard and considered. When team members recognize the wealth of information that each team member has about the situation, they will want to make use of it whenever possible. Getting everyone at the right place at the right time [10] was the challenge. All interprofessional team members felt a responsibility toward the patients, because they have contributed to positive outcomes regarding the patients' care.

Finally, IPE needs to be an integral component of the nursing curricula. Leadership is often amazed at the amount of knowledge that the nurses and even ancillary employees have about the personal lives of the patients. However, that information must be used to benefit patients and increase the quality of care provided to them. With just a few keystrokes, hospitals now have information, such as how resources can be tied to census and how patient care can be tied to potential error [129]. On the other hand, if patients request the help of a nurse in a confidential matter and that nurse is able to provide the assistance needed, then that information needs to be brought to the interprofessional meeting, because the problem already has been addressed. Current Nursing, [130] says, "Standard is an acknowledged measure of comparison for quantitative or qualitative value, criterion, or norm [131]. Interprofessional interactions are essential to patient care and well-being". A standard Neil, [132] mentions, is a practice that enjoys general recognition and conformity among professionals or an authoritative statement by which the quality of practice, service, or education can be judged [131]. Without opportunities for student nurses to engage in IPE using the core competency of communication, they are at risk of providing sub-par care to patients.

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