Fall 2013

Palliative Care Knowledge among Bachelors of Science Nursing Students

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PALLIATIVE CARE KNOWLEDGE AMONG BACHELORS OF SCIENCE

NURSING STUDENTS

By

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A Thesis

Presented in Partial Fulfillment of Requirements for the

Degree of

Master's in Nursing Education

In the

Wellstar College of Health and Human Services

Kennesaw State University

Kennesaw, GA

2013

Kennesaw State UNIVERSITY
Graduate College

Final Submission of Thesis or Dissertation

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ACKNOWLEDGMENTS

I would first like to whole-heartedly thank my thesis chair, Dr. Nicole Mareno. She has provided support, wisdom, and patience throughout this project's course. She helped to provide direction and guidance when I started veering off course and into lofty arenas. Despite not having prior experience in palliative care, Dr. Mareno was able to bring forth pertinent information and research to help make this project what it is today.

Also, a warm and gracious thank you goes out to my second reader, Dr. Patricia Hart. She was available when I needed her for revisions, but was also a wonderful teacher who taught me everything I know about research.

I would also like to thank Dr. Genie Dorman for her constant support and humor throughout my Master's degree education. Along with my colleagues at Piedmont Hospital, Chad Queen, Lauren Wilde, Meghan Grone, and my other coworkers who always checked up on me when times were stressful.

Finally, I want to share a sincere appreciation to my family and friends, who without them I would not have achieved what I have today. To my parents, Robert and Beth Pope, who always have provided support, both emotional and financial, as well as encouraged me to follow my dreams and passion. To my younger siblings, Emily, April, and Travis, who taught me how to be a good teacher from a young age. And to Abby Roach, who always made a bad day better.

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ABSTRACT

Purpose: To assess the palliative care (PC) knowledge of junior and senior level bachelors of science nursing (BSN) students and to compare the PC knowledge between these two groups of students.

Design: A non-experimental quantitative, cross-sectional, survey design was used.

Methods: Seventy two students from a junior level and a senior level BSN course were recruited at a southeastern United States university. The participants completed the demographic form and the Palliative Care Quiz for Nursing (PCQN). Data collection took place from September 2013 to October 2013.

Data Analysis: Overall mean score percentage from the total sample and mean raw scores from each group were used to answer the research questions. An independent *t* test was performed to assess for differences in PC knowledge scores between the two groups of students.

Results: The total percentage rate on the PCQN was 61%. Juniors (M=11.7) scored slightly lower on the PCQN than senior level (M=12.93) students. The difference in scores were small, but statistically significant (p<0.05). Participants scored lowest on identifying chronic versus acute pain, and highest on understanding that palliative care is an aggressive treatment.

Clinical Relevance: Junior and senior level BSN students lack adequate information on palliative care, and did not meet the AACN expectation of a generalist registered nurse.

Further, internal reliability of the PCQN was a concern. Additional reliability testing of the PCQN should be done in the future.

Keywords*: bachelors of science in nursing, BSN, students, palliative care, knowledge, Palliative Care Quiz for Nursing

CHAPTER 1: INTRODUCTION

With the aging population and increase in means to continue life, individuals are living longer lives with a mean life expectancy of 78.7 years (Centers for Disease Control and Prevention [CDC], 2013). As healthcare costs rise, technology continues to grow, and treatments continue to prolong life, nurses are challenged to consider palliative care (PC) needs for patients and families when it is most often considered for terminal illness, not for chronic management of conditions (Kuebler, 2012). With chronic diseases like heart disease and cancer among the leading causes of death in the United States (U.S.), palliative care plays an integral role in these patients' plans of care (CDC, 2013). Sadhu, Salins, and Kamath (2010) state that "health care professionals function largely within a culture that focuses on cure, and many avoid the patient who is dying" (p. 155).

Not all individuals or families who face end-of-life decisions want or need advanced therapies, such as mechanical ventilation, chemotherapy for malignant cancer, or cardiopulmonary resuscitation (CPR). Palliative care is one strategy to help patients and families who do not wish to continue advanced treatments, or who have no other treatment options due to their disease process or quality of life. Palliative care is defined as providing comfort, pain management, and relief to patients and families during a vulnerable time of terminal illness (Karkada et al., 2011). Palliative and hospice care helped 1.65 million patients in 2011 in the U.S. (National Hospice and Palliative Care Organization [NHPCO], 2012). Palliative care services include 24 hour care, pain

management, spiritual care, and speech, physical, and occupational therapies (NHPCO, 2012).

Nurses play a central role in palliative and end-of-life care. Nursing roles include developing plans of care, providing leadership for staff, and guidance and support for patients and families (Karkada et al., 2011). However, researchers have found that not all nurses feel comfortable, or are knowledgeable about the care needed for a dying patient (Brajtman et al., 2007; Karkada et al., 2011; Kuebler, 2012; Sadhu et al., 2010).

As part of the American Association of Colleges of Nursing (AACN) *Essentials of Baccalaureate Education* (2008) and the *Peaceful Death* document (1998), specific goals and guidelines are outlined to ensure competency in palliative care prior to graduation. Sadhu et al. (2010) reported that nurses are ill-prepared despite these guidelines because nursing programs are not held accountable for PC competency. Researchers have found that Bachelor of Science in Nursing (BSN) students and their educators lack the basic knowledge of PC that is needed to provide adequate care for terminally ill patients and their families (Arber, 2001; Brajtman et al., 2007; Brajtman et al., 2009; Karkada et al., 2011; Kuebler, 2011; Ross et al., 1996).

Statement of the Problem

Karkada, Nayak, and Malathi (2011) have noted that nurses make up a large part of the healthcare profession, yet they are falling behind on instituting palliative care within the curriculum. This is impressive considering how prevalent nurses are in initiating patient care and being the primary caregiver to those hospitalized.

When entering the healthcare field, death of a patient is unavoidable and becomes part of the job as a nurse. It is important to integrate PC education within the BSN degree

to better prepare new graduates for the inevitable care of a terminally ill patient. However, several researchers have reported that nursing students and new graduate nurses are not adequately prepared for caring for this specific population (Brajtman et al., 2007; Karkada et al., 2011; Kuebler, 2012; Sadhu et al., 2010). A challenge with integrating PC education into nursing curricula are time constraints and the volume of materials necessary to prepare BSN nurses for the complexities of caring for terminally ill patients and their families (Brajtman et al., 2007; Brajtman et al., 2009; Karkada et al., 2011; Malloy et al., 2006).

If nursing students are exposed early to PC in their education and nursing careers, then appropriate use of PC in the care of a dying or terminally ill patient might be implemented earlier and more effectively. As well as meeting the requirements of the AACN *Essentials of Baccalaureate Education* (2008), early exposure to PC may increase patient and family satisfaction with care and provide holistic care to those who are dying or terminally ill.

Background and Need

In the U.S. healthcare system, it is not seen as an accomplishment, but a "medical failure," when a patient has died (Sadhu et al., 2010, p. 157). One of the U.S. healthcare system's goals is to preserve life and use advanced medical technology and available treatments to accomplish this task (Kuebler, 2012). However, not every patient can be preserved to a quality of life that is appropriate for their circumstance; it is important to establish a goal of providing a dignified way to live or die that will improve their quality of life. Nurses have firsthand experience during these moments with patients and play an integral role in helping to meet patients' and families' wishes.

Life is prolonged when it is deemed futile particularly in regards to chronic disease processes. PC is rarely mentioned at the bedside unless malignant, metastatic, inoperable cancer is the diagnosis. PC is an option for individuals and families who want a better quality of life despite their terminal illness diagnosis.

Student nurses rarely have experience with the dying population due to faculty viewing these cases as undesirable and as "not good teaching cases" (Sadhu et al., 2010, p. 157). Nursing schools have not adequately incorporated palliative care into the curriculum to increase awareness of PC content and skills (Sadhu et al., 2010). Sadhu et al. (2010) asserted that students are lacking in knowledge on PC. Students cannot be expected to be experts in any capacity due to lack of experience in the clinical arena; however, schools and hospitals are holding students and new graduates accountable for this material and expect an adequate competency level despite lack of training and teaching on the subject (Sadhu et al., 2010). In order to better prepare students to care for dying individuals, implementation of PC experiences within the nursing curriculum is critical (Brajtman et al., 2007).

It is important for the nursing profession to be accountable for knowing how to care for PC patients appropriately. Educational measures implemented at the bachelor's level may help to better prepare future nurses. PC education is crucial at this time due to the aging population and increase in co-morbidities among the elderly (*Peaceful Death*, 1998). The focus on BSN students stemmed from the preference of bachelor's prepared nurses by patient care facilities (AACN, 2008). BSN education is now considered to be the minimum amount of education for a nurse (AACN, 2008). As PC grows within the

U.S. healthcare system, bachelor's prepared nurses will be the primary caregiver for this population, placing an importance for adequate knowledge on the subject.

Research Questions and Hypothesis

The following research questions and hypothesis were proposed:

1. What is the PC knowledge level of junior and senior level BSN nursing students?

2. Is there a difference in PC knowledge level between junior and senior level nursing students?

The following hypothesis was proposed:

1. Senior level BSN nursing students will score higher on PC knowledge as measured by the Palliative Care Quiz for Nursing (PCQN) than junior level BSN nursing students. However, this difference in PC knowledge between these two groups of students will not be sufficient enough to care for palliative care patients.

Purpose

The purpose of this study was to assess the PC knowledge of junior and senior level BSN students and to compare the PC knowledge level of junior level nursing students and senior level nursing students of a southeastern United States BSN program. By performing this comparison, a determination was made as to whether the curriculum in this program was sufficient for preparing BSN students for the care of patients under palliative care.

Theoretical Framework

Benner's (1982) model of skill acquisition was used to guide this inquiry. Benner (1982) conceptualized the Dreyfus Model of Skill Acquisition (1980) to relate to nurses and advancement from a beginner to expert nurse. The original study performed by the

Dreyfus brothers modeled chess players and airplane pilots to exemplify the progression of each stage from novice to expert through accruement of skills and experiencing varied situations (Benner, 1982). Benner utilized this method to demonstrate how clinical experience can also develop a novice nurse into an expert. Benner (1982) included five stages in the model: novice, advanced beginner, competent, proficient, and expert. Benner qualitatively studied 21 pairings of nurses (beginner and expert) and interviewed them regarding their clinical experiences (1982). Benner evaluated characteristics required for each stage and necessary characteristics of an expert nurse. For this study, the focus was on novice nurses and very early advanced beginners, as students are the sample and nursing experience was minimal for this population.

Benner (1982) classified a novice nurse as one who has "no experience of the situations in which they are expected to perform" (p. 20). The novice is capable of performing objective skills, such as taking a blood pressure or temperature (1982). However, the novice may be unable to comprehend what these measurements mean and the treatment needed. One aim of the study was to compare PC knowledge level between junior level BSN students and senior level BSN students. The study hypothesis proposed that junior level nursing students had a lower level of PC knowledge due to shorter time duration in the nursing program, and lack of clinical experience.

The advanced beginner is one who has had real life experiences and performs acceptably in situations (Benner, 1982). However, advanced beginners are task oriented and are rule followers. Benner (1982) asserted that advanced beginners believe, or want to believe, that each experience can be found in a textbook. When situations occur that are out of the comfort zone, the advanced beginner looks to the mentor for support and

guidance in a time of vulnerability (Benner, 1982). For this study, the author

hypothesized that senior level BSN students had a higher level of PC knowledge than

junior level BSN students. Scores on the Palliative Care Quiz for Nursing were used to

categorize students as novice or advanced beginner.

Definitions

The following are terms that were used frequently throughout this paper with their

corresponding definitions.

Conceptual Definitions

Knowledge: the fact or condition of knowing about a fact, skill, situation and

having the ability to relay that information to a third party (*Merriam-Webster.com*, 2013).

Palliative care (PC): As defined by Karkada, Nayak, and Malathi (2011), the

delivering of "relief to a terminally-ill person through symptom management and pain

management" with a "goal not to cure but to provide comfort" and optimal quality of life

(p. 20).

Junior level BSN student: a student who was beginning nursing studies at the

undergraduate level and has completed the core classes needed to enter nursing school.

Senior level BSN student: For the purposes of this study, a senior nursing student

was one who will be graduating within the semester and has completed all core classes as

well as most of the nursing curriculum.

Bachelors of nursing degree (BSN): a four year program resulting in the ability

to sit for the registered nursing boards. This is the preferred education level for a bedside

nurse (AACN, 2008).

Curriculum: a set of courses that create a degree program and must be completed by the student to graduate from the program (*Merriam-Webster.com*, 2013).

Terminal illness: a sickness or disease that is unresponsive to treatment or will result in the death of an individual. Examples include malignant cancer and congestive heart failure (*Merriam-Webster.com*, 2013).

Novice: a person who is new to a field with limited knowledge on the subject matter (Benner, 1982).

Advanced beginner: a person that is capable of some knowledge and skills within a field but needs guidance and support for continued growth (Benner, 1982).

Expert: a person who is proficient at the skills and knowledge of a subject or field (Benner, 1982).

Operational Definitions

Palliative care knowledge: Ross et al. (1996) defined palliative care knowledge as the understanding of death and dying, pain and symptom management, medications and interventions used to care for this population, as well as the understanding of the aging process. In this study, PC knowledge was measured using Ross et al.'s (1996) tool, Palliative Care Quiz for Nursing (PCQN), developed to assess basic PC knowledge among nurses.

Theoretical Assumptions

With the use of Benner's (1982) novice to expert theory, an assumption was made that there was a difference in knowledge between the two student samples; however, that difference was limited due to lack of nursing students' experiences with the PC culture. There was not an assumption that the students will progress from novice to expert within

two years of school, but rather from novice to a young advanced beginner. This was expected if palliative care was sufficiently incorporated into the BSN curriculum at the school studied.

Research Assumptions

In regards to the research that was completed with this sample of nursing students, the assumptions pertained to the PC knowledge of nursing students prior to nursing school. It was possible that a student would have a basic understanding of PC among this population due to exposure as a layperson, through individual experiences or media coverage (movies, television programs, or news stories related to palliative care or hospice care). An assumption was made that senior level nursing students would score higher on the PCQN than junior level nursing students.

Limitations

Limitations to this study included the varied experiences of each individual nursing student involved in the survey, and if the palliative care course was completed by senior level BSN students. At the school used for this study, a PC course is offered as an elective that can be completed in addition to the core curriculum. Not all students take this course, so if students have taken this class, it could affect their answers to the survey, and they would most likely be more knowledgeable than the other students. Each student nurse's knowledge would vary depending on time at the bedside, patient population cared for, and clinical experiences offered which could create a limitation on PC exposure.

Another limitation to this study included personal experiences of the individual nursing student to PC. Personal experiences could include having a family member, friend, or acquaintance that had accessed PC services. Personal experiences with PC

could create either a negative or positive outlook on PC for the student, depending on the individual experience.

Lastly, this study used a convenience sample of BSN students. All students surveyed attended the same university in the southeastern United States. It was beyond the scope of this study to survey BSN students from other parts of the country.

CHAPTER 2: REVIEW OF THE LITERATURE

The following is a literature review on topics pertaining to PC knowledge level of BSN nursing student. There were four categories of focus in the literature review: 1) BSN student knowledge on PC 2) PC within the BSN curriculum, 3) instruments to measure PC knowledge, and 4) Patricia Benner's middle range theory of novice to expert.

Student Knowledge

Nurses' lack of knowledge with death and dying and the incorporation of PC practices for terminally ill patients is an area of concern for nurse educators (Ferrell et al., 2010). Despite the AACN's *Essentials of Baccalaureate Education* (2008) placing emphasis on knowledge acquisition of the care of a dying patient as a generalist practitioner, PC information accounts for only 2% of content found in textbooks (Malloy et al., 2006). In addition to a lack of information, students verbalized fear and feelings of guilt when caring for a dying patient (Liu et al., 2011). Feelings of fear and guilt can be due to comfort level in caring for a dying individual, or the values and beliefs of the student (Liu et al., 2011). A combination of a lack of educational materials and the emotional aspect of caring for a terminally ill patient poses a challenge for nurse educators.

Nurse educators have begun to explore palliative care knowledge of nursing students as a first step in identifying areas within nursing curricula to strengthen. Karkada, Nayak, and Malathi (2011) assessed PC knowledge and attitudes of 83 Indian diploma nursing students. The aim of Karkada and colleagues' study was to pinpoint the

needs of the students in the coursework in regards to palliative care, and to identify strategies for incorporating PC practices throughout the curriculum. Karkada et al. administered a structured twenty question multiple choice questionnaire to ascertain the level of knowledge held by the students about PC. Karkada and colleagues found that 79.5% of students had poor knowledge on PC practices. Despite this low finding, Karkada and colleagues reported that 92.8% of the students expressed favorable attitudes towards PC. Karkada et al. recommended initiating more information on symptom management, patient-centered communication, ethical issues surrounding PC, and team building strategies into the nursing curriculum to enhance the effectiveness of the student's PC knowledge.

Kuebler (2012) conducted a similar project where she compared senior BSN students' self-perceived knowledge with actual PC knowledge at a southeastern U.S. university ($n = 36$) and a northeastern U.S. university ($n = 54$). Kuebler's goal was to identify the learning needs of students in relation to PC. Kuebler administered a 4-point Likert scale to determine students' self-perceptions of knowledge, and then a 45 question multiple-choice quiz, the chronic disease objective knowledge examination, to assess students' knowledge of pathophysiology and symptom management. Similar to Karkada's et al. (2011) study, Kuebler found that both cohorts scored low on the 45 question quiz, with a mean score less than 50%. Kuebler also reported a weak correlation between perceived and actual PC knowledge in both groups. Kuebler concluded that a lack of PC material in the BSN curriculum may have been a contributing factor along with student "differences in geographical locations, clinical experiences, curriculum content, individual personality, and personal expectations" (p. 90).

Sadhu, Salins, and Kamath (2010) assessed PC knowledge among BSN students, undergraduate medical students, and allied health science students in India ($n = 326$). Sadhu et al. (2010) used a nonrandomized sample and administered an internally valid 39 point questionnaire. The questionnaire consisted of ten subscales. Sadhu and colleagues reported that students scored in the range of 50-70%. Similar to Karkada et al. (2011) and Kuebler (2012), Sadhu et al. (2010) found that there was a lack of education on end-of-life care in the sample, and recommended curricular revision in the form of establishing a holistic approach to end-of-life care and educating on communication, pain management, and spirituality.

Brajtman, Fothergill-Bourbonnais, Casey, Alain, and Fiset (2007) studied the attitudes, knowledge, and skills of graduating BSN students ($n = 58$) in relation to PC. Brajtman et al. (2007) utilized a demographic questionnaire, the palliative care quiz for nursing (PCQN), and Frommelt attitudes toward care for the dying scale (FATCOD). The students scored 61% on the PCQN, and 86% on the FATCOD (Brajtman et al., 2007). While knowledge level was low, attitudes were positive towards PC. Brajtman et al. recommended the use of web-based tools to create an interactive environment, increased exposure to PC in the clinical arena, and beginning PC education during the first year of school to increase PC knowledge.

Assessing changes in PC knowledge was an area that Arber (2001) explored among third year nursing students ($n = 45$) at Kingston University in the United Kingdom. Arber assessed the growth in knowledge after a module was given over a 5 month period with a pretest and posttest. The module consisted of 50 hours of lecture, which emphasized physical and psychosocial aspects that affected quality of life and

proper communication with family and patients, and then one week of hospice experience (Arber, 2001). The palliative care quiz for nursing (PCQN) was utilized for the pretest and posttest. Arber reported significant improvement in two of the three categories assessed (philosophy of palliative care and pain and symptom management). The category of psychosocial and spiritual care had a 70% pass rate on the pretest, which Arber attributed to exposure to the topics in other nursing courses. Arber found that confidence level of students improved after completing the module, and concluded that a required PC module within the curriculum would be beneficial for the students.

In summary, nursing student knowledge level was reported to be low (Brajtman et al., 2007; Karkada et al., 2011; Kuebler, 2012; Sadhu et al., 2010) despite positive student attitudes toward PC practices (Brajtman et al., 2007; Karkada et al., 2011). Only one researcher, Arber (2001) assessed the PC knowledge longitudinally, reporting significant improvement in PC philosophy and pain and symptom management. With the advanced disease processes of the aging population, PC is, and will continue to be, an integral part of nursing practice. PC is considered an important interdisciplinary measure to provide holistic care to the patient (Brajtman et al., 2009).

Nursing Curriculum

Within the traditional nursing curriculum, end-of-life care and PC are implemented in most courses, but rarely is there time or room for extensive coverage of this material (Brajtman et al., 2009). The AACN (2008) authored the *Essentials of Baccalaureate Education*, a guiding curricular framework for nursing faculty. An important aspect for the *Essentials of Baccalaureate Education* is the mandate to prepare nursing students to have the ability to provide holistic patient and family-centered care

during the vulnerable time of death. Among the other essentials, the AACN (2008) stressed the importance of preparing students to use therapeutic communication skills, and to provide spiritual care when necessary, which are both integral components to PC. However, nurse educators may not have the knowledge to provide PC education to students (Brajtman et al., 2009). Malloy et al. (2006) found that in addition to PC education in the baccalaureate nursing curriculum, further PC education is needed post-graduation for optimal care of the dying.

The AACN and the Robert Wood Johnson Foundation Roundtable (1998) developed a document of educational competencies for nurse educators and curriculum designers to implement within nursing programs called *Peaceful Death*. Based on the mandate of the International Council of Nurses (1997), it is the responsibility of the nursing profession to ensure a peaceful end-of-life for patients and their families (*Peaceful Death*, 1998). A goal of the roundtable conference was to integrate PC into the curriculum with respect to the psychosocial, communicative, spiritual, and physical aspects of PC. A list of precepts was established as a guide for educators to prepare nurses for end-of-life care. The End-of-Life Nurse Educator Consortium uses this document frequently during training sessions on PC and integration of palliative care into educational courses (Ferrell et al., 2005; Malloy et al., 2006).

In order to ensure PC is integrated into the curriculum, the first step is to assess nurse educators' knowledge and attitudes towards PC. Brajtman, Fothergill-Bourbonnais, Fiset, and Alain (2009) assessed PC attitudes, knowledge, and PC curricular needs among Canadian nurse educators ($n = 53$). PC attitudes were assessed by means of the FATCOD scale. Brajtman et al. assessed knowledge by means of the PCQN, and performed a needs

assessment using the Educators' Educational Needs Questionnaire. Similar to Brajtman and colleagues (2007) study on nursing student PC knowledge, the educators had a low level of knowledge (64% pass rate on the PCQN), but expressed an 88% approval rate towards PC as measured by the FATCOD. Brajtman et al. (2009) reported that on the needs assessment evaluation, 23% of the nurse educators felt they were very prepared to teach PC, whereas 43% felt ill-prepared. Brajtman et al. (2009) identified several barriers including lack of class time, room in the course material, and formal planning of PC into the curriculum, resulting in little PC content integrated into the coursework.

As part of the End-of-Life Nursing Education Consortium (ELNEC), Ferrell et al. (2005) evaluated PC knowledge among nurse educators ($n = 502$) and students (estimated $n = 19,000$) across the United States after utilization of PC modules in undergraduate associates and bachelors nursing programs ($n = 26$). Ferrell and colleagues (2005) administered pretests and posttests to students who participated by completing four modules. The PC modules were taught by nursing school faculty across the United States. With the institution of these modules among schools, faculty noted the effectiveness of the four modules in increasing PC knowledge among their students. The ELNEC works to promote PC education not only among students and faculty, but registered nurses across the country. With the institution of training sessions and modules, increased levels of PC knowledge have been noted among the participants in the seminars and educational experiences offered by ELNEC (Ferrell et al., 2005).

Researchers have found that nursing faculty have a similar level of basic PC knowledge as the students they are teaching (Brajtman et al., 2009). In order to educate students, it is important for faculty to possess PC knowledge and to seek out resources to

assist with the successful implementation of PC material within the curriculum. As Ferrell and colleagues (2005) reported, instituting PC modules was effective in helping to improve students' PC knowledge, as well as encouragement and accountability from faculty.

Palliative Care Knowledge Instruments

The instrument that was used to assess BSN student PC knowledge in this study was the PCQN developed by Ross, McDonald, and McGuinness (1996). The PCQN assesses PC knowledge among nurses in an objective manner. Another instrument that can be used for assessing knowledge is the palliative care knowledge test (PCKT) developed by Nakazawa and colleagues (2009), which is similar in structure to the PCQN.

Ross, McDonald, and McGuiness (1996) developed the palliative care quiz for nursing (PCQN) which has been used in multiple studies since its development (Arber, 2001; Brazil et al., 2012; Knapp et al., 2009). Ross and colleagues (1996) utilized the Canadian Palliative Care Curriculum as a conceptual framework to guide the development of the tool. The preliminary version of the quiz consisted of 60 true/false/don't know questions. A committee of PC coordinators reviewed the questions for accuracy, relevance, and clarity. Ross et al. retained 20 questions for the final version of the PCQN (1996).

Ross and colleagues administered the PCQN in Ontario, Canada, to a sample of 200 students and 196 nurses. Within the total sample, participants scored a mean of 61% on the final PCQN (Ross et al., 1996). During the initial psychometric evaluation, Ross and colleagues assessed internal consistency reliability using Cronbach's alpha. An

acceptable level of internal consistency for the PCQN was reported ($\alpha = 0.78$) (Ross et al., 1996). Ross et al. also performed a test-retest reliability assessment by testing the participants a second time three weeks after the first administration of the quiz, reporting a moderate correlation coefficient of 0.56.

With the development of the PCQN, Ross and colleagues (1996) wanted to identify misconceptions of PC nursing and stimulate conversation among those participating in the quiz, which was accomplished. However, limitations of this study were identified as not being comprehensive or including higher level questioning about PC knowledge. Nonetheless, the basic level of knowledge the PCQN is testing is reliable and valid, as will be shown in the following reviews of studies done using this instrument.

Knapp et al. (2009) performed a study to determine the level of PC knowledge among pediatric nurses in Florida. The PCQN was utilized to determine PC knowledge. The sample consisted of 61% of the nurses who worked at the 21 Title V nursing offices in Florida (Knapp et al., 2009). Knapp and colleagues reported that PCQN scores ranged from 14%-87%, with a mean score of 55%. Upon further assessment of the results, Knapp et al. concluded that 14 of the questions were too difficult, citing that pediatric nurses may lack general knowledge in PC. Knapp and colleagues proposed that a tool to measure pediatric PC knowledge specifically would be beneficial for the field to adequately assess this population's knowledge. Overall, the results of this study were similar to the initial PCQN study (Ross et al., 1996) in that the mean scores are similar among various populations of nurses.

In a similar study performed by Brazil, Brink, Kaasalainen, Kelly, and McAiney (2012) in Ontario, Canada, an assessment of PC knowledge among 69 nurses employed at four different long term care homes was conducted using the PCQN. Brazil et al. reported that the nurses scored between 52.5%-63.41% on the PCQN, indicating a low level of PC knowledge (Brazil et al., 2012). Brazil and colleagues further assessed the items by placing the items in rank order of correct responses to determine common misconceptions among the sample. Brazil et al. found that among the four long term care homes similar misconceptions were held, including feeling that PC is not an aggressive treatment (Ross et al., 1996). Similar to Knapp and colleagues' study (2009), Brazil et al. (2012) felt that a limitation occurred because the PCQN is not specific to long term care.

The PCQN was designed to determine basic palliative care knowledge among nurses (Ross et al., 1996) that can also be used to assess the PC knowledge of nursing students. A limitation of the PCQN noted by Knapp et al. (2009) and Brazil et al. (2012) is the instrument is not specific to specialties in nursing (e.g. pediatric or long term care). However, the PCQN has an acceptable level of internal consistency reliability, which was reported by Ross et al. and was not replicated in other studies, (Brazil et al., 2012; Knapp et al., 2009; Ross et al, 1996) and is a valid instrument for assessing palliative care knowledge.

Another instrument that has been developed along the same vein as the PCQN is the PCKT which was created by Nakazawa et al. (2009) in Japan. This PCKT was created to expand on information lacking within the PCQN including psychiatric disorders, evaluating physician knowledge, and using medications that are used in Japan for pain management (Nakazawa et al., 2009). Nakazawa et al. administered the

questionnaire to registered nurses ($n = 797$). The preliminary version of the PCKT had 40 items, which was reduced to 20 items with correct/incorrect/unsure options in this version. Nakazawa and colleagues administered a retest two weeks after the first administration ($n = 147$). The Cronbach's alpha (0.81) indicated an acceptable level of internal consistency, as did the test-retest reliability which indicated an acceptable correlation coefficient of 0.81 (Nakazawa et al., 2009).

The PCKT was used by Prem et al. (2012) to assess nurses' knowledge ($n = 363$) about PC in India. Prem and colleagues used this instrument to compare differences in knowledge between genders and among work settings (e.g. intensive care units, outpatient units, medical surgical floors, and other). Prem et al. found no statistical significance among these different groups in regards to PC knowledge. Correct responses ranged from 13-50%, which is similar to what other researchers have reported on PC knowledge (Brazil et al., 2012; Knapp et al., 2009; Nakazawa et al., 2009; Ross et al., 1996).

The PCKT has not been used as frequently among researchers as the PCQN (Prem et al., 2012). This is most likely due to the recent development of the instrument. However, it has been demonstrated to be valid and reliable for use, and can be an additional tool to assess PC knowledge among nurses and other healthcare professionals.

Benner's Novice to Expert Theory

Benner (1982) is a nursing scholar who emphasizes intuition in nursing practice to achieve expert status. The theory of novice to expert, which was first published in 1982, is a high middle range nursing theory which describes five stages of skills that comprise nursing practice (McEwen & Wills, 2011). According to McEwen and Wills

(2011), a middle range theory is defined as one that is limited in concepts, may describe a particular phenomenon, and enables one to create testable hypotheses. Some nursing scholars may consider a high middle theory similar to grand theories due to the abstractness of it; however high middle range theories do not meet the complete criteria of a grand theory (McEwen & Wills, 2011).

Benner proposed in *From Novice to Expert* (1982) that the Dreyfus Model of Skill Acquisition (1980), developed by two brothers in California in the early 1980s, can be used to stage the development of a nurse. Benner (1982) conducted her research through interviews with 21 pairs of nurses. Benner paired an expert nurse and a beginner nurse. Narratives were collected on reactions to situations among the varied experiences of the nurses, as well as thoughts on optimal and challenging learning environments (Benner, 1982). Through synthesis of the interviews, Benner was able to apply the data to the Dreyfus Model of Skill Acquisition, making it nurse centered.

The first stage of a nurse is a novice, which is a nurse (or student nurse) who has no experience of nursing context. Benner (1982) states that a novice uses textbook information and rules to provide care to patients. Benner identified several other stages including the advanced beginner, the competent nurse, the proficient nurse, and finally, the expert nurse (Benner, 1982).

The advanced beginner is a nurse who has some experience (Benner, 1982). However, the nurse relies on mentors for guidance and focuses on the global aspects of a situation. Benner asserted that an advanced beginner has not developed intuition, or insight, into how to react to nursing situations. A competent nurse is one who has been in a constant area of nursing and has developed skills and goals that create a feeling of

efficiency and mastery (Benner, 1982). The fourth stage is one of proficiency where the

nurse uses perception to respond to nursing situations and uses a holistic approach to care

(Benner, 1982). An expert nurse is one who does not rely on rules and can act

appropriately in situations due to the integration of intuition into practice (Benner, 1982).

For the purposes of this study, as BSN students were the population assessed, the stages

of novice and advanced beginner were the focus.

Benner's theory has had its supporters and naysayers, similar to any other theory

(Darbyshire, 1994). Darbyshire (1994) wrote a response to a negative critique of Benner

written by English (1993). English's critique of Benner's work centered around two

issues: lack of objectivity due to the qualitative nature of the initial study, and lack of

validity and generalizability due to small sample size of nurse interviews ($n = 21$ pairs of

nurses) (Benner, 1982; Darbyshire, 1994). Darbyshire (1994) argued that the innovation

of Benner's work and the applicability to the field in the way of clinical ladders, nurse

education, and research overshadows the negative commentator. With expected growth of

clinical judgment, critical thinking, and intuition over a nurse's career, Benner (1982) and

Darbyshire (1994) purported that experience does create experts at the bedside and in

research.

Similar to Darbyshire (1994), Altmann (2007) stated that Benner's work is

actually a philosophy, rather than theory, due to the principles of thought and application

to nursing practice behind the model. Altmann stated that Benner illustrated the

complexity of nursing practice going beyond textbook application to development of skill

mastery, and variety of experiences to enhance a nurse's practice (Altmann, 2007).

Experience, personal knowledge, and the addition of interpretation, reflection, and

intuition into practice, help to sculpt an expert nurse from a novice (Altmann, 2007; Benner, 1982). Due to the subjectivity of the theory, the inability to measure intuition, and lack of research testing the theory, Altmann (2007) concluded that novice to expert is a philosophy. The purpose of a nursing philosophy is to shape and define practice which is what Altmann argued Benner's model offers to the field as investigation of nursing proficiency is conducted (Altmann, 2007).

Though there are varying views on Benner's novice to expert theory (Altmann, 2007; Darbyshire, 1994) all verify the insightful, influential ideas Benner brings forth to nursing practice. Whether the model is a theory or a philosophy, it can be applied into nursing curriculum and practice easily and readily (Altmann, 2007; Darbyshire, 1994). Though a BSN student will not become an expert in a four year program, nurse educators can appreciate observing students form knowledge, and progress in the clinical practice.

In conclusion, PC knowledge among nursing students and faculty is limited (Arber, 2001; Brajtman et al., 2007; Brajtman et al., 2009; Karkada et al., 2011; Kuebler, 2012; Ross et al., 1996; Sadhu et al., 2010). With the integration of PC material into the curriculum and reliance on AACN and ELNEC guidelines, faculty have the opportunity to provide a better outcome for students' success as caregivers to terminally ill patients and their families (Ferrell et al., 2005; *Peaceful Death*, 1998). With the use of the PCQN as an instrument to assess PC knowledge, Benner's novice to expert theory can be a guide to determine if a bachelor's prepared nurse is adequately prepared for care of terminally ill or dying patients and their families.

CHAPTER 3: METHODS

This chapter will discuss the research design, setting, participants, instruments, data collection procedures, and data analysis used for this study.

Research Design

This study used a non-experimental quantitative, cross-sectional, survey design that focused on BSN students at a southeastern U.S. university and their knowledge of PC. A non-experimental, cross-sectional survey design was appropriate for this study because there was no experimentation conducted, and the participants completed the Palliative Care Quiz for Nursing (PCQN) created by Ross, McDonald, and McGuinness (1996) at one time point.

Setting

The setting for this study was a school of nursing in the southeastern U.S. Recruitment for the study took place at the school of nursing. The researcher attended a first semester nursing class and a senior semester nursing class during the first few weeks of the fall 2013 semester to discuss the purpose of the study and answer any participant questions. The students then accessed a link via their school email to the Survey Monkey website to participate in the study.

Participants

The population for this study was junior level and senior level BSN students at one school of nursing in the southeastern U.S. Both sample groups, the junior level and senior level BSN students, range in age from 19 to 58 years old (C. Murch, personal

communication, July 29, 2013). The school had a total of 336 females and 58 males

enrolled as of fall 2012 (C. Murch, personal communication, July 29, 2013). There was a

large population of international students at the university being studied, and international

students were involved in the study as well. There were students representing Caucasian,

Hispanic, African-American, Asian, American Indian, and non-specified multi-racial

ethnicities (C. Murch, personal communication, July 29, 2013).

A convenience sample was taken from the two respective nursing classes. Due to

the time limitations set by the university, the researcher was restricted to one sampling of

nursing students that attended the same school of nursing as the researcher. An a priori

analysis to determine sample size was computed by means of G*Power version 3.0.5

(Faul, Erdfelder, Lang, & Buchner, 2007) using an alpha 0.05 significance level, a

moderate effect size (d=0.30) and an estimated power of 80% (Cohen, 1988). Based on

the analysis, a minimum sample size of 64 participants was needed. This sample was

chosen to determine the difference in palliative care knowledge among novice nursing

students and experienced nursing students. General palliative care knowledge among

nursing students was explored as well as any differences in palliative care knowledge

between junior level and senior level BSN students. Results from the study demonstrated

if the students were receiving an adequate amount of palliative care information within

the curriculum. There was a need to determine if the amount of palliative care education

in the curriculum meets the AACN's *Essentials of Baccalaureate Education* (2008)

criteria to provide adequate care to this patient population as a newly licensed registered

nurse.

The following inclusion criteria were used for this study: participants had to be over the age of 18 and had to be a current student in the university's school of nursing to participate in the study.

Protection of Participants

Institutional review board (IRB) approval was obtained from the university prior to data collection. Prior to accessing the research instrument via Survey Monkey, participants were given a consent form (Appendix A) to read, which contained information about the study purpose and participants rights and responsibilities. The research consent form explained that student data would not be sold for profit, and that their privacy was protected. Participants acknowledged their agreement to participate in the study by clicking on a textbox on the Survey Monkey website. Once the participant clicked on the agreement tab, they were able to access the research instrument. No IP addresses were collected as part of the study. The information obtained from the Survey Monkey site was stored in a password protected file on the researcher's computer, and only the researcher and the researcher's chair members had access to the data. All data will be kept for a minimum of three years in the protected file and then be deleted from the hard drive.

Instruments

A demographic information form (Appendix B) was administered in addition to the PCQN via Survey Monkey. Demographic data included the student's age, gender, race/ethnicity, current level in school (junior or senior), personal or professional experience with PC, and for the senior students, if they were enrolled in the PC elective course was collected in order to describe the sample.

The PCQN, created by Ross et al. (1996), at the University of Ottawa, Canada, was used as the tool to assess the PC knowledge level among the two groups of students (Appendix D). Permission to use the PCQN was obtained prior to data collection from one of the authors, Margaret M. Ross, via email (Appendix C). The PCQN was designed to assess basic PC knowledge among nurses. The PCQN was appropriate for use on nursing students as the original authors sampled nursing students to determine reliability and difficulty of the PCQN.

The authors of the PCQN sampled nursing students (n=200) and registered nurses (n=196) to establish baseline reliability and validity. The authors reported a 61% pass rate from the sample (Ross et al., 1996). The KR-20 was 0.78 noting high internal consistency for the quiz (Ross et al., 1996). Test-retest reliability was conducted with a three week lag period between taking the quiz. Ross et al. reported a correlation coefficient of 0.56. Results were similar on the second attempt as compared to the initial test. The validity of the tool was verified by Ross et al. (1996) by the large sample size of nursing students (n=200) and registered nurses (n=196). The researchers noted that the students scored 50% or higher on 8 out of 20 questions, whereas the RNs scored higher than 50% on 18 out of 20 (Knapp et al., 2009).

The PCQN is a twenty question quiz with the choices of true, false, and don't know. Ross et al. (1996) scored the quiz by giving each participant one point for a right answer and zero points for wrong or don't know responses for a maximum score of 20. The authors scored the test using total mean percentages among the various samples (Ross et al., 1996). This study's researcher used the total raw score of each group and compared the PC knowledge level between the junior level and senior level students. The

total score of both groups was expressed as a percentage and was used to describe the general PC knowledge level of the BSN students.

Data Collection Procedures

The researcher attended a junior level and a senior level BSN course at the start of the fall 2013 semester and described the study to the students. Once the students were introduced to the study, emails (Appendix E) were sent to their student email accounts by the course faculty with a link to the Survey Monkey site. There was also a link posted to the university's online classroom database where students with access to the study's targeted classes had access to the link. On the Survey Monkey site, participants viewed and clicked on the agreement to participate in the study, which served as the student's consent. After the agreement link was clicked, the student was directed to complete the demographic form and PCQN. Repeat emails were sent one week after the initial email in order to encourage participation. Data collection continued until the minimal sample size of 64 participants was obtained.

Threats to Validity

A threat to validity for this study was the lack of a random sample. The sample was a convenience sample of students from the same university. An attempt to minimize this threat was to recruit a larger sample size than necessary to increase the reliability of the data. The PCQN had been deemed reliable and valid which decreased threats to validity regarding the accuracy of the tool. Past PC knowledge was a potential threat, though small, to validity which could have skewed the quiz scores positively of those students who have personal or professional experience with PC. The likelihood of a large portion of the sample having past professional PC experience was low, making this a

minimal threat to validity. The PCQN tests nursing knowledge, not layman's knowledge on PC, which made personal PC experience non-threatening as well.

Data Analysis

Mean percentage and total raw scores from the PCQN were utilized to answer the research questions: "What is the PC knowledge level of junior and senior level BSN nursing students?" and "Is there a difference in PC knowledge level between junior and senior level nursing students?" The total score of all participants was expressed as a mean percentage and was used to answer the first research question to determine the PC knowledge level of the students. The raw scores, which was out of a possible 20 points, from each class of nursing students were used to answer the second research question, comparing the PC knowledge level between junior and senior level nursing students. The researcher analyzed the mean, median, and range of participants' scores both as a whole group and separately (junior level students versus senior level students). Finally, a Cronbach's alpha was calculated on the PCQN to assess for internal consistency reliability.

In order to address the research hypothesis of senior level BSN nursing students obtaining higher scores on the PCQN than junior level BSN nursing students, an independent *t* test was performed using SPSS to assess for differences in PC knowledge scores between the two groups of students.

CHAPTER 4: RESULTS

This chapter discusses the data collected and the result from the statistical analysis of the study data. The sample characteristics will be described using descriptive statistics. The following research questions were answered using the data analysis plan: 1) What is the PC knowledge level of junior and senior level BSN students? and 2) Is there a difference in PC knowledge level between junior and senior level nursing students? The following research hypothesis was tested: Senior level BSN nursing students will score higher on PC knowledge as measured by the Palliative Care Quiz for Nursing (PCQN) than junior level BSN nursing students. However, this difference in PC knowledge between these two groups of students will not be sufficient enough to care for PC patients.

Data Analysis

The purpose of this study was to assess and compare PC knowledge between junior level (first semester) nursing students and senior level (final semester) nursing students, and to determine if there was enough PC information within the BSN curriculum at a southeastern U.S. university. Data were analyzed using SPSS version 18 with the level of significance set at 0.05. To assure the data met assumptions for parametric testing, test of normality of distribution were explored. A pre-analysis screening was done to ensure that the instruments were complete. There were a total of 76 participants. However, a total of 4 participants consented to the study, but did not complete the survey or demographic questionnaire. Therefore, 72 surveys were

evaluated, which met minimal sample size needed for parametric testing ($n=64$) based on power analysis. A total of 43 junior level students (59.7%) and 29 senior level students (40.3%) participated in the study.

Descriptive statistics were used to assess the sample characteristics of the students. This included mean, median, and range of the participants' ages and frequencies for gender and ethnicity. Descriptive and inferential statistics were used to assess the data collected in the Palliative Care Quiz for Nursing. Mean and standard deviation was assessed for each group of students (junior and senior) as well as collectively. An independent *t* test was conducted to explore differences in mean scores between junior level and senior level nursing students. PCQN internal consistency reliability was assessed by means of a Cronbach's alpha coefficient.

Sample Characteristics

Age. The sample ranged in age from 19-58 years. The mean age was 28.39 (*SD* = 9.296). However, for the purpose of this study, the median was evaluated due to the negative skew of the sample's ages. The median age was 24 years. There were 11 students who listed their age as 20 (15.3%), which was the most frequent age. Other frequent ages were 22 ($n = 10$, 13.9%), 21 ($n = 7$, 9.7%), and 35 ($n = 5$, 6.9%).

Gender. Females ($n=63$) comprised a majority of the sample (87.5%). Nine males (12.5%) participated in the study. The university used for this study has a higher population of females within the BSN program than males, which is consistent with the higher proportion of females in this sample as compared to males.

Ethnicity. The majority of the participants identified their ethnicity as White (*n=60,* 83.3%), followed by African American *n=6* (8.3%), Asian *n=2* (2.8%), American Indian *n=3* (4.2%), and Other *n=1* (1.4%).

Prior Palliative Care Experience. When asked if there was prior palliative care experience, whether it be personal or professional, the majority of the sample stated "no" (*n=52,* 72.2%). For individuals indicating that they did have palliative care experience (*n=20,* 27.8%), there was no differentiation between personal or professional experience. Only one student (1.4%) indicated that he/she had taken the palliative care elective course that is offered at the university.

Instrument Reliability

Internal consistency reliability was assessed for the Palliative Care Quiz for Nursing (PCQN). The Cronbach's alpha coefficient was 0.413 indicating a low level of internal consistency reliability for the instrument. Removal of any instrument item resulted in an insignificant change to the Cronbach's alpha coefficient, thus all items were retained in the analysis. The authors of the PCQN had an alpha of 0.78 during the original testing (Ross et al., 1996). This finding will be addressed more in depth in the discussion section (See Chapter 5).

Descriptive Statistics for PCQN and Research Question 1

The first research question asked in this study was regarding the overall knowledge level of BSN students at a southeastern U.S. university. The range of scores for the total sample of this study on the PCQN was 7 to 17 out of a possible 20 points. The students scored, as a whole, 61% on the PCQN. Overall, the sample mean score was 12.19 (*SD=*2.582). The most frequent score was a 13 out of 20 points (*n=13,* 18.1%).

Other frequent scores were 11(n=10, 13.9%) and 14 (n=11, 15.3%). The junior level BSN students had a mean score of 11.7 (SD= 2.833), while the senior level BSN students had a mean score of 12.93 (SD= 1.981). These scores signify that students are scoring below average on this quiz, indicating a low level of PC knowledge.

The following table is the PCQN broken down per question with the frequency and percentage of students who answered correctly and incorrectly.

Table 1

Palliative Care Quiz for Nursing Frequency and Percentage of Correct and Incorrect Responses

PCQN Questions with Correct Answers	Correct		Incorrect	
T=True *F*=False	*n*	%	*n*	%
1. Palliative care is appropriate only in situations where there is evidence of a downhill trajectory or deterioration. *F*	50	69.4%	22	30.6%
2. Morphine is the standard used to compare the analgesic effect of other opioids. *T*	39	54.2%	33	45.8%
3. The extent of the disease determines the method of pain treatment. *F*	32	44.4%	40	55.6%
4. Adjuvant therapies are important in managing pain. *T*	28	38.9%	44	61.1%
5. It is crucial for family members to remain at the bedside until death occurs. *F*	44	61.1%	28	38.9%
6. During the last days of life, the drowsiness associated with electrolyte imbalance may decrease the need for sedation. *T*	51	70.8%	21	29.2%
7. Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain. *F*	22	30.6%	50	69.4%
8. Individuals who are taking opioids should also follow a bowel regime. *T*	26	36.1%	46	63.9%

9. The provision of palliative care requires emotional detachment. *F*	62	86.1%	10	13.9%
10. During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for the treatment for severe dyspnea. *T*	61	54.7%	11	15.3%
11. Men generally reconcile their grief more quickly than women. *F*	54	75%	18	25%
12. The philosophy of palliative care is compatible with that of aggressive treatment. *T*	64	88.9%	8	11.1%
13. The use of placebos is appropriate in the treatment of some types of pain. *F*	43	59.7%	29	40.3%
14. In high doses, codeine causes more nausea and vomiting than morphine. *T*	46	63.9%	26	36.1%
15. Suffering and physical pain are synonymous. *F*	56	77.8%	16	22.2%
16. Demerol is not an effective analgesic in the control of chronic pain. *T*	63	87.5%	9	12.5%
17. The accumulation of losses renders burnout inevitable for those who seek work in palliative care. *F*	51	70.8%	21	29.2%
18. Manifestations of chronic pain are different from those of acute pain. *T*	16	22.2 %	56	77.8%
19. The loss of a distant or contentious relationship is easier to resolve than the loss of one that is close or intimate. *F*	31	43.1%	41	56.9%
20. The pain threshold is lowered by anxiety or fatigue. *T*	39	54.2%	33	45.8%

Research Question 2 and Hypothesis Testing

An independent t test was conducted to explore PC knowledge differences between junior and senior level BSN nursing students. Parametric tests assume homogeneity of variance. As the hypothesis compared two groups mean scores, homogeneity of variance was assessed by means of a Levene's test. The Levene statistic for the PCQN ($p=0.033$) was significant, indicating unequal variances between the groups. Due to the difference in sample size between the junior level and senior level BSN students, the independent t test was calculated using the "equal variances not assumed" option. On average, senior level BSN students ($M=12.93$, $SD=1.981$, $n=29$) scored higher on the PCQN than junior level BSN students ($M=11.7$, $SD=2.833$, $n=43$). This difference was significant ($t[70]=-2.174$, $p=0.03$).

CHAPTER 5: DISCUSSION

This chapter will focus on data interpretation, study limitations, and implications of the research findings for nursing education. In addition, recommendations for future nursing research studies are addressed.

The first research question posed in this study addressed overall PC knowledge of BSN students. The BSN student participants in this study scored 61% (*M*=12.19, *SD*=2.582) average on the PCQN. A score of 61% was expected by the researcher as it was hypothesized that the PC knowledge held by the BSN students would be low and insufficient for patient care. In a previous study, Ross and her colleagues (1996) found that registered nurses and nursing students scored an average of 61% on the Palliative Care Quiz for Nursing. Separately, however, the nursing students (*n*=200), divided between generic and post RN students, scored a mean score of 46% and 65% respectively (Ross et al., 1996). Other researchers who used the PCQN found similar results in their data analysis (Brajtman et al., 2007; Brazil et al., 2012; Knapp et al., 2009). Brajtman et al. (2007) performed a study examining PC knowledge among Canadian nursing students which resulted in an average score of 61% (M=12.29). Brazil et al. (2012) assessed the PC knowledge among long-term care nurses in three Ontario facilities, reporting in a 45%-75% average score among the three groups. Knapp et al. (2009) found pediatric nurses in Florida scored a mean raw score of 10.9 (54.9%) on the PCQN. Past researchers have reported an inadequate PC knowledge level among nurses and nursing students, similar to the findings in this study.

The second research question posed in this study was: Is there a difference in PC knowledge level between junior and senior level nursing students? Junior level BSN students scored an average of 58.5% (M=11.7, SD=2.833), and the seniors scored 64.65% (M=12.93, SD=1.981). The study hypothesis was that the senior BSN students would have more PC knowledge than the junior BSN students. Although the difference in mean scores on the PCQN was statistically significant between the two student groups (p=0.033), essentially there was only a one-point difference in the score which is not clinically significant.

It was hypothesized that senior level BSN students would have more PC knowledge than junior level BSN students, which was found to be true; however, that amount of PC knowledge possessed by either group of students is not sufficient enough to care for a dying individual. Mean scores on the PCQN among both groups, despite statistical significance, are not considered a passing grade of 75% which is used as a minimal passing benchmark within the BSN program the students are attending. The AACN (2008) guidelines for newly licensed registered nurses to care for dying individuals across the lifespan are not being met by this specific program, as evidenced by the low scores from the senior level participants.

As stated previously, the theoretical framework used for this study was Benner's (1982) novice to expert. An earlier statement was made that senior level BSN students were anticipated to have reached a high novice to early advanced beginner according to Benner's stages. Junior and senior level BSN students demonstrated a knowledge level of a novice according to Benner's stages. The rationale for the assignment of a novice stage is due to a low level of PC knowledge, and minimal differences between the groups of

students on the PCQN scores. Therefore, the hypothesis of this study was not supported, as the students truly have no clinically significant difference in their knowledge level of PC, as evidenced by the one-point difference in average mean scores.

The initial goal for the development of the PCQN created by Ross and colleagues (1996) was to identify basic misconceptions of PC. The questions were structured in a way to convey basic true and false statements about PC. Among BSN students in this study, there were several areas where students demonstrated sufficient PC knowledge and several areas where students demonstrated an insufficient amount of PC knowledge.

Despite a low overall mean score among BSN students in this study, there were several questions that students demonstrated a sufficient level of knowledge (defined as more than 50% of students answering the question correctly). First, 69.4% of the participants were correctly able to identify the appropriateness of palliative care for individuals who have chronic diseases. Based on the number of students who correctly responded to this question, students do appear to understand what PC is and that is it not just necessarily for those patients who are deteriorating quickly. Ross et al. (1996) reported that generic students in the initial study scored 67.3%, which is comparable to this study's participants.

Other areas with high percentages of correct responses related to drug therapy in PC including the decreased need for sedation in those with drowsiness associated with electrolyte imbalances (70.8%), the use of drugs that cause respiratory depression for severe dyspnea (84.7%), and Demerol as an ineffective pain medication in chronic pain (87.5%). Students correctly answered questions that addressed grief, emotions, and burnout including: misconceptions that PC work requires emotional detachment (86.1%),

the idea that men reconcile their grief more quickly than women (75%), and nurse

burnout is inevitable in PC (70.8%). These are promising findings as the study's

participants have a stable baseline for understanding PC in regards to medications,

emotional issues associated with PC, and the philosophy and appropriateness of PC.

The highest percentage of correct responses (88.9%) among BSN students in this

study was in regards to the philosophy of PC being synonymous with aggressive

treatment. This was surprising, as this question was considered one of the harder

statements by Ross et al. (1996) to answer correctly. This finding is significant as the

initial participants in Ross et al.'s study answered 24.5% correctly. Similarly, Knapp et

al. (2009) found that long-term care nurses scored 14% on this question, which was their

lowest scoring question. BSN students in this study were able to readily identify PC as an

aggressive treatment.

The highest number of incorrect responses among the participants was in regards

to pain, and the different manifestations between chronic and acute pain (77.8%). Ross et

al. (1996) found that 65.3% of students answered this question correctly. This was also

surprising, as the statement is not specific to PC, but is a general statement regarding

pain. It is interesting that the students were unaware of the different manifestations of

pain. This could be an indication that students are not receiving critical information on

the basic principle of pain.

Other commonly missed concepts included the misconception that long term

narcotic use would lead to addiction (69.4%). The participants were incorrect in the

statement that patients on opioids should be on a bowel regime, with 63.9% identifying

the statement as false. More than half of the study participants (61.1%) incorrectly

identified that adjuvant therapies were not important to pain management. This may be due to the students being unaware of the term or definition of adjuvant.

Though the students showed a low level of PC knowledge through the use of the PCQN, there were areas of successful knowledge gain, such as the use and aggressive nature of PC and the medications utilized in PC. However, there were also several areas identified in the study that may need to be highlighted in a BSN curriculum such as the use of opioids and its side effects, as well as adjuvant therapies and different types of pain. It is recommended to the university to take the data presented in this study and attempt to include more PC content within the courses in the program to help increase PC knowledge and understanding.

Limitations

There are several limitations to this study including the use of a convenience sample, differences in numbers of junior and senior level BSN student participants, participants' past PC experiences, and low internal consistency reliability scores for the PCQN, as identified by Cronbach's alpha coefficient of 0.413.

The use of a convenience sample is a limitation to this study in regards to the amount of data collected and ability to generalize the study findings. Due to time constraints and inability to access other nursing students in the region, a convenience sample was taken from one southeastern U.S. university. Convenience sampling was the most appropriate type of sampling for this study due to the study timing and feasibility of data collection methods.

There was a greater number of junior level BSN students (n=43) who participated in the study as compared to senior level BSN students (n=29). Number differences may

have been due to the inability of the researcher to access half of the senior class by face to face measures prior to data collection. The senior course that was recruited for this study was divided between an on campus class and an online class. The access to the online portion of the class was limited to email and course website announcements. This may have hindered the ability to recruit more senior level students.

Past personal or professional experience with PC was of concern in the beginning stages of this study, as it was thought that this past knowledge may increase PCQN scores. However, this did not seem to be the case. There were 20 students who identified past experience with PC, and one student who had taken the PC elective course. The sample with past experience had similar PCQN scores to those students (n=52) without any past experience. The student who had taken the PC elective course scored a 13 on the PCQN which is not a significant improvement from the other seniors' scores (M=12.93). This is an interesting finding, as it would be assumed that a student in a course specifically discussing PC content would have a much better score on the quiz. This lack of improvement in this student's scores may be due to being currently in the class at the time of data collection. The survey was conducted at the beginning of the semester.

The low internal consistency reliability score for the PCQN in this study was a concern. Ross et al. (1996) conducted a Kuder Richardson formula 20 (KR-20) to determine internal reliability of the PCQN which was 0.78. For this study, a Cronbach's alpha coefficient was calculated using SPSS version 18 (α=0.413). Unfortunately, this is an indicator that the PCQN was not found to be reliable in this study. Further investigation was done to determine if past studies utilizing the PCQN performed internal consistency reliability tests. It was found that past researchers had not reported an

independent internal consistency reliability test and referred to Ross et al. (1996) KR-20 result to demonstrate reliability of the PCQN (Brajtman et al., 2007; Brajtman et al., 2009; Brazil et al, 2012; Knapp et al., 2009). The researcher of this study attempted to contact Ross and colleagues, as well as other researchers who had used the PCQN in similar studies including: Ann Arber, Kevin Brazil, and Caprice Knapp. Of the researchers who utilized the PCQN for independent studies, those who responded stated they did not calculate a Cronbach's alpha coefficient or anything similar to determine reliability (S. Brajtman, personal communication, October 8, 2013; F. Fothergill-Bourbonnais, personal communication, October 8, 2013; & C. Knapp, personal communication, October 22, 2013). Frances Fothergill-Bourbonnais, a colleague of Ross', responded via email and stated that this lack of reliability could be contributed to the passing of time from the initial construction of the PCQN in 1996 to the data collection of this study in 2013 (October 8, 2013). The questions presented in the PCQN seem timeless to the researcher, however, so it is uncertain if the terminology or the age of the PCQN or both are the cause for the lack of reliability for the PCQN. The PCQN would need to be revised using a larger sample size to enhance the internal consistency reliability.

Implications

Low levels of PC knowledge were found among BSN students in this study. Despite the concerns with the reliability of the PCQN, several key areas missed consistently by the students could be strengthened in the nursing curriculum. Pain medication management, emotional issues and grief, and nurse burnout were key concepts that the students did well answering on the PCQN. The points that need to be

addressed for reinforcement were narcotic abuse, bowel regimes for patients on opioids, and adjuvant therapies for pain management.

Recommendations to incorporate these key points into the BSN curriculum at the university of the study would be to add more in depth content on pain medications and their effects, especially in regards to end-of-life care. Pain can be addressed in each major clinical course of the curriculum, as the students will be caring for patients directly in these courses and have more hands-on experience with pain management. Pain is an issue that is universal and is a major concern for patients, families, and nurses. It is not just a concept found in PC. As a fundamental concept, it is important that BSN student who are about to become newly licensed registered nurses are able to understand and provide appropriate interventions for pain management.

More focus on pain management is crucial; however, it is also important for the program to add PC content into the curriculum. Adding PC content into each semester of the program might be beneficial so that students are continually being exposed to the materials. This process begins with faculty assessing the current curriculum to identify courses that have already integrated PC materials, and courses that would benefit from the integration of PC materials. It would also be beneficial to determine other courses that can include PC content in creative ways that will encourage learning. Ways to include PC content would be the integration of PC case studies, role playing, and lecture material into courses that have a clinical component so that material can be utilized within the patient care setting.

The clinical setting is another area where PC can be integrated into the curriculum. Clinical settings, such as hospice, nursing homes, or long-term care facilities

where chronic diseases are managed, can be used as placements for the students to receive PC exposure. If students are exposed to dying or chronically ill patients, it can become a life altering situation for students to see the care provided to the patient and family during a most difficult time. This type of learning can be the most effective for a student to comprehend and further utilize the lessons learned during the experience.

Future Studies. Recommendations for future studies focusing on PC and knowledge of BSN students would be to recruit a larger, more diverse sample. The fact that this study was contained to a convenience sample created a study limitation. Recruiting students from several BSN programs, particularly from various regions in the U.S., would help to provide data that could be generalized. A longitudinal study assessing PC knowledge could be conducted by following a group of first semester students throughout the program. Finally further revision and reliability testing of the PCQN is warranted to re-establish reliability of the tool.

Conclusion

The aim of this study was to assess the PC knowledge among BSN students, and to compare the difference between junior and senior level students. The research questions were answered using the PCQN to a satisfactory amount of responses. While there was a statistically significant difference in knowledge between the junior and senior level BSN students, the students had a low level of PC knowledge overall. The difference in mean PC knowledge was not significant enough to meet the AACN guidelines of a baccalaureate prepared nurse to care for PC patients. Recommendations for nursing education include adding more PC and pain management content into the BSN curriculum to help better prepare the students for this patient population.

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APPENDIX A
Consent Form to Participate in a Palliative Care Study
Kennesaw State University

Title: Palliative Care Knowledge among Bachelors of Science Nursing Students

Researcher: Amy Pope, BSN, RN and Nicole Mareno, PhD, RN

Purpose: You are invited to participate in a study regarding palliative care knowledge. The purpose of this study is to assess your knowledge of palliative care. This is important to study because we want to know if there is an adequate amount of palliative care information being taught within the bachelors of science nursing curriculum.

Procedure: Your participation in this study will involve answering a few questions about yourself and taking a 20 question quiz on your palliative care knowledge. You will be able to access the study materials through a link to Survey Monkey sent to your Kennesaw State University email account or by clicking a link that will be posted on your course's D2L site. The forms should take between 15-20 minutes to complete. All data received from the Survey Monkey site will remain anonymous. No IP addresses will be collected by the survey program. The data will be stored for a minimum of 3 years before being permanently deleted from the researcher's hard drive.

Risks: There are no physical risks for taking part in this study. You may experience feelings of sadness if you have experienced a death of a family member or friend who used palliative care services. If you feel negative feelings like sadness, anxiety, or pain you can contact the 24 hour Cobb County Mental Health crisis hotline at (770) 422-0202.

Benefits: There may be no direct benefit to you for taking part in this research. It is possible you may gain a better insight into your own level of palliative care knowledge as well as possibly providing a better understanding of palliative care.

Confidentiality: The results of the research study will be confidential and reported in group form without any identifying information. This means that you will not be identified personally. Information that you provide will be kept confidential by the researcher to the extent allowed by law. The information will only be shared with individuals involved in this study. You are not waiving any of your rights by participating in this study.

Inclusion Criteria for Participation: You must meet the following inclusion criteria to participate in the study: be over the age of 18 and be a current student in the university's school of nursing.

Voluntary Participation and Withdrawal: Participation in this research study is voluntary, and you have the right to refuse or discontinue your participation in the study at any time.

Contact Person: If you have questions or concerns about this study, you may contact: Amy Pope, BSN, RN by phone at (404) 376-1743 or by email at apope11@students.kennesaw.edu. You may also contact Amy's advisor, Dr. Nicole Mareno, at (678) 797-2027 or by email at nmareno@kennesaw.edu if you have any questions or concerns.

PLEASE PRINT A COPY OF THIS CONSENT DOCUMENT FOR YOUR RECORDS, OR IF YOU DO NOT HAVE PRINT CAPABILITIES, YOU MAY CONTACT THE RESEARCHER TO OBTAIN A COPY.

☐ I agree and give my consent to participate in this research project. I understand that participation is voluntary and that I may withdraw my consent at any time without penalty.

☐ I do not agree to participate and will be excluded from the remainder of the questions.

Research at Kennesaw State University that involves human participants is carried out under the oversight of an Institutional Review Board. Questions or problems regarding these activities should be addressed to the Institutional Review Board, Kennesaw State University, 1000 Chastain Road, #0112, Kennesaw, GA 30144-5591, (678) 797-2268.

APPENDIX B
Demographic Information

1. Write in Age:

2. Gender: Male   Female

3. Race/Ethnicity: White   African American   Hispanic   Asian
             American Indian   Other:

4. Level at School:
             Junior (first year nursing student)   Senior (will graduate within the
    year)

5. Do you have any personal or professional experience with palliative care or
    hospice?
             Yes   No

6. For Seniors: Have you taken or are you taking the palliative care elective course
    offered at Kennesaw?
             Yes   No

APPENDIX C
Permission Email for Use of Palliative Care Quiz for Nursing

PCQN

Frances Fothergill-Bourbonnais
<fbourbon@uottawa.ca>

25   Mar

to me

Hi Amy. I am a long time friend and colleague of Dr. Ross who retired from the
School of Nursing here many years ago. You have her permission to use the
PCQN. as long as you cite the source. Good luck in your studies. Frances

Frances Fothergill Bourbonnais, RN PhD
Emeritus Professor
School of Nursing
University of Ottawa
451 Smyth Road
Ottawa, Ont. K1H 8M5
(613) 562-5800 ext 8423

Amy Pope <appope1@gmail.com>   Mar 25

to Frances

Dr. Bourbonnais,

Thank you so much! I appreciate this very much and am excited to start my
research.

Sincerely,
Amy Pope

APPENDIX D
Palliative Care Quiz for Nursing
Created by Margaret M. Ross, Beth McDonald, and Joan McGuinness
<mark>Right Answer</mark>

1. Palliative care is appropriate only in situations where there is evidence of a downhill trajectory or deterioration.
   True   <mark>False</mark>   Don't Know

2. Morphine is the standard used to compare the analgesic effect of other opioids.
   <mark>True</mark>   False   Don't Know

3. The extent of the disease determines the method of pain treatment
   True   <mark>False</mark>   Don't Know

4. Adjuvant therapies are important in managing pain.
   <mark>True</mark>   False   Don't Know

5. It is crucial for family members to remain at the bedside until death occurs.
   True   <mark>False</mark>   Don't Know

6. During the last days of life, the drowsiness associated with electrolyte imbalance may decrease the need for sedation.
   <mark>True</mark>   False   Don't Know

7. Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain.
   True   <mark>False</mark>   Don't Know

8. Individuals who are taking opioids should also follow a bowel regime.
   <mark>True</mark>   False   Don't Know

9. The provision of palliative care requires emotional detachment.
   True   <mark>False</mark>   Don't Know

10. During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for the treatment for severe dyspnea.
    <mark>True</mark>   False   Don't Know

11. Men generally reconcile their grief more quickly than women.
    True   <mark>False</mark>   Don't Know

12. The philosophy of palliative care is compatible with that of aggressive treatment.
   True   False   Don't Know

13. The use of placebos is appropriate in the treatment of some types of pain.
   True   **False**   Don't Know

14. In high doses, codeine causes more nausea and vomiting than morphine.
   True   False   Don't Know

15. Suffering and physical pain are synonymous.
   True   **False**   Don't Know

16. Demerol is not an effective analgesic in the control of chronic pain.
   True   False   Don't Know

17. The accumulation of losses renders burnout inevitable for those who seek work in palliative care.
   True   **False**   Don't Know

18. Manifestations of chronic pain are different from those of acute pain.
   True   False   Don't Know

19. The loss of a distant or contentious relationship is easier to resolve than the loss of one that is close or intimate.
   True   **False**   Don't Know

20. The pain threshold is lowered by anxiety or fatigue.
   True   False   Don't Know

APPENDIX E
Recruitment Email

Dear BSN Student,

My name is Amy Pope, and I am a graduate student working towards my Master's in Nursing Education at Kennesaw State University. As part of the criteria to graduate, I am conducting a study to determine the level of palliative care knowledge among nursing students here at Kennesaw State University.

Palliative care is an area of nursing that is directed towards the care of terminally ill or dying individuals and their families. The main goal of palliative care is to provide comfort and pain management.

I am looking for your help in completing my research. The purpose of this study is to assess your knowledge of palliative care. This is important to study because we want to know if there is an adequate amount of palliative care information being taught within the bachelors of science nursing curriculum at Kennesaw State University. With your participation, I can provide the school with data needed to determine if palliative care education within the curriculum is adequate for newly licensed registered nurses.

Please click the link below to the Survey Monkey site and complete the materials. There will be a consent form, a short demographic form, and a 20 question quiz that is true/false in nature. All information is confidential and anonymous. It should not take longer than 15 minutes to complete the study, and just remember to answer the quiz to the best of your ability.

Survey Monkey Link: _____.

I truly appreciate your participation in my study. If you have questions or concerns about the study or my research, please email me at apope11@students.kennesaw.edu. You may also contact my chair: Dr. Nicole Mareno at (678) 797-2027 or by email at nmareno@kennesaw.edu. Good luck with your future endeavors as students and nurses!

Thank you,

Amy Pope BSN, RN, PCCN