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Facilitating Caring Behaviors in Technology-Dependent Nursing Practice Through the Use of
Simulation Training and Confluent Education Strategies

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Abstract

This paper explores the meaning and benefits of nurse caring, describes the impact that technology has on modern nursing practice, and outlines recommendations for the integration of caring *and* technology to achieve the highest quality nursing care. Supported by Swanson's (1991) Theory of Caring and Locsin's (2005) Theory of Technological Competency as Caring in Nursing, instructional strategies that could be employed by a nurse educator to foster and enhance caring behaviors concurrently with technical training are presented. These include the use of simulation, with an emphasis on reflection during debriefing, and confluent education strategies. The goal of these strategies is to assist practicing nurses to identify their own caring behaviors, to recognize opportunities to enhance their caring practice, and to find meaning in the use of technology as an expression of caring for their patients.

Keywords: caring, technology, simulation, confluent education

The profession of nursing has changed dramatically since its inception. Fantastic advances in medical technology have enabled survival and treatment that was inconceivable during the time of Florence Nightingale. Because of these advancements, patient acuity has dramatically increased and nurses are caring for sicker patients, many dependent on at least one form of technology for their survival or improved quality of life. Technology continues to be invented or improved upon and nurses are expected to stay abreast of new developments and maintain competence in the utilization of these technologic tools. This expectation is held by the nurse's employers as well as by the patient, who relies upon a knowledgeable and competent nurse to safely care for his or her well-being. Though it has been suggested that the overwhelming nature of the technologic management in patient care diminishes the nurses' ability to demonstrate caring behavior, strategies can be employed to assist nurses to maintain focus on caring in their practice.

Caring

Caring is essential to nursing practice. It is at the heart of the nursing discipline and defines the nursing profession. Nurse scholars have written about it and have developed theories in an attempt to best articulate its importance (Locsin, 2005; Jones & Alexander, 1993; Swanson, 1991; Watson, 1981). Nurses strive to have caring relationships with patients, to discover their stories, and to know them so as to assist them better back to health. Studies have demonstrated that high ratings of patient satisfaction are directly related to patients' perceptions of nurse caring (Palese, et al., 2011; Burtson & Stichler, 2010).

Though the intention of patient-centered care exists, the realities of technology require frequent interfacing with machines that tend to simplify patients into their component parts – one

machine reports cardiac activity, one provides information on the pressure in the blood vessels. There is always some beeping to attend to and the noise of the machine is at times louder and more quickly responded to than the patient's voice (Almerud, Alapack, Fridlund, & Ekebergh, 2007). It is easy to become overwhelmed by the tasks associated to the multiple technologies employed to monitor the patient and proves difficult to see beyond the data and to retain focus on the patient's lived experience. It has been reported that caring is hampered by the emphasis on technology in modern nursing (Hawthorne & Yurkovich, 1995).

Technology

Technology has shaped modern health care and is present in some form in nearly every nursing encounter. Appropriate use of technology can be of great assistance in assessing patients and can increase safety and efficiency of intervention. Technology allows us to better know our patients (Locsin, 2001). Nurses realize that an expectation of employment is both comfort and competence in dealing with the technology. Nurses also know that an overreliance on technology tends to objectify patients and reduce them to mere data points. Technologic dehumanization is dissonant with the core values of nursing (McGrath, 2008). Much time and resources are spent ensuring that nurses are competent in the use of various tools and machines. Review of the literature illuminates a gap in educating nurses on how to successfully incorporate and recognize caring behaviors in the technical care of their patients (Blum, Hickman, Parcels & Locsin, 2010; Curtis & Jensen, 2010; Eggenberger & Keller, 2008; Glembocki & Dunn, 2010; Panosky & Diaz, 2009; Storr, 2010). Nurses are simply expected to independently preserve caring as they incorporate technology into their practice (Almerud et al., 2007; Musk, 2004).

Electronic health record (EHR) documentation is one example of a technology that is used more and more frequently by increasing numbers of nurses. Research suggests that electronic charting is safer, more efficient, and provides a better means of communication than does written charting (Spencer & Lunsford, 2010). EHR charting is frequently done at the patient's bedside and therefore allows increased time spent with the patient. Almerud et al. (2007) warn, however, that even though electronic bedside charting may bring the nurse and patient closer *physically*, this closeness is in fact only "data-close" (p. 134). The lack of instruction in how to use this technology in a caring manner translates into a lost opportunity to establish a caring therapeutic relationship. As these systems are increasingly being implemented across the nation, the vast majority of time and other resources are spent on ensuring that nurses can efficiently use and master the technical aspects of the software programming without consideration about how it impacts the nurse-patient relationship (Spencer & Lunsford, 2010). Current instruction of EHR documentation, with its lack of contemplation of caring, is an excellent example of how nurses are not being taught how to incorporate technology into their caring practice.

Caring + Technology

To meet the needs of the rapidly changing healthcare environment, nurse educators must enable nurses to become confident and competent users of technology but must also safeguard that caring is prioritized in all patient interactions. The art of caring and the science of technology must be reconciled to achieve true quality care in nursing. Nursing educators must emphasize that the caring relationship is of critical importance to the nursing profession and ensure that nursing education not consist solely of the training and validation of technical tasks. Nurses must be prepared to demonstrate adeptness with technology and also understand the

impact that caring has on outcomes. This blending of caring and technical competence facilitates quality nursing practice.

The purpose of this paper is to explore the meaning and benefits of nurse caring, to describe the impact that technology has on modern nursing practice, and to consider the integration of caring *and* technology to achieve the highest quality nursing care. This paper is supported by Swanson's (1991) Theory of Caring and Locsin's (2005) Theory of Technological Competency as Caring in Nursing. The aim of this paper is to suggest instructional strategies that could be employed by a nurse educator to foster and enhance caring behaviors concurrently with technical training technology-dependent nursing practice.

Background

Standards Informing Technology and Caring

Various influential groups and accreditation bodies have issued statements and published reports on the changing healthcare environment and education of health care professionals (HCP). The Institute of Medicine (IOM) in 2001 recommended that the healthcare industry employ systems that facilitate care that is safe, effective, and patient centered. Information technology (IT) in the form of EHR was especially stressed as a means to this end and the IOM has continued to advocate for the prompt implementation and appropriate use of IT. In a later report (2003), the IOM identified five core competencies that should be possessed by all clinicians to meet the needs of modern healthcare. Number one of these is that the worker should provide patient-centered care. While recognizing that technology has a prevalent and crucial role in patient care, the IOM stresses the maintenance of a focus on the patient through active listening, clear communication, and the provision of effective education to patients.

In 1998, the Pew Health Professions Commission published a report that offered recommendations about the education of the healthcare work force. This report identified twenty-one competencies for the twenty-first century. Included among the identified competencies are that HCP must practice relationship-centered care with individuals and families and that they must use communication and information technology effectively and appropriately. The stance of this report suggests that the Pew Commission would agree that it is important to preserve caring behavior even as we use technology in healthcare.

Accreditation bodies in nursing education have expressed thoughts on technology in patient care. The American Associate of Colleges of Nursing (AACN) states “knowledge and skills in information and patient care technology are critical in preparing baccalaureate nursing graduates to deliver quality patient care in a variety of healthcare settings” (2008, p. 17). This asserts that graduates must be competent and comfortable in the use of various technologies, including computer-related and those involved in direct patient-care. Furthermore, the AACN holds that graduates be able to articulate the impact that technology has on improving patient outcomes and increasing safety in healthcare settings.

In 2011, the National League for Nursing (NLN) also published a statement of competencies for nurses. Though it does not list specific knowledge or skills, it does provide a standard of qualities or attributes of the graduate nurse. The NLN lists the following four competency categories identified for the Associate or Diploma degree programs: human flourishing, nursing judgment, professional identity, and spirit of inquiry. Though technology is a permanent and increasingly present aspect of healthcare, the NLN would advise that nurses use it in a way that is congruent with professional identity, or in other words, “in ways that reflect integrity, responsibility, ethical practice, caring, advocacy, and safe, quality care” (NLN, 2011).

In 2008, the NLN published a position statement related to the increasingly technologic healthcare setting. The group asserted that it is imperative that nurses have the knowledge and abilities to use informatics tools to ensure high quality, safe patient care. An additional recommendation was made that not only students be made competent in the use of IT, but also that faculty groups establish informatics goals and achieve competency through participation in development programs.

Literature Review

Concept of Caring

Caring is fundamental to nursing and is one of its core values. While this has been true from the inception of the profession, the concept has been more fully understood and developed via research, analysis, and through the creation of theories of caring. Through meta-analysis of the concepts of caring and presence, six pre-requisites were identified as being necessary to the formation of a therapeutic, caring nursing relationship: establishment of a need to be cared for, patient willingness to be cared for as well as nurse willingness to enter into the patient experience, a values- or ethics-based nursing practice, professional and personal maturity of the nurse, and an environment that is conducive to caring (Finfgeld-Connett, 2008). Additionally, it has been suggested that there are three attributes of a caring nurse: intentional use of caring, expert nursing practice (inclusive of knowledge and skills), and a high degree of interpersonal sensitivity (Finfgeld-Connett, 2008).

Kristen Swanson's Theory of Caring (1991), describes caring as a process and acknowledges four stages in a caring encounter: knowing, being with, doing for, enabling, and maintaining belief. In the "knowing" stage, a nurse enters into the patient's experience and

learns the reality of that situation from the patient's perspective. In the "being with" stage, the nurse caringly communicates that he or she is committed to assisting the patient toward an agreed upon goal. In the "doing for" and "enabling" stages, the nurse employs caring interventions to achieve the goal. In the "maintaining belief" stage, which comes before and occurs simultaneously with all other stages, the nurse demonstrates her beliefs in the value of the person, in her interventions, and in the process itself. Each of the prerequisites and attributes identified in the meta-analysis of caring is evident in the Theory of Caring.

Benefits of Caring

Research on the concept of caring has provided evidence of the impact of caring. Caring benefits not only patients and health outcomes but also the caregivers. Finfgeld-Connett (2006) reported the following positive effects of a caring nurse relationship for both the patient and the nurse: improved mental well-being, decreased stress and improved ability to cope, enhanced personal growth, and increased nurse job satisfaction and patient satisfaction with care.

Benefits to patient. In a qualitative study that investigated how nurse-client interactions promote well-being, Rogers (1996) identified five major themes of a caring nurse-patient relationship: improved attainment of health goals, higher rates of satisfaction with nursing care, improved provision of comfort, facilitation of growth, and enhanced healing. Furthermore, the alleviation of suffering and distress as well as a decreased sense of isolation has been associated with the caring nurse-patient relationship (Zyblock, 2010; Finfgeld-Connett, 2008). Finch (2008) reported that the emotional health of the patient improved as evidenced by enhanced feelings of peace, a sense of encouragement, and an overall more positive perspective on life. This impressive list of patient benefits illustrates that caring is an essential aspect of nursing

practice and that facilitating caring behaviors should hold priority status in nursing education and continuing education. Nurse educators are obligated to ensure that regardless of subject matter or skill competence validation, the influence of caring be recognized as essential to effective and satisfying nurse-patient relationships.

Benefits to nurses. Nurses have much to gain from entering into caring relationships with their patients. Nursing research has provided evidence of the positive impact caring has on the caregiver. A decrease in stress levels has been demonstrated as well as an increase in reported job satisfaction rates (Glebocki, 2010; Finfgeld-Connett, 2008; Poochikian-Sarkissian, Sidani, Ferguson-Pare & Doran, 2010). Additionally, a sense of empowerment or capability to advocate and effect change as a result of providing caring nursing practice has been discovered (Finfgeld-Connett, 2006; Poochikian-Sarkissian et al., 2010).

Benefits to industry. Leaders in the healthcare industry have a vested interest in the caring nurse-patient relationship. Recent nursing research has revealed a correlation between patient satisfaction scores with patient perception of nurse caring (Palese, et al., 2011; Burtson & Stichler, 2010). High patient satisfaction scores are desirable because of the marketing power they yield in the increasingly consumer-driven healthcare environment. Satisfaction surveys are public information and are found easily on the intranet for perusal by potential patients. Moreover, as of October 2012, Medicare and Medicaid reimbursement will be influenced by patient satisfaction scores. Poochikian-Sarkissian et al. (2010) found that nurse caring, especially attention to patient preferences and needs as well as encouragement of patient participation in their own care was significantly correlated to satisfaction with care overall. For these reasons, hospital administrators are motivated to create work environments that are conducive to nurse caring and allow for this type of nurse-patient relationship.

The Meaning of Caring

Research on caring has illuminated the fact that the concept of caring has a different meaning for patients than it does for nurses. Nurses are educated on various theories of caring, which rely heavily on humanistic or relationship-based attributes of the notion. In a study that observed nurse-patient interactions and then quantified the participants' opinions on caring behavior, Henderson et al. (2007) found that nurses tend to describe caring as "getting to know" the patient, "translating" information for the patient and family, and "expert compassion" in establishing trust and closeness. Patients, on the other hand, placed high value on competency in psychomotor skills and performance of tasks and defined timely attentiveness to requests as the best indicator of nurse caring. Finch (2008) corroborated these findings and reported that patients identify nurse caring as skill or task competency, attentiveness to patient, and sympathy with the patient's situation.

In a study that looked at perceptions of caring by patients, nurses, physicians, and administrators, Abdullah et al. (2007) found that all constituents placed high value on nurse vigilance as evidence of caring. Vigilance, in this study, is defined as "intellectual and experiential attention, detection, and readiness to act" (p.34). Perceptions of caring still differed, however. Patients reported that the nurses that paid the most attention to them were the most caring; nurses stated that knowing and understanding the patient's feelings was most important to the caring relationship; physicians identified humility, responsibility, and accurate detection of problems and administrators listed customer-service themed attributes such as politeness and commitment to job as caring behaviors.

In a study done on patient satisfaction as an outcome of nurses' caring behaviors, Palese et al. (2011) corroborated the phenomena of differing meanings of caring. In their study, nurses listed expressive and relationship behaviors as examples of caring while patients listed the following as the top three indicators of nurse caring: knowledge and skills, being on time, and managing equipment skillfully. Interestingly, however, in terms of patient satisfaction, these same patients listed feeling connected to the nurse as most important in being satisfied with nursing care. It seems these patients want the nurses to be skillfully knowledgeable in both the technology and the relationship-based aspects of nursing care.

Technology

Technology, as defined by Merriam-Webster (2012) is the "practical application of knowledge especially in a particular area; a capability given by the practical application of knowledge; a manner of accomplishing a task especially using technical processes, methods; the specialized aspects of a particular field of endeavor." In the world of medicine and nursing, expert knowledge has been transformed into miraculous technology that has enabled the capabilities to assess and intervene in health conditions like never before. It has been developed to treat and care for patients more safely, efficiently, and effectively. Modern medical technology is essential in contemporary nursing practice, which encompasses much more than simply attending to the physical and emotional needs of our patients. In many instances, in order to provide quality, evidence-based care, we both require and desire what technology can provide (Almerud et al., 2007). In this rapidly changing environment, the profession of nursing must embrace and adapt to technology if it intends to be a relevant and influential in the healthcare setting (Bernardo, 1998).

Advantages and disadvantages. Many advantages of technology have been cited: increased efficiency of care, improved patient safety, and enhanced communication. Furthermore, it has been stipulated that through the use of technology, nurses have a unique opportunity to better know the patient and understand his or her clinical situation (Bernardo, 1998; McGrath, 2008). Over-reliance on technology, however, is fraught with peril to the therapeutic nurse-patient relationship. If nursing practice is based solely on the data derived from technology and fails to take into account the subjective information provided by the patient, the opportunity for relationship-based care is lost.

While technology can prolong life and facilitate treatment, nurses must make an intentional attempt to keep the patient's inherent uniqueness at the center of their assessment and intervention efforts. In doing so, they resist the "technologic dehumanization" that can result from allowing the technology to which the patient is attached to overshadow their personhood (McGrath, 2008). From his synthesis of research on the impact of technology on nursing practice, Bernardo (1998) identified five major areas of potential sabotage of the therapeutic nurse-patient relationship via the use of technology. First, it alienates a nurse from the core values of the discipline and, secondly, more attention is ultimately given to the machine than to the actual person. Thirdly, the focus of innovation in nursing practice is shifted from a relationship-centered, interpersonal concentration to that of computer or technical concern. Furthermore, technology potentially demeans the value of intuition and from those nursing activities that are not easily measureable and quantifiable. Finally, Bernardo is concerned that the use of technology by nurses diminishes the importance of the patient's unique perspective.

Phenomenological research (Almerud et al., 2007) of being a caregiver in a technologically intense environment further identified that technological prowess is more highly

regarded than being a skilled or caring communicator. Those nursing activities that are commonly associated with caring (such as touch and presence) are not easily measured, frequently not documented, and rarely included in care plans. Therefore, expert caring is not given as prestigious recognition as is technical adeptness. Though this perspective seems bleak to those committed to caring nurse-patient relations, the authors go on to contend that nurses are presented with a choice on how to practice. They argue that once reminded of the assumptions that underlie the principles of the profession and discipline of nursing, nurses can realize that using technology to better understand their patients is not mutually exclusive to connecting with those patients on a personal and meaningful level. When nursing presence is combined with technological practice, an opportunity is created to better understand the patient (Bernardo, 1998).

Reconciliation of Technology and Caring

Much has been written about the supposed incongruence of nurse caring and modern technology. Hawthorne and Yurkovich (1995) address issues related to compatibility of science, technology, and caring. The authors suggest that as technology becomes increasingly commonplace in the nurse-patient relationship, nursing practice will become more concerned about efficiency than about the development of interpersonal relationships through caring. Furthermore, the amount of information gleaned from technology overwhelms the nurse's ability to reflect on nursing practice and find meaning in caring for other people. The authors warn that this lack of sense of purpose coupled with an overemphasis on technology may lead to an identity crisis for the profession of nursing. They assert that technology and caring are divergent concepts and cannot envision that the profession could encompass both.

Musk (2004) also questions if caring and technology exist on opposite ends of a continuum. Her observation of modern healthcare is that duties once considered “original” to nurse caring are now delegated to unlicensed assistive personnel while those tasks deemed more difficult, complex, or high-tech are attended to by the registered nurse. Less time spent with the patient completing these cares translates into lost opportunity to establish a caring relationship. Though Musk posits that the basics of the nursing role may be forgotten in the rush to improve nursing practice with technology, she concedes that technology in healthcare has an unavoidable and direct impact on nursing practice. Therefore, the profession has many reasons to become participants in technologic changes rather than passive observers. Among these reasons, Musk describes the unique position nursing has as witness to the crossroads of the power of technology (with its life preserving and prolonging abilities) and the psychosocial needs (at times very intense) of the patients dependent on it. By combining traditional nurse caring with modern technological advancements in treatment, Musk believes that nursing has an opportunity to fulfill its true potential and more fully develop that body of knowledge that is unique to nursing.

Theory of technological competency as caring. Technology and caring are not necessarily mutually exclusive. It is possible to be comfortable and competent in the use of technology and at the exact same time exhibit caring behaviors. In 2005, Locsin theorized that through the competent use of technology, a nurse’s ability to know, care for, and be present with his or her patient is enhanced and improved. The author asserts that the use of technology to know the person as a whole is in fact a method of fulfilling the caring intention of the nursing profession. However, the theorist warns against becoming overly fixated on technology lest nurses take on the image of an automaton, or “robonurse,” a term he has coined to describe a nurse who is primarily concerned with the completion of technical tasks rather than on

connecting with the patient. Rather, every nurse must “consciously acknowledge the challenge to seek meaningful and appropriate ways of practice in order to know the whole person” (Locsin, 2002, p. 3). Appropriate use of technology to understand and care for a patient involves avoiding the potential tendency to reduce the patient to a data-producing object. Instead, the focus should always be on the person as a whole and not as the sum of all the component parts. Locsin urges nurses to embrace the idea that competence with technology (ever-present) is a method of caring for their patients.

To Locsin, technology allows for knowing the other person by providing additional information about and a more complete picture of the patient. Via this enhanced knowledge, technology actually provides an opportunity for the use of self in authentic relationships with our patients. Nurses should value their competence with technology as an expression of caring and realize that this competence is vital to modern healthcare.

True competence in the use of technology requires that the nurse understands how to use it appropriately. Over-reliance on machines and technology to fully inform about patient status can jeopardize the opportunity to “be with” and “know” patients. While it is true that machines can have louder alarms and beep more insistently than humans, it is important to listen as intently to patient’s stories to truly understand the reality of the patient’s situation. Preservation of intentional caring even in very-highly technologic situations ensures that the nurse attend to the patient holistically and avoids objectifying patients by reducing them to the organ that is causing the beep. “As soon as one clarifies the assumptions underlying nursing care, the keen vigilance over technological devices, documented data, laboratory results and measure parameters need not exclude focused and empathic attention to patients’ stories and experiences” (Almerud et al., 2007, p. 135). Locsin cautions, however, that only with expertise can

technological competence as an expression of caring in nursing be realized. Nurse educators have a huge role in developing that expertise.

Incorporation of Caring into Technologic Care

Learning to become proficient with technology is a challenge faced by nurses and nurse educators alike. Though expert nurses are able to more easily shift their focus from patient to machine to patient and back again, novice nurses may struggle with technology and this struggle may cause significant personal and professional repercussions (McGrath, 2008). It is evident that this group of nurses needs support and assistance in attaining proficiency with technology. Almerud et al. (2007) documented nurses' perception that there is a rigid expectation to be an expert with technology and that the lack confidence or ability makes the nurse look incompetent. The authors found that this mandate to achieve competence is further compounded by the modern healthcare environment, with its heavy workloads, high patient acuity, cost containment, and frequent staffing shortages, which leaves little time for the training or education of nursing personnel. "Nurses are expected to seamlessly bring together their technical competence with their ability to be caring individuals" (Musk, 2004, p. 13).

Educators are confronted with the dilemma of fitting this critical emphasis on caring into an educational agenda that is already overfilled with technical content. Time constraints and lack of resources compound the issue. They are charged with the formidable task of designing teaching strategies that will assist nurses to achieve the balance of science with the art of caring (Curtis & Jenson, 2010). They are encouraged to create learning environments that allow their students to reflect and find meaning in their nursing practice (Blum et al., 2010). Unfortunately, the literature documents a lack in direction in how to meet these lofty and important goals.

Strategies to improve caring. Though the benefits of a caring nurse-patient are well documented and understood, the instructional methods in which to improve the caring of practicing nurses are not (Blum et al 2010; Glembocki & Dunn, 2010). Some methods, however, have been shown to be effective in other professions and disciplines and should be considered as a means to this end. Among these methods are educational sessions that focus on nurse self-reflection of caring, confluent education strategies designed to integrate affective learning with cognitive or psychomotor training, and modified simulation training that assimilates caring themes into the other teaching/learning objectives.

Reflective education intervention. Glembocki and Dunn (2010) conducted a quantitative study to determine the effectiveness of using self-reflection as an intervention to increase nurse caring behaviors. The reflection intervention focused on intentional contemplation about the actions and behaviors of the participants in nurse-patient interactions. The rationale for the design of the intervention was that reflection enhances recognition of caring and leads to a refocusing on core values of nursing – caring and healing. The researchers concluded that the educational strategy increased nurse perception of caring and enhanced overall caring behaviors.

When nurses are made aware of their own caring, they are better prepared to establish the type of caring nurse-patient relationship that results in improved outcomes in future patient encounters (Finch, 2008). Keatley (2008) demonstrated that reflective journaling as a teaching strategy with nursing students facilitates role development. The activity and the discussions it generated illustrated the interdependent relationships between the humanistic and technical aspects of nursing practice. Intentional reflection on practice clarifies how the interpersonal skills and technical abilities of a nurse blend together to create quality nursing care.

Confluent education. Confluent education is concerned with integrating affective learning with cognitive or psychomotor training. The methods employed seek to cause an emotional reaction of the learner by provoking his or her beliefs, values, or preferences. Confluent education is fitting with adult learning principles that it draws on students' past experiences and knowledge to create new understanding (Misch & Peloquin, 2005). Some examples of confluent strategies include literature, guest speakers, and journaling. Confluent educational strategies set out to demonstrate that how to *be* is as important as how to *do*. This type of instruction has been shown to be effective in enhancing empathy in physical therapy students (Misch & Peloquin, 2005).

Curtis and Jensen (2010) researched confluent educational methods as a process for increasing caring in nurses. From their descriptive quantitative study, the researchers concluded that knowledge is gained as a result of challenging assumptions, caring and empathy are developed, and motivation to effect change is stimulated. The study participants reported that as a result of confluent instruction, they are more aware of caring and for some, this awareness resulted in a renewed dedication to caring activities. The researchers concluded "confluent education is one way to integrate liberal education, nursing science, critical thinking, and human caring" (p. 52).

Simulation grounded in caring. Simulation training is not new to nursing education and copious amounts of evidence in the literature attest to its efficacy and application. The premise of simulation training as an educational strategy is realism. Through participating in a perceived-real patient scenario, a nurse is able to safely practice his or her care and simultaneously increase critical thinking skills and clinical reasoning abilities (Panosky & Diaz, 2009). Jefferies (2006) defines this teaching strategy as any virtual representation of an actual

situation – ranging from case studies to role-playing to high fidelity human patient simulators. Most of this research on the use of stimulation training in nursing, however, centers on the use of simulation to instruct and validate technical skills and competencies (Eggenberger & Keller, 2008). Little is known about using this type of training to facilitate the role development of the caring nurse. Blum et al. (2010) investigated the effectiveness of using high-fidelity simulated patient interactions to teach caring behaviors to nursing students. The researchers conducted pre-intervention and post-intervention surveys to identify the students' abilities to self-recognize caring behaviors. The authors concluded that simulation training leads to a significant increase in the student's ability to recognize caring behavior. This recognition leads to a consensus definition of what caring behaviors are. Additionally, through the reflective activities and modeling opportunities afforded by the debriefing portion of the training, student nurses enhanced their reflective knowing and caring abilities. Through simulation, students discovered the importance of caring communication.

Panosky and Diaz (2009) demonstrated that simulation provided a rich environment in which student nurses increased their caring behaviors and empathetic understanding of the patient's situation. This understanding led to greater development of nurse benevolence. Simulation training provides an opportunity for student nurses to understand the patient on a deeper, more meaningful level which in turn facilitates enhanced nurse caring.

Storr (2010) investigated the effectiveness of using role-play as simulation training with student nurses to illuminate the importance of "connecting" with patients. Through simulation, students were able to discover that individual attitude and approach to care impacts how well the nurse is able to know his or her patient. Students demonstrated understanding that being informed about the patient's clinical situation is different from knowing the actual person's

story; being able to complete the technical skills of the patient's care is not the same as caring for the person. The idea of knowing the patient in his or her own sense of reality is the cornerstone of both Swanson's Theory of Caring (1991) and Locsin's Theory of Technologic Competency as Caring in Nursing (2005).

Recommendation

Technology in healthcare is an unavoidable fact. Frequent advancements in technology necessitate ongoing training for nurses to be able to utilize it in their practice. In nursing education, it is critical to incorporate acknowledgement of core nursing values, such as caring, while providing technical instruction in the use of new technologies. The evidence found in the literature identifies a large gap in nurse education during the instruction and implementation of new technology, namely the lack of attending to the humanistic side of nursing practice.

Being competent in the use of technology is theorized to be a manifestation of caring in nursing. An essential component of that competence, however, is the appropriate use of technology. Appropriate use includes maintaining a focus on the patient being cared for while allowing the technology and the data it provides to better inform the caregiver of the patient. Being proficient in the use of technology without caring reduces the nurse to a robot, simply completing technical tasks. Equally unacceptable is the avoidance of the use of technology in an attempt to preserve the interpersonal relationship with patient.

Evidence has shown that when allowed to slow down and to think intentionally about their practice, nurses are able to find meaning. This self-reflection has been demonstrated to increase awareness of caring behaviors, create a shared vision and definition of what it means to be caring, and enhance future efforts at caring behavior. To retain a focus on patient-centered

caring with the use of new technologies, it is paramount to intentionally structure activities that encourage self-reflection during the learning of new technical abilities. This could be accomplished with the use of two strategies to facilitate self-reflection during instruction of technology: simulation training that has an emphasis on caring and the use of confluent teaching methods.

Simulation

Simulation training is traditionally aimed at the acquisition of new skills and technical abilities. Currently, more research is being conducted on its efficacy in improving teamwork and communication. It has also been shown to enhance caring and identification of caring behaviors when there is particular attention applied to the concept. The use of simulation, with an emphasis on reflection during debriefing, has been demonstrated to assist practicing nurses to identify their own caring behaviors, to recognize opportunities to enhance their caring practice, and to find meaning in the use of technology as an expression of caring for their patients.

When simulation training is provided as an adjunct to instruction of new technology, it allows nurses to use their newly-acquired technical skills in “real” patient interactions. The nurses are encouraged to interact with the patient as they normally do without any special directions provided ahead of time to influence caring behavior. The debriefing portion of the training focuses not on proficiency of technical skills but rather on the presence or absence of caring behaviors. Nurses are asked to describe and define caring behaviors. The activity of defining and articulating caring behaviors encourages intentional thought about caring, which has been demonstrated to enhance understanding of what it means to be caring and improve recognition of how each nurse uses caring in his or her practice. As nurses are able to identify

ways in which caring was expressed during the utilization of the new technology, the centrality of caring in nurse-patient relations is reaffirmed. Nurses are encouraged to view their technologic competence as means of caring. Improved ability to recognize caring and non-caring behaviors while performing new skills, stimulates the contemplation on how to maintain focus on patient and better exhibit caring in practice.

Confluent education

The realities of time-constriction and cost-containment during continuing education for nurses may preclude the opportunity to provide simulation training during the instruction of new technology. Confluent education strategies provide an opportunity to self-reflect on caring during the use of technology in the absence of a simulated patient encounter. Stimulation of the affective domain of learning has been shown to promote better understanding. Activities that arouse the nurse's values, beliefs, and feelings surrounding caring in nursing practice, motivate nurses to intentionally increase caring behaviors. Connection of the instruction of new technical skills with the emotional response to the core nursing value of patient-centered care, assists nurses to find ways in which to demonstrate caring while utilizing the new skill.

Utilizing actual patients and their account of nurse-technologic caring is a powerful confluent education strategy. This could be accomplished via guest speakers, either in person or recorded, or a written account of such an encounter. Additionally, eliciting personal stories from the nurse participants of being a patient or family member of a patient in a situation of nurse-technologic caring would serve to guide group discussion on perceived caring or non-caring behaviors. The aim of these activities is to stimulate self-reflection on how to improve caring behaviors and preserve caring as central to all patient encounters. This awareness will assist

nurses to be cognizant of their caring behaviors, to realize how their behaviors are interpreted by the patients they care for, and to motivate nurses to be more intentionally caring in their nursing practice.

Conclusion

Nursing practice is increasingly technology-dependent. Though it is essential that nurses be comfortable and competent users of this technology, they must also preserve a focus on the caring nurse-patient relationship in order to achieve quality nursing care. Strategies that involve reflection on practice have been shown to increase recognition and demonstration of caring behaviors of nurses. These strategies should be employed during technical training to assist nurses in maintaining their focus on caring while incorporating new technical abilities into their practice.

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