INTEGRATION OF END OF LIFE CONCEPTS INTO THE CURRICULUM OF AN ASSOCIATE OF SCIENCE IN NURSING PROGRAM

by

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ABSTRACT

End of life (EOL) education is missing or deficient among nursing curricula across the United States. Nursing educators have debated over the most effective teaching modality to implement EOL concepts among nursing curricula with little consensus. Since 2000, the End-of-Life Nursing Education Consortium (ELNEC) project has striven to improve EOL education and promote an effective means of integrating EOL concepts into nursing education. In 2017, the ELNEC project released the first undergraduate nursing curriculum focused on primary palliative care, which includes EOL care, called ELNEC-Undergraduate.

The purpose of the study was to determine if implementing the ELNEC-Undergraduate online learning modules improved student knowledge with respect to EOL care concepts. This study took place in an Associate of Science in Nursing program with forty-nine students participating in the study during their final nursing semester before graduation. This study implemented a quantitative methodology utilizing a pretest/posttest design to measure student knowledge of EOL concepts prior to and after the implementation of the ELNEC-Undergraduate curriculum. The Undergraduate Nursing Palliative Care Knowledge Survey was employed as an evaluative instrument to measure knowledge of EOL care. Paired sample *t*-tests were conducted to compare pretest and posttest scores of the cohort as well as within the studies constructs. Simple, multiple, and hierarchical linear regressions were employed to analyze student demographics as well as pre-existing experiences' effect on student knowledge with respect to EOL care. Demographics and pre-existing experiences did not significantly affect student knowledge with respect to EOL care. However, the study results indicated that there was a

statistically significant increase in student knowledge after the implementation of the ELNEC-Undergraduate curriculum.

DEDICATION

I dedicate this dissertation to my husband and children. To my husband, Bryan, thank you for all your support and unwavering love for me. You truly complete me! To my children, Katie, Brooke, Thomas, and Hayden, you are my whole world. I love you more than words can say. Through this journey, I hope that you have learned to set the bar high and to never give up on your dreams.

LIST OF ABBREVIATIONS

AACN	American Association of Colleges of Nursing
ANA	American Nurses Association
ASN	Associate of Nursing in Science
BSN	Bachelor of Science in Nursing
EOL	End of Life
ELNEC	End-of-Life Nursing Education Consortium
HPNA	Hospice and Palliative Nurses Association
IOM	Institute of Medicine
M	Mean
SD	Standard Deviation
T	Tolerance
NCP	National Consensus Project for Quality Palliative Care
SCT	Social Cognitive Theory
UNPCKS	Undergraduate Nursing Palliative Care Knowledge Survey
VIF	Variance Inflation Factors

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CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

The number of aging Americans is increasing at alarming rates. The Population Reference Bureau (2016) projected by the year 2060 there will be 98 million people over the age of 65 living in the United States (US). This projection is a substantial increase over the current estimate of 46 million Americans over the age of 65. Tedder, Elliott, and Lewis (2017) reported that the aging population has complex healthcare needs and is the largest population to utilize palliative and hospice care. Palliative and end of life (EOL) care are provided to patients and caregivers who are managing chronic and terminal illnesses. The care provided to the terminally ill population is known as EOL care (Grabow, 2017). Basic characteristics of EOL care include "providing emotional support to the dying patients and their support system; physical care to dying patients; and care of the body after death" (Grabow, 2017, p. 39). Pain and symptom management are the primary goals of EOL care (National Cancer Institute, n.d.). Providing such complex care requires education, confidence, cultural sensitivity, and emotional fortitude (Gama, Barbosa, & Vieira, 2012; Lynch, 2012; Minto & Strickland, 2011; Saunders, Bullock, & Broussard, 2012).

The vast majority of nurses are required to provide care to patients as their health declines, ultimately ending in death. With this knowledge, it is imperative that EOL care provided to dying patients and caregivers be included as an essential element of a successful nursing curriculum (D'Antonio, 2017). Research has demonstrated that nursing students do not

receive sufficient education in EOL care (Gillan, Jeong, & van der Riet, 2014; Herber & Johnston, 2012; McIlfatrick, Mawhinney, & Gilmour, 2010).

The End-of-Life Nursing Education Consortium (ELNEC) project began as a means to provide EOL education to healthcare professionals (Ferrell, Malloy, & Virani, 2015). Historically, the ELNEC project has focused on providing primary palliative and EOL care education and was geared to meet the educational needs of advanced practice nurses (Paice et al., 2006). In 2000, ELNEC-Core was the first curriculum implemented for the purpose of providing education to undergraduate nursing faculty (Ferrell et al., 2015). All curriculum developed by the ELNEC project was designed to meet the needs of undergraduate nursing faculty, licensed nurses, and nurses who are practicing in specialty clinical areas (Ferrell, Mazanec, Malloy, & Virani, 2018). In 2017, the ELNEC project released the first curriculum designed to meet the needs of undergraduate nursing students (ELNEC, 2018). This curriculum is called ELNEC-Undergraduate Curriculum.

ELNEC-Undergraduate Curriculum was developed to meet the growing primary palliative and EOL care educational needs of undergraduate nursing students and provide faculty an effective means of implementing primary palliative and EOL concepts into nursing curricula (Ferrell, Malloy, Mazanec, & Virani, 2016). The curriculum utilizes an online interactive learning module format. ELNEC-Undergraduate concepts included in the curriculum are an introduction to primary palliative care; communication; pain and symptom management in palliative care; loss, grief, and bereavement; and care provided to the actively dying patient and caregiver (Ferrell et al., 2016). The American Nurses Association (ANA) and Hospice and Palliative Nurses Association (HPNA) have agreed that the ELNEC curriculum should be adopted as the standardized palliative care nursing curriculum for undergraduate, graduate, and

doctoral levels [American Nurses Association & Hospice and Palliative Nurses Association (ANA & HPNA), 2017].

Definitions of Terms

Before proceeding any further, it is important to outline terms that have vague definitions in society and healthcare: EOL care, palliative care, primary palliative care, and hospice care. These terms are often used interchangeably. A large number of researchers fail to define these terms, which makes reviewing research difficult to analyze. For the sake of clarity, the term terminally ill will be defined as well. EOL care is the central focus of this study.

EOL care- is defined as "the support and medical care given during the time surrounding death" (National Institute on Aging, n.d.a, para 2). Death and dying are integral components to life, events that will affect all who are involved. Each situation involves medical and emotional care that is provided to the patient and caregiver.

Palliative care has a very distinct meaning setting it apart from EOL care. Palliative care is defined by the World Health Organization (2019) as

> an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual. (para. 1)

Palliative care can be provided at any stage in a disease process even if curative treatment is underway [Institute of Medicine (IOM), 2015]. This document refers to palliative care for two primary reasons. First, nursing students need to be educated about the primary differences between palliative and EOL care in order to provide appropriate services and patient education. Secondly, as a chronic illness worsens, palliative care can transition to EOL care, with hospice services provided during the final 6 months of life. (National Institute on Aging, n.d.b).

Primary palliative care is

> palliative care delivered by health care professionals who are *not* palliative care specialists, such as primary care clinicians, physicians who are disease-oriented specialists (such as oncologists and cardiologists), and others (such as nurses, social workers, pharmacists, and chaplains) who care for this population but are not certified in palliative care. (IOM, 2015, p. 59)

National Consensus Project for Quality Palliative Care (2018) reports that primary palliative care includes the care of patients who are dying as well as caregivers.

Hospice care is described as care provided to patients who are terminally ill (American Academy of Hospice and Palliative Medicine, (n.d.), para, 9). Hospice care encompasses palliative measures. Hospice Foundation of America (HFA, 2014) believes the goal of hospice care is to promote quality of life for patients who are terminally ill. Hospice services are provided by a team of healthcare providers in an inpatient or home setting when the healthcare provider determines that patient's life expectancy is 6 months or less (HFA, 2014).

Terminally ill "is an irreversible illness that in the near future will result in death or a state of permanent unconsciousness from which the person is unlikely to recover" (American Cancer Society, 2018).

Statement of the Problem

Associate of Science in Nursing (ASN) programs are required by their local boards of nursing and accrediting agencies to meet the same benchmarks as baccalaureate programs, including passing the national licensure exam. Students can complete an ASN degree in approximately 2 years, which is half the time it takes to complete a baccalaureate program. Therefore, time constraints add a challenging element to ASN programs that can be difficult to overcome. Generally focused on teaching curative measures, skill acquisition, and critical thinking, ASN educators are limited to what can be taught in a fast-paced, saturated curriculum,

providing little time to explore EOL concepts. Smith et al. (2018) reported time constraints and limited clinical settings hinder nursing students from experiencing EOL care within formal nursing curricula.

EOL care is an overwhelming task that many healthcare professionals struggle to understand and perform. ASN programs must be creative and innovative in order to prepare students to provide EOL care. Despite national efforts to improve EOL education in nursing curricula, nurses continue to receive inadequate EOL training (American Association of Colleges of Nursing, 2016). Research has discovered that students and licensed nurses are not educationally prepared to provide EOL care (Ashley & Fasolino, 2016; Dame & Hoebeke, 2016; Lynch, 2012).

Statement of Purpose

ELNEC-Undergraduate curriculum was first made available to nursing schools in 2017 (ELNEC, 2018). Because this curriculum is new, there is no current research that has been published on the effectiveness of the curriculum. Therefore, evidence is needed to justify the adoption of ELNEC-Undergraduate into nursing curricula at all educational levels as suggested by the ANA and HPNA. This study evaluated the effectiveness of the ELNEC-Undergraduate curriculum at the ASN level. The purpose of the study was to determine if implementing the ELNEC-Undergraduate online learning modules improved student knowledge with respect to EOL care concepts.

Significance of the Problem

For decades, nursing faculty have struggled and even debated how to incorporate EOL care into nursing curricula. This study identified an effective teaching strategy to implement primary palliative care education, which includes EOL concepts, into the ASN curriculum. This

study addressed the need to improve students' and future nurses' knowledge of EOL concepts which research reveals as a priority. Ultimately, the goal of EOL care is to provide patients and caregivers with a peaceful death experience. Improving student knowledge in EOL concepts has the potential to improve the quality of care provided to the dying patient as well as caregivers.

Research Questions and Hypotheses

1. Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to EOL care?

   H_0: The ELNEC-Undergraduate online curriculum will not produce an increase in student knowledge with respect to EOL care.

   a) Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to the principles of primary palliative care?

      H_{0a}: The ELNEC-Undergraduate online curriculum does not produce a increase in student knowledge with respect to the principles of primary palliative care.

   b) Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to pain and symptom management in EOL care?

      H_{0b}: The ELNEC-Undergraduate online curriculum does not produce a increase in student knowledge with respect to pain and symptom management in EOL care.

   c) Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to communication in EOL care?

      H_{0c}: The ELNEC-Undergraduate online curriculum does not produce a increase in student knowledge with respect to communication in EOL care.

   d) Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to spirituality and grief in EOL care?

H_{0d}: The ELNEC-Undergraduate online curriculum does not produce a increase in student knowledge with respect to spirituality and grief in EOL care.

2. Does the age, ethnicity, gender, and pre-existing experiences of the participants in the study affect the students' knowledge with respect to EOL care?

3. How did the participants in the study perceive the effect of the ELNEC-Undergraduate online curriculum on their knowledge gained or not gained with respect to EOL care?

Methods

This study utilized a quantitative methodology. The setting was a small ASN nursing program in the southeastern United States. Students enrolled in the program's Advanced Adult Health and Critical Care Course, a 3-hour course, which included didactic and clinical components, was the population selected for this study. A quantitative methodology was implemented to statistically analyze the effects of a teaching strategy focused on EOL care concepts. Data analysis was conducted in three forms: separate paired sample *t*-tests; simple, multiple, and hierarchical regression; and descriptive analysis.

Conceptual Framework: Shared Theory in Palliative Care

Colley (2003) stated "nursing theory should provide the principles that underpin practice and help to generate further nursing knowledge" (p. 33). Grant and Osanloo (2014) reported that "the theoretical framework is the foundation from which all knowledge is constructed (metaphorically and literally) for a research study" (p. 12). Research revealed that palliative care models and theories are limited. The conceptual framework utilized for this study was Shared Theory in Palliative Care. Shared Theory in Palliative Care is a new theory developed by Desbiens, Gagnon, and Fillion (2012). The authors have only one publication describing the

theory which was published in 2012 and research revealed only one other publication which addressed the theory. Desbiens et al. reported the theory can be utilized as a framework to evaluate palliative care education in nursing programs. The authors believed that with further research and testing, Shared Theory in Palliative Care could be utilized "in studies aiming at developing competence in palliative care nursing to improve care quality and provide better quality of life for people with life-limiting illness" (p. 2122). The theory served as a roadmap to inform this study's research design, selection of the instrument, analysis of data, and conclusion. Chapter II of this document provides a detailed description of the theory.

Assumptions of the Study

An assumption can be defined as an act "of assuming that something is true" (Merriam-Webster.com, 2018). Research assumptions should be identified in the planning phase of research. For this study, the researcher identified three primary assumptions. First, the researcher assumed that students' knowledge of EOL care concepts would improve after implementing the ELNEC-Undergraduate online curriculum. The second assumption for the study was that participants would complete all six learning modules in the ELNEC-Undergraduate curriculum in an independent fashion. Students could inadvertently skew data if they did not complete the assignment. The third assumption was that researcher bias would not affect the study in any manner. Mertens (2015) reported that the researcher should follow strict methodological procedures when conducting research to remain neutral and prevent influencing the study. The researcher should implement validity checks to prevent bias.

Limitations of the Study

The researcher identified multiple limitations within this study. First, the study was limited to one ASN nursing program within a rural setting. Secondly, the small population was a

limitation to the study. Historically, the last semester of the academic program at the institution where this study took place has a total of 40 to 55 students enrolled in the Advanced Adult Health and Critical Care Course. The researcher identified that the first two limitations detract from the study's generalizability. The third limitation identified was that the ASN curriculum does not have a dedicated EOL course or module. Faculty reported integrating EOL concepts throughout the curriculum. However, they reported dedicating small amounts of time to EOL concepts due to time constraints. The last limitation identified by the researcher was that students have varying personal experiences with death and dying. Personal experiences with death can be positive or negative, which has the potential to skew the study results. Personal and nursing clinical experiences may improve or hinder the participant's willingness to learn EOL concepts.

Summary

In summary, EOL care is a grueling task that requires a nurse to meet the complex healthcare needs of patients and caregivers. Nursing curricula must evolve to meet the needs of a growing population of patients at EOL as well as those of future nurses. This document has identified the need for EOL content in nursing curricula at the undergraduate level and the potential significance of implementing an EOL curricula in nursing education. This study evaluated student knowledge of EOL concepts as a result of implementing ELNEC-Undergraduate curriculum. Chapter II provides an in-depth literature review and outlines the Shared Theory in Palliative Care as a conceptual framework. Chapter III describes the quantitative methodology used to implement the study, the research design, the setting of the study, participants, and data collection and analysis. Chapter IV provides a description of the demographics and pre-existing experiences of the participants and presents the results obtained

from the study based on each research question. Chapter V discusses the results, implications, and limitations of the study and provides recommendations for future research.

CHAPTER II

REVIEW OF RELATED LITERATURE

The lack of end of life (EOL) curriculum in nursing education is a global issue that has proven difficult to adequately address (Gillan et al., 2014; Herber & Johnston, 2012; McIlfatrick et al., 2010). Pain management, symptom management, communication, and spirituality are among the common areas students, as well as licensed nurses, have identified as educational needs. This chapter discusses the need for EOL education in nursing curriculum and introduces the End-of-Life Nursing Education Consortium-Undergraduate (ELNEC-Undergraduate) curriculum as a means to meet this growing educational demand. This chapter describes the use of Shared Theory in Palliative Care as a conceptual framework and provides a comprehensive review of the four constructs utilized in this study: principles of primary palliative care, pain and symptom management, communication, and spirituality and grief. This chapter concludes with an evaluation of the effects of population demographics and pre-existing experiences on providing EOL care.

Call for End of Life Education

National Consensus Project for Quality Palliative Care

Due to the increasing number of aging Americans, the healthcare arena has been compelled to evaluate EOL care provided to the dying population. Experts in palliative care and the Institute of Medicine (IOM) are among those seeking ways to improve EOL care. In 2001, experts in palliative care joined forces to discuss and organize the standardization of palliative care, which includes EOL care (NCP, 2018). This group of experts' sole focus was to improve

quality care to patients and caregivers receiving palliative and EOL care. The group formed the National Consensus Project for Quality Palliative Care (NCP). The NCP developed "the *Clinical Guidelines for Quality Palliative Care* which describe core concepts and structures for quality palliative care, including eight domains of practice" (NCP, 2018, p. iii). The eight domains of palliative care practice include structure and process of care; physical aspects of care; psychological and psychiatric aspects; social aspects of care; spiritual, religious, and existential aspects of care; cultural aspects of care; care of the patient nearing the end of life; and ethical and legal aspects of care (NCP, 2018). Domain seven, Care of the Patient Nearing the End of Life, outlines the importance of team-based care which includes physical, social, and spiritual care for terminally ill patients and caregivers (NCP, 2018). Domain seven stresses the importance of fostering a peaceful death by focusing on autonomy and valuing personal beliefs and religious preferences of the patient and caregiver (NCP, 2018).

Since the conception of the *Clinical Guidelines for Quality Palliative Care,* several revisions have been made to the document (NCP, 2018). The fourth and the most recent edition was published in the fall of 2018 (NCP, 2018). However, the focus, which is to improve the quality of care to patients and caregivers by strengthening the knowledge of those providing patient care, has not changed (NCP, 2018). The work of the NCP has influenced efforts to improve palliative education within the medical and nursing professions (NCP, 2018).

Institute of Medicine

The IOM has been an essential voice for EOL care for several decades, publishing many documents outlining effective approaches to EOL care and educational needs of those providing EOL care (IOM, 2015). The IOM published *Approaching Death: Improving Care at the End of Life* in 1997 and, in 2003, *When Children Die: Improving Palliative and End-of-Life Care for*

Children and Their Families in hopes of improving care to the dying population. For years these documents provided insight into a vulnerable and underserved population. However, due to the political upheaval surrounding healthcare and the formation of the Patient Protection and Affordable Care Act, the IOM conducted a "consensus study to produce a comprehensive report on the current state of care for people of all ages who may be approaching death" (IOM, 2015, p. 4).

In 2012, the IOM formed a 21-member committee to evaluate the care of the dying. The committee was charged with assessing EOL care, evaluating strategies to incorporate EOL care, developing recommendations addressing policies, financial concerns, educational development and EOL research, and developing a means of communicating to the public the committee's findings, strategies of improvement, and recommendations (IOM, 2015). The committee assessed the progress from the 1997 publication of *Approaching Death* through the current year (IOM, 2015). The IOM (2015) released the consensus study findings in the document *Dying in America: Improving Quality and Honoring Individual Preferences Near the End of Life*. The *Dying in America* report made recommendations on the delivery of care, communication, advanced care planning, professional education and development, financial aspects of care and policies and public awareness (IOM, 2015).

Dying in America provided the healthcare system as well as the public with a comprehensive review of care provided to the dying population. In regard to education, the *Dying in America* report recognized that EOL awareness and education had improved since the original IOM report, *Approaching Death* (IOM, 2015). The most substantial change in healthcare was the recognition of palliative and hospice medicine "as defined medical specialty, with 10 corresponding certification boards" (IOM, 2015, p. 221). The report recognized the

immense educational push to prepare healthcare professionals, including nurses, since the publication of *Approaching Death*. However, the 21-member committee charged with conducting the consensus report clearly outlined that educational deficits still existed (IOM, 2015). The IOM (2015) has acknowledged that even though educational efforts have improved in EOL care, this knowledge has not improved patient care of the terminally ill population. The IOM (2015) report called for expanded EOL care knowledge for all healthcare providers.

Development of Nursing Competencies When Caring for the Seriously Ill

American Association of Colleges of Nursing (AACN) is the national voice for academic nursing education and plays a vital role in developing nursing education standards and integration of said standards into nursing curricula (AACN, 2018a). Additionally, the AACN promotes nursing research and influences improved healthcare practice within the nursing profession (AACN, 2018a). In 1997, AACN released a document entitled, *Peaceful Death: Recommended Competencies and Curricular Guidelines for End of Life Nursing Care*, which provided nursing educators a guide to implement EOL care and competencies into nursing curriculum (AACN, 2016). AACN and the *Peaceful Death* document was integral in creating educational opportunities for the healthcare profession as well as undergraduate nursing students. The *Peaceful Death* document served as a guide for healthcare professionals when providing care to dying patients for over a decade.

In 2015, the *Peaceful Death* document was revised to meet the growing changes and demands in undergraduate nursing education. The document is now known *as CARES: Competencies and Recommendations for Educating Undergraduate Nursing Students* (ELNEC, 2018). The *CARES* document outlined 17 competencies that undergraduate nursing curricula should integrate to prepare future nurses to provide quality palliative and EOL care (AACN,

2016). When the following competencies are integrated into nursing curricula, future nurses are better prepared to be patient advocates and provide competent compassionate care to seriously ill patients and caregivers (AACN, 2016). The table below provides the competencies necessary for nurses to provide high-quality care to patients and families facing serious illness as outlined by the AACN.

Table: 2.1

Competencies Necessary for Nurses to Provide High-Quality Care to Patients and Families Facing Serious Illness

1. Promote the need for palliative care for seriously ill patients and their families, from the time of diagnosis, as essential to quality care and an integral component of nursing care.
2. Identify the dynamic changes in population demographics, health care economics, service delivery, caregiving demands, and financial impact of serious illness on the patient and family that necessitate improved professional preparation for palliative care.
3. Recognize one's own ethical, cultural and spiritual values and beliefs about serious illness and death.
4. Demonstrate respect for cultural, spiritual, and other forms of diversity for patients and their families in the provision of palliative care services.
5. Educate and communicate effectively and compassionately with the patient, family, health care team members, and the public about palliative care issues.
6. Collaborate with members of the interprofessional team to improve palliative care for patients with serious illness, to enhance the experience and outcomes from palliative

care for patients and their families, and to ensure coordinated and efficient palliative care for the benefit of communities.

7. Elicit and demonstrate respect for the patient and family values, preferences, goals of care, and shared decision-making during serious illness and at end of life.
8. Apply ethical principles in the care of patients with serious illness and their families.
9. Know, apply, and effectively communicate current state and federal legal guidelines relevant to the care of patients with serious illness and their families.
10. Perform a comprehensive assessment of pain and symptoms common in serious illness, using valid, standardized assessment tools and strong interviewing and clinical examination skills.
11. Analyze and communicate with the interprofessional team in planning and intervening in pain and symptom management, using evidence-based pharmacologic and nonpharmacologic approaches.
12. Assess, plan, and treat patients' physical, psychological, social, and spiritual needs to improve quality of life for patients with serious illness and their families.
13. Evaluate patient and family outcomes from palliative care within the context of patient goals of care, national quality standards, and value.
14. Provide competent, compassionate and culturally sensitive care for patients and their families at the time of diagnosis of a serious illness through the end of life.
15. Implement self-care strategies to support coping with suffering, loss, moral distress, and compassion fatigue.

16. Assist the patient, family, informal caregivers, and professional colleagues to cope with and build resilience for dealing with suffering, grief, loss, and bereavement associated with serious illness.
17. Recognize the need to seek consultation (i.e., from advanced practice nursing specialists, specialty palliative care teams, ethics consultants, etc.) for complex patient and family needs.

Source: American Association of Colleges of Nursing, (2016)

Following the lead of AACN, the National Council of State Boards of Nursing (NCSBN) has added EOL care competencies to the National Council Licensure Examination for Registered Nurses (NCLEX-RN) test plan (NCSBN, 2016). NCSBN develops the licensure exam that all students must pass in order to practice as a licensed nurse. NCLEX-RN is created to mirror nursing competencies the novice nurse should be prepared to implement (NCSBN, 2018). To meet the educational needs of undergraduate nursing students, nursing curricula must integrate EOL concepts and address the emotional and psychological concerns of patients in regard to EOL care.

Development of End-of-Life Nursing Education Consortium

In 2000, City of Hope Medical Center and AACN collaborated, with a grant funded by the Robert Wood Johnson Foundation, to develop a national initiative, the End-of-Life Nursing Education Consortium (ELNEC). The ELNEC project was created to meet the educational needs of healthcare professionals who provide EOL care to the terminally ill population (ELNEC, 2018). ELNEC was designed to train educators, nurses, and other medical personnel about how to care for the dying patient (ELNEC, 2018). Ferrell et al. (2015) reported the goal for the ELNEC curriculum "was to educate undergraduate and graduate nursing faculty and students and

practicing nurses on end of life care in train-the-trainer sessions" (p. 61). The ELNEC curriculum was developed by "palliative care experts with extensive input from an advisory board and reviewers" (ELNEC, 2018, □ 4). The curriculum is reviewed annually and updated as needed to meet the needs of all students (ELNEC, 2018). The curriculum was developed by reflecting on the AACN's *Cares* document, the NCP's *Clinical Guidelines for Quality Palliative Care,* multiple IOM reports including *Dying in America,* the *Oxford Textbook of Palliative Nursing* and the *Advanced Practice Palliative Nursing Textbook* (ELNEC, 2018).

In 2001, the first train-the-trainer course was held in Pasadena, California (Ferrell et al., 2015). Since that time, the ELNEC project team has striven to meet educational needs nationally as well as internationally. In 2006, ELNEC international courses began in order to promote global EOL care education (Ferrell et al., 2015). The ELNEC curriculum addressed the following areas of EOL care concepts: nursing care at the end of life; pain management; symptom management; ethical/legal issues; cultural and spiritual considerations in end-of-life care; communication; loss, grief, bereavement; and preparation for and care at the time of death (ELNEC, 2018). ELNEC offers a variety of specialty courses; ELNEC-Core, ELNEC-Advanced Practice Registered Nurses, ELNEC-Communication: The Foundation of Excellent Practice, ELNEC-Critical Care, ELNEC-Geriatric, ELNEC-Oncology Advanced Practice Registered Nurses, ELNEC-Pediatric Palliative Care, ELNEC-Undergraduate, Integrating Palliative Oncology Care Doctor of Nursing Practice Education and Clinical Practice, and ELNEC-For Veterans (ELNEC, 2018). All ELNEC curricula with the exception of ELNEC-Undergraduate are geared to meet the educational needs of licensed nurses.

ELNEC (2019) train-the-trainer courses have educated over 24,400 nurses and other healthcare clinicians in EOL care concepts in the United States (US). It is estimated that 675,000

healthcare professionals have subsequently been trained since the program's formation (ELNEC, 2018). ELNEC international efforts to provide palliative care education has been growing with 99 international countries having received training (ELNEC, 2019). ELNEC (2019) reported that 330 nursing programs have accessed the ELNEC-Undergraduate curriculum with a total of 25,000 students completing the curriculum. Despite the great strides ELNEC has made in improving EOL care education, the vast majority of the 3 million registered nurses in the US have not received this training (Glover, Garvan, Nealis, Citty, & Derrico, 2017; IOM, 2015).

ELNEC-Undergraduate Curriculum

The focus of this study was to evaluate student knowledge after the implementation of the ELNEC-Undergraduate curriculum as a teaching strategy for EOL care. Therefore, a comprehensive review of the curriculum was provided. In 2015, Cambia Health Foundation provided the ELNEC project with grant funding in order to improve undergraduate nursing education in palliative care (Ferrell et al., 2018). The ELNEC team was dedicated to the development of a curriculum that would be beneficial to all undergraduate nursing programs. The team chose an online format to best meet the needs of all nursing programs (Ferrell et al., 2018).

In 2017, the ELNEC-Undergraduate curriculum was provided online in collaboration with Relias learning management system (Ferrell et al., 2018; Mazanec, Ferrell, Malloy, & Virani, 2019). The online format provided students and faculty easy access to the curriculum (Ferrell et al., 2018). The grant provided by Cambia Health Foundation allowed 92 undergraduate nursing programs, including associate and baccalaureate, in Idaho, Utah, Oregon, and Washington, free access to the curriculum for 12 months (ELNEC, 2018; Mazanec et al.,

2019). All other undergraduate nursing programs in the remaining states in the US could implement the program for the cost of $29 per student for 12 months (Mazanec et al., 2019).

The ELNEC-Undergraduate online curriculum is composed of six interactive learning modules: an introduction to palliative care; communication; pain assessment and management; symptom management; loss, grief, and bereavement; and final hours (Mazanec et al., 2019). Each module provides student learning objectives. The table below provides titles and objectives for each module. For a complete outline of module topics see Appendix A, Outline of ELNEC-Undergraduate Curriculum.

Table 2.2

ELNEC-Undergraduate Titles and Objectives

Module 1: Introduction to Palliative Nursing • Define the philosophy and principles of palliative care and hospice. • Describe the role of the nurse, as a member of the inter-professional team, in providing quality palliative care for patients with serious illness and their families. • Identify common symptoms and concerns associated with serious illness that affect the physiological, psychological, social, and spiritual domains of quality of life.
Module 2: Communication in Palliative Care • Discuss the role of the nurse in communication with the patient, family, and interdisciplinary team across the serious illness trajectory and at end of life. • Describe active listening and mindful presence as essential skills for providing empathic care of patients with serious illness and their families. • Identify three communication techniques that the nurse can use to help patients and families discuss difficult topics in palliative care and at end of life.
Module 3: Pain Management in Palliative Care • Explain the biopsychosocial and spiritual nature of pain. • Describe the essential components of a comprehensive pain assessment. • Describe pharmacological and non-pharmacological interventions used to relieve pain. • Discuss the role of the nurse in pain assessment and management of patients with serious illnesses.
Module 4: Symptom Management in Palliative Care • Apply the biopsychosocial/spiritual model of pain assessment and management to other symptoms associated with serious illness. • Describe the assessment of common symptoms affecting patients with serious illness.

• Identify pharmacological and non-pharmacological interventions for management of common symptoms.
Module 5: Loss, Grief and Bereavement • Describe loss, grief, and bereavement as it relates to quality palliative care. • Identify the nurse's role in assessing and supporting grieving patients and families. • Develop an awareness of one's own reaction to loss and expressions of grief. • Identify healthy coping strategies you can use to deal with cumulative loss and prevent compassion fatigue and burnout.
Module 6: Final Hours of Life • Discuss the role of the nurse in preparing the patient and family for death. • Describe management of symptoms common at end of life. • Identify cultural and spiritual components of quality end-of-life care. • Describe the nurse's role in providing care for the body after death and bereavement support for the family.
Source: Relias Academy (n.d.a).

Each module requires approximately 1 hour to complete and is designed to keep the students engaged with an interactive format (Mazanec et al., 2019). Mazanec et al. (2019) reported that each module has 20 minutes of powerpoint presentation with "40 minutes of active sessions for clinical application" (p. 61). Clinical application is provided through "case studies, patient-nurse vignettes with critical thinking questions" as well as "'stop and think' questions that require" student participation (Mazanec et al., 2019, p. 61). Students cannot maneuver through the curriculum without viewing each component within the modules. For example, Module One uses video vignettes to describe the role of each member of the palliative care team. Students must watch each video before proceeding to the next component in the module. The patient-nurse vignettes provide the student with the opportunity to watch nurses interact at the patient's bedside (Mazanec et al., 2019).

At the conclusion of each module, there is a 10-question quiz. Students must achieve an 80% or higher to reach content mastery and credit for completing the module (Mazanec et al., 2019). The module quizzes mimic the NCLEX question style (Mazanec et al., 2019). An

advantage to the ELNEC curriculum for undergraduate students is that after all modules have been successfully completed.\, a certificate of ELNEC-Undergraduate curriculum completion is awarded (Mazanec et al., 2019). The certification of completion will enhance the students' portfolio when seeking employment.

Success of ELNEC Curriculum

Quality education and training decreases anxiety and improves nurse's confidence in providing EOL care, resulting in improved patient experiences (Davis & Lippe, 2017; IOM, 2015; Lippe & Carter, 2015; Peters et al., 2013). The ELNEC project team strove to improve EOL education (Ferrell et al., 2018). The ELNEC curricula have proven to increase student knowledge of palliative concepts, which includes EOL care (Glover et al., 2017).

ELNEC-Undergraduate is a relatively new curriculum, therefore, no studies have been published that have explored its impact on student learning. However, evidence from other ELNEC curricula supported the success of the programs in impacting EOL learning objectives. Most research has been conducted on the ELNEC-Core curriculum. Glover et al. (2017) conducted a study evaluating student (n=125) knowledge of palliative care after implementing the ELNEC-Core course. The 2-day course included six of the eight ELNEC-Core modules; a class discussion after a viewing of the movie, *Wit*; and implementation of a game entitled *Go Wish.* The evaluative measure utilized for the study was the 50-item ELNEC Knowledge Assessment Test and was administered in a pretest-posttest design. The study concluded that students' knowledge of EOL care was improved, "especially in content areas related to palliative care, symptom management, communication, and grief-related loss and bereavement" (Glover et al., 2017, p. 940). Glover et al.'s results were similar to those of O'Shea et al. (2015), which

concluded that student knowledge increased after the integration of aspects of ELNEC-Core curriculum into a course related to maternal-child concepts.

Barrere and Durkin (2014) conducted a phenomenological study evaluating nurses who had provided EOL care within the 1st year of practice. All participants had graduated from a Bachelor of Science in Nursing (BSN) program that integrated ELNEC-Core curriculum into the nursing curriculum. The study concluded that "threads of the ELNEC curriculum related to the importance of the nurse's role to facilitate a good death were evident in all the nurses' stories" (Barrere & Durkin, 2014, p. 42). However, the authors reported that even though the nurses had ELNEC-Core curriculum education, learning could have potentially occurred through clinical application of EOL care.

The ELNEC-Oncology curriculum was first developed to provide oncology nurses with education and materials to practice in the clinical setting (Coyne et al., 2007). Coyne et al. (2007) reviewed data obtained after two ELNEC-Oncology training courses were offered with a total of 124 participants. After each course, participants were asked to rate the course for content, clarity, and value using 1 to 5 (5 being the highest level). The participants from the first course rated the course content, clarity, and value a 4.9 and the second course content, clarity, and value was valued 4.96 (Coyne et al., 2007). Twelve months following the course, participants were asked to rank the effectiveness of oncology nurses pre- and post-course using a 10-point scale, with 10 being very effective. The results were as follows: "participants rated oncology nurses moderately effective ($\bar{X} = 6.54 \pm 1.81$) prior to attending ELNEC-Oncology and extremely effective ($\bar{X} = 7.76 \pm 2.14$) after attending the program ($p \leq 0.001$)" (Coyne et al., 2007, p. 804).

Many studies have evaluated attitudes and competence of students and nurses with regards to providing EOL care (Allen, 2018; Kopp & Hanson, 2012; Lippe & Becker, 2015; Smith-Stoner, Hall-Lord, Hedelin, & Petzäll, 2011). Peters et al. (2013) performed a literature review focusing on the impact of anxiety on EOL care performed by nurses. The review revealed a correlation between nurse's anxiety about death and attitudes on providing EOL care. The more anxious the nurse was about death, the more negative the nurse's attitude on EOL care. Peters et al. (2013) reported that EOL education improved nurses' attitudes regarding providing EOL care. Conner, Loerzel, and Uddin (2014) conducted a study evaluating student attitudes after implementing an online death and dying course, which included death and dying concepts as outlined within the ELNEC-Core curriculum. The study concluded that student attitudes on death and dying improved after the 16-week course. This aligned with the Barrere, Durkin, and LaCoursiere (2008) study that concluded the implementation of ELNEC-Core curriculum improves BSN students' attitudes toward EOL care.

Jackson and Motley (2014) evaluated the implementation of EOL education in a BSN program. Selected content from ELNEC modules (symptom management, communication, final hours of life, care of the patient and family experiencing loss, and care of self) and active learning activities were integrated into a 4.5-hour seminar (Jackson & Motley, 2014). The course was offered to students the semester before the expected graduation date. Data were obtained from student evaluations of the course and reflective journaling. The students rated the content quality of the modules presented in the course. With respect to the modules, the overwhelming majority of students ranked the content as excellent (Jackson & Motley, 2014). The percentage of students who ranked the content as excellent in symptom management was 73.6%, final hours was 76.4%, communication was 86.7%, care of the patient and family

experiencing loss was 96.2% and care of self was 91.5% (Jackson & Motley, 2014, p. 351). The reflective journal entries were positive regarding the course and content. Students reported learning the most about "symptoms of imminent death, communication tips for talking with patients and families holistically, and self-care" (Jackson & Motley, 2014, p. 350). Jackson and Motley (2014) reported the study showed the importance of adding content which addresses symptom management, communication, final hours, care of the patient and family experiencing loss, and care of self into nursing curricula.

Conceptual Framework: Shared Theory in Palliative Care

Shared Theory in Palliative Care was developed by the merging of two theories, Bandura's social cognitive theory (SCT) and Orem's self-care conceptual model (Desbiens et al., 2012). Bandura's SCT is not specific to nursing, therefore, it was paired with Orem's self-care conceptual model in nursing to provide a link to the nursing perspective (Desbiens et al., 2012). Dobrina, Tenze, and Palese (2014) described the shared theory as a theoretical development that "provides a framework to nurses in developing their competence to provide quality care to patients with life-threatening illness" (p. 76). Desbiens et al. (2012) believed the shared theory provides nursing programs with an appropriate framework to evaluate the effectiveness of building palliative care competencies.

Bandura's SCT provided a structure to theorize, promote, and assess the development of competence (Bandura, 1986). SCT is composed of three main pillars: environment, behavior, and person. SCT theorized that learning takes place when there is a dynamic and mutual interaction between the person, behavior, and environment (LaMorte, 2018). There are six constructs involved in SCT including reciprocal determinism, behavioral capability,

observational learning, reinforcements, expectation, and self-efficacy (LaMorte, 2018). Bandura used the terms efficacy and competence interchangeably (Desbiens et al., 2012).

Zhang, Luk, Arthur, and Wong (2001) described nursing competencies as "sets of knowledge, skills, traits, motives and attitudes that are required for effective performance in a wide range of nursing jobs and various clinical settings" (p. 469). SCT theorized that competence is developed through "training and experience" (Bandura, 1986). Bandura (1986) argued competence is learned and established through education and experiential activity. Bandura (1986) defined self-competence as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Bandura (1986) argued self-competency effects behavior. He believed people will avoid situations they feel exceed their ability and favor situations in which they believe they can excel. Within the context of SCT, both nursing competence and self-competence are required to provide care to chronically ill patients (Desbiens et al., 2012).

Orem (2001) believed that nursing science is a practical science. Practical sciences are "sciences where the purpose for developing knowledge is to know" (Banfield, 2011, p. 43). Banfield (2011) stated "in the case of nursing, knowledge is developed to provide direction for nurses in the provision of nursing care" (p. 43). Orem's self-care theory identified nursing as a science and provided a framework for acquiring and constructing nursing knowledge (Orem, 2001).

Orem's self-care model focuses on why patients need nursing care and how nursing care is provided by the nurse (Banfield, 2011). The three pillars of Orem's theory are theory of self-care, theory of self-care deficit, and theory of nursing system (Orem, 2001). The concept of self-care "corresponds to health-related activities performed by individuals on their own behalf to

maintain life, health and well-being" (Desbiens et al., 2012, p. 2115). Orem often referred to patients meeting their own needs as self-care agency (Orem, 1997). Self-care deficit exists when a patient can no longer meet his or her own self-care needs (Orem, 2001). In Orem's model, nursing systems are nursing interventions provided to the patient when he or she can no longer provide self-care (Banfield, 2011). Orem (1997) argued nurses rely on nursing agency to provide care to patients who can no longer meet their own self-care agency. Banfield (2011) stated "nursing agency is the conceptual element of the SCDNT (self-care deficit nursing theory) through which practical nursing science and nursing practice are linked" (p. 44).

There are three components in the Shared Theory in Palliative Care framework, patient, nurse, and the nurse-patient relationship, which help explain the process of providing palliative care. The shared theory is made up of six concepts designed to depict the development of the nurse-patient relationship during a life-limiting illness (Desbiens et al., 2012). Nursing competence, nursing self-competence, and nursing interventions are the first three concepts in the theory and are directly related to the nurse (Desbiens et al., 2012). The remaining three concepts (self-care behaviors, physical and emotional symptoms, and quality of life) pertain to the patients experiencing the illness (Desbiens et al., 2012). Nursing competence, nursing self-competence, and intervention were the components of the shared theory that informed this study.

Knowledge Guided by Shared Theory in Palliative Care

The Shared Theory in Palliative Care concept of nursing competency applies Orem's theory on nursing agency (Desbiens et al., 2012). Orem (2001) described nursing agency as evolving competencies that the nurse performs to meet the needs of patients. Orem believed nursing competencies are obtained through education and experiential activities, which include knowledge of nursing intervention and intellectual and practical skill.

The shared theory concept of nursing self-competence applies Bandura's SCT. Bandura (1986) argued that people are driven by their beliefs. Desbiens et al. (2012) reported that self-competency, when applied to palliative care nursing is defined as "nurses' judgment of their capabilities to provide quality care to patients and their families who experience life-limiting illness or are at the end of life" (p. 2121). Bandura (1986) theorized nurses who have high perceived self-competence perform clinically better than those who have low perceived self-competence.

In the shared theory, nursing interventions are provided to meet the self-care deficit needs of palliative patients and nursing systems. Nursing interventions are a combination of SCT (nursing intervention) and Orem's model (nursing system) (Desbiens et al., 2012). Nursing intervention in Bandura's SCT refers to nursing performance and behaviors. Bandura (1997) described a performance as an action or behavior and competence as having the knowledge to implement the performance. Desbiens et al. (2012) argued "construct of competence thus represents the capability to translate subskills (cognitive, social, emotional, and sensorimotor), knowledge, values and attitudes into proficient actions" (p. 2114). Orem's (2001) nursing systems classified and recognized nursing intervention based on patient need. Orem (2001) argued nursing systems are described as wholly compensatory (patient is dependent on others for self-care needs), partly compensatory (a joint effort between nurse and patient to meet the patient's needs), or supportive-educative (provide education to empower patients). With regard to palliative care, the nurse implements Orem's nursing systems, in combination or alone, dependent upon the patient's healthcare needs and health status (Desbiens et al., 2012). For the purpose of this study, the concepts which applied to the nurse were incorporated (nursing competence, nursing self-competence, and nursing interventions).

In conclusion, the Shared Theory in Palliative Care combined Bandura SCT and Orem's self-care model as a means to evaluate the palliative care nursing competency (Desbiens et al., 2012). The shared theory utilized Bandura's and Orem's conclusions that nursing competence, nursing self-competence, and nursing interventions are learned and developed through education and experience (Desbiens et al., 2012). Shared Theory in Palliative Care theorized the construct of competence as having the capability to translate skills, knowledge, values, and attitudes into action; meaning one must have knowledge to perform (Desbiens et al., 2012). Therefore, nursing curricula must cultivate student knowledge in respect to EOL care since licensed nurses are required to provide said care to patients and caregivers. For this study, the ELNEC-Undergraduate curriculum was the educational activity implemented to build and create nursing knowledge with respect to EOL care.

Lack of EOL Curricula in Nursing Education

The literature presented many barriers to incorporating and teaching EOL care, including lack of resources, decreased amount of EOL concepts in nursing lecture, nursing faculty knowledge on the topic, and time constraints (Carman, Sloane, Molloy, Flint, & Phillips, 2016; Ferrell et al., 2016, 2018; Todaro-Franceschi & Lobelo, 2014). Research has determined that EOL curricula are limited among nursing education (Davis & Lippe, 2017; Ferrell et al., 2018; Glover et al., 2017, IOM, 2015; Montgomery, Cheshire, Johnson, & Beasley, 2016). This lack of education and competence leaves students and new nurses anxious and fearful when required to provide EOL care (Adesina, DeBellis, & Zannettino, 2014; Allchin, 2006; Carman et al., 2016; Gillan, Parmenter, van der Riet, & Joeng, 2013; Mallory, 2003).

EOL concepts have been found to be a deficit in textbooks. Ferrell, Virani, and Grant (1999) conducted a content analysis of 50 nursing textbooks. The conclusion of the text analysis

was that “only 2% of the overall content and 1.4% of chapters of nursing text were related to EOL care” (Ferrell et al., 1999, p. 97). Kirchhoff, Beckstrand, and Anumandla (2003) reviewed 14 nursing critical care textbooks revealing only small amounts of EOL content in 11 of the texts and three did not address the topic at all. Ferrell, Mazanec, Malloy, and Virani (as cited in AACN, 2016) conducted an analysis using 10 nursing textbooks to reveal that palliative and EOL care content had increased to 19% since the previous textbook review by Ferrell et al. (1999). The most disturbing revelation of the analysis was that even though there had been an increase in the content much of it was outdated and oftentimes inaccurate (Ferrell et al. as cited in AACN, 2016).

Dickinson (2007) conducted a survey on palliative and EOL issues in medical and nursing schools. The survey revealed that 71% of BSN programs that participated reported less than 15 hours of lecture on palliative and EOL concepts. Herbert, Moore, and Rooney (2011) reported EOL care curriculum is limited to short classroom presentation, presented through a case study, or assigned as independent reading assignment. Lynch (2012) reported that in the US “4 out of 126 medical schools and only 3% of nursing schools offer a course dedicated to end of life care” (p. 176). Smith et al. (2018) reported time constraints and limited clinical settings hinder nursing students from experiencing EOL care within nursing curricula. EOL experience can be limited during clinical rotations, leaving students inexperienced in providing care to actively dying patients (Montgomery et al., 2016; Pullis, 2013; White & Coyne, 2011).

Ferrell et al. (2018) identified the lack of nursing educators who are adequately trained to teach primary palliative care. Mazanec et al. (2019) discussed the challenges of incorporating palliative care, which includes EOL care at the associate degree nursing level. Educators who lack palliative knowledge and skill were among the challenges discussed by the authors.

Mazanec et al. (2019) acknowledged that the saturated and fast-paced nursing curriculum at the associate level leaves little time to add new or additional content and is a challenge to providing palliative care education.

It is imperative that EOL education is integrated into nursing curricula to improve student knowledge. Lippe, Johnson, Mohr, and Kraemer (2018) conducted an integrative literature review focused on evaluating "the impact of palliative or EOL care interventional studies on learning outcomes for prelicensure health-care students" (p. 1). The review included 34 articles in which research was conducted primarily in the US. Lippe et al. (2018) focused the review on teaching interventions aimed at palliative care that could affect student knowledge and attitudes. Lippe et al.'s (2018) literature review concluded that knowledge and student attitudes are affected by palliative and EOL care educational opportunities, which was consistent with similar literature reviews conducted by Gillan et al. (2014) and Lippe and Carter (2015).

Constructs Identified for the Current Study

It is essential for nurses to understand EOL care to ensure quality care is provided to the terminally ill patients (Gillan et al., 2014). In 2016, the ANA released a position statement, *Nurses' Roles and Responsibilities in Providing Care and Support at the End of Life*, which addresses the nurse's roles and responsibilities when providing care to the terminally ill and provided recommendations to improve nursing practice, education, research, and administration. The ANA (2016) position statement reported that EOL care is complex and nurses must be knowledgeable of terminal illness trajectory to ensure quality care. The statement addresses the nurse's responsibilities to the terminal patient and caregiver as having the ability to recognize symptoms, administer medications, and implement additional interventions to meet the needs of the patient and provide support to all involved, which includes a holistic approach. The

constructs identified for the study were principles of primary palliative care, pain and symptom management, communication, and spirituality and grief. Each construct was addressed in the ANA position statement and recommendations were made to improve each in clinical practice.

Principles of Primary Palliative Care

Nurses must understand the fundamental concept of palliative and EOL care in order to provide adequate care to the dying patient and caregiver. The World Health Organization [WHO] (2019) outlined the aspects of palliative care as

1. provides relief from pain and other distressing symptoms;
2. affirms life and regards dying as a normal process;
3. intends neither to hasten or postpone death;
4. integrates the psychological and spiritual aspects of patient care;
5. offers a support system to help patients live as actively as possible until death;
6. offers a support system to help the family cope during the patient's illness and in their own bereavement;
7. uses a team approach to address the needs of patients and their families, including bereavement counseling, if indicated;
8. will enhance quality of life, and may also positively influence the course of illness;
9. is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy, and includes those investigations needed to better understand and manage distressing clinical complications.

Palliative care teams, which include nurses, are expected to be able to address controversial topics related to death and dying as well as implement appropriate interventions to the terminally ill patient and caregiver. In order to implement the aspects of palliative care outlined by WHO, students as well as nurses must be able to effectively communicate and be knowledgeable in EOL care.

Ferrell, Virani, Grant, Coyne, and Uman (2000) conducted a study investigating nurses' perspectives on how well nurses meet the needs of terminally ill patients. A descriptive survey was utilized with a response from 2,333 nurses working in a variety of settings. The survey revealed nurses face many EOL dilemmas when providing care. Among the dilemmas revealed in the study as very common were the use of advanced directives at 37% and preserving patient choice/self-determination at 23% (Ferrell et al., 2000). Advanced directives are implemented to express the health care preferences of a patient and promote open discussion between the patient, caregiver, and health care team (ANA, 2016). All nurses should be knowledgeable of advanced directives and the patient rights to determine a course of treatment.

Detering, Hancock, Reade and Silvester (2010) conducted a prospective randomized controlled trial study in order to explore the impact of advanced care planning in elderly patients. The study investigated if the participants had a *do not resuscitate* document, a legal surrogate, and EOL care wishes of the patients including life-prolonging treatment were known. All 309 participants received appropriate care for the diagnosis; however, 125 patients received advanced care planning in addition to care. Participants were followed for 6 months or until death (Detering et al. 2010). The study concluded advanced care planning improved EOL care and improved patient and caregiver satisfaction when advanced care planning is implemented. In

addition, caregivers reported less stress, anxiety, and depression when patients have advanced care planning and patient's wishes are known (Detering et al., 2010).

Van Vorst et al. (2006) included all members of the EOL care interdisciplinary team. The findings indicated that participants expressed the need for additional educational opportunities in EOL care skills and training (Van Vorst et al., 2006). Van Vorst et al.'s findings were similar to that of Herber and Johnston's (2012) systematic literature review focusing on healthcare support teams working in palliative and hospice care. Their study revealed that the healthcare support team had inadequate training to meet the requirements of the job and needs of the patients they served (Herber & Johnston, 2012).

Lynch's (2012) review of rural access to EOL care services revealed the need for "formal and continuing education programs" for all aspects of end of life care (p. 176). Weisenfluh and Csikai (2013) conducted a quantitative study on the educational needs of 1,169 social workers working in hospice and palliative care agencies. The study concluded that "psychological and social needs of patients and families and psychosocial interventions" were the most important educational needs identified (Weisenfluh & Csikai, 2013, p. 58); however, only half of the participants had ever attended a national conference pertaining to EOL concepts. The majority of participants reported looking for local or regional means of continuing education (Weisenfluh & Csikai, 2013).

Jeffers (2014) qualitative study investigated nursing faculty members' perceptions of EOL education in a clinical setting. After conducting interviews, a common theme among faculty revealed that faculty were unsure if students understood EOL care. Jeffers (2014) identified that students were more concerned with providing skill-based interventions than addressing the holistic needs of patients.

The ANA (2016) position statement recommended four improvements in the realm of palliative care nursing education. The recommendations are

1. Those who practice in secondary or tertiary palliative care will have specialist education and certification.
2. Institutions and schools of nursing will integrate precepts of primary palliative care into curricula.
3. Basic and specialist End-of-Life Nursing Education Consortium (ELNEC) resources will be available.
4. Advocate for additional education in academic programs and work settings related to palliative care, including symptom management, supported decision-making, and end-of-life care, focusing on patients and families.

In order to improve palliative care education, nursing curricula must adapt to include these concepts. The ANA, IOM, and AACN are respectable organizations that have promoted and informed nursing education that palliative care concepts which include EOL care, must be added to nursing curricula to provide students and future nurses the tools needed to provide quality care to dying patients and caregivers.

Pain and Symptom Management

Carman et al. (2016) made the bold statement that nursing education places great value on teaching about the moments when life begins, while little time is given to the time of death. All patient death and dying experiences are unique. During patient decline and the active dying process, a variety of physical symptoms occur which can be alarming to the patient and caregiver (Lamers, 2017; Rome, Luminais, Bourgeois, & Blais, 2011). Weakness; fatigue; pain; respiratory compromise; changes in neurological status resulting in confusion, delirium, and loss

of consciousness; nutritional decline; nausea and vomiting; constipation; and loss of bowel and bladder function are examples of the many manifestations a patient may experience as one's health declines ("American Nurse Today", 2012). ANA (2016) stated that nurses have the responsibility to meet the terminally ill patients and caregivers' needs including the promotion of physical comfort as well as psychological and spiritual issues.

McIlfatrick et al.'s (2010) study reported the findings of their quantitative research conducted in Northern Ireland. They describe link nurses as "a generalist nurse with specialist interest in a particular area" (p. 556). The 81 palliative care link nurses were highly educated in all aspects of EOL care. However, the study identified the need for "more practice-based learning," including skills and symptom management (McIlfatrick et al., 2010).

White and Coyne's (2011) descriptive, cross-sectional study asked licensed oncology nurses (n=714) to rate the importance of EOL competencies. The highest ranking EOL competency was symptom management (26%). The respondents ranked communication a close second (21%). Ninety-nine percent of the respondents stated that EOL education was important to nursing practice.

Even the most seasoned nurses can find EOL care challenging due to a variety of emotions elicited when dealing with death and dying. Research revealed pain and symptom management as a deficit of students and nurses (Hebert et al., 2011; Jansen et al., 2016; White & Coyne, 2011). Park, Jee, Kim, and Kim (2014) believed that nurses indirectly experience the suffering their patients endure when medical interventions are unable to relieve patient distress. The phenomenological qualitative study evaluated how eight senior nursing students in Korea reacted to their first experience with death. Powerlessness, fear of death, avoidant behavior, and self-doubt were among the themes recognized in the Park et al. study. The students were left

feeling inadequately prepared to provide quality care for the dying patient and felt the need to seek education regarding death and dying (Park et al., 2014).

Carman et al. (2016) focused on the implementation of a learning bundle to provide EOL education to nursing students utilizing a quasi-experimental approach. The learning bundle consisted of didactic content, classroom discussion, and an EOL care simulation experience. The study concluded that students' attitudes on providing EOL care improved significantly after the implementation of the learning bundle (Carman et al., 2016). However, during the simulation, Carman et al. acknowledged that students struggled to recognize respiratory distress, implement a respiratory assessment, and recognize the moment that death occurred.

In summary, pain and symptom management can be a complex aspect of EOL care. In order to improve care provided to the terminally ill patient, students must be exposed to EOL curricula and experiences. The ANA (2016) position statement recommended improvements in the realm of nursing practice. The recommendations were

1. Strive to attain a standard of primary palliative care so that all health care providers have basic knowledge of palliative nursing to improve the care of patients and families.
2. All nurses will have basic skills in recognizing and managing symptoms, including pain, dyspnea, nausea, constipation, and others.
3. Encourage patient and family participation in health care decision-making, including the use of advance directives in which both patient preferences and surrogates are identified.

Nursing curricula must strive to meet the recommendations of the IOM, AACN, and ANA when integrating EOL concepts into nursing curricula in order to meet the needs of nursing students and future nurse.

Communication

Death and dying is a difficult topic to discuss with the terminally ill patient and caregiver. Undergraduate nursing students and licensed nurses have expressed feelings of being unsure, decreased confidence, and anxiousness when communicating with the terminally ill patient and caregiver (Bloomfield, O'Neill, & Gillett, 2015; Glover et al., 2017; White & Coyne, 2011); as well as the desire to improve communication skills while providing EOL care (Ek et al., 2014). Cultural and spiritual differences, family dynamics, financial concerns, educational background, and physical variables (physical exhaustion, disease progression, and comorbidities) are among communication barriers when providing EOL care (Ferrell et al., 1999; Matzo, Sherman, Sheehan, Ferrell, & Penn, 2003). Three of the 17 competencies outlined in the CARES document addresses communication while providing EOL care (AACN, 2016). NCP (2018) reported communication skills utilized in palliative care improve symptom management and spiritual support, and aids in advanced care planning. To be knowledgeable nurses, students should be exposed to communication concepts utilized during EOL care while in nursing school. However, the IOM (2015) and Smith et al. (2018) reported that nursing curricula have neglected to adequately address communication skills in EOL care and that it is imperative to integrate said skills into curricula to enhance EOL care as well as meet the needs of future nurses.

Communication is a vital component of nursing, which includes the development of a healthy nurse-patient relationship (Epstein & Street, 2007; Kourkouta & Papathanasiou, 2014; Townsend, 2014). Communication is defined as "an interactive process of transmitting

information between two or more entities (Townsend, 2014, p. 116) and is always conveyed whether it is verbal or nonverbal (Kourkouta & Papathanasiou, 2014; Townsend, 2014). Nurses should exhibit effective communication skills and a genuine, nonjudgmental attitude when communicating with patients and caregivers (Townsend, 2014). EOL care includes open communication between the patient and caregivers (Ashley & Fasolino, 2016; Croxon, Deravin, & Anderson, 2017). Odgers, Penney, Fitzpatrick, and Shee (2018) reported that communication at the EOL that includes the patient's "goals of care, limitations of treatment, a palliative approach to care, or provision of terminal care" is often delayed (p. 22). Kourkouta and Papathanasiou (2014) reported that effective communication between patient and nurse improves patient outcomes. Therefore, nursing curricula should include communication in order to enhance the patient-nurse relationship, especially in the ever-evolving multicultural world (Kourkouta & Papathanasiou, 2014).

Bloomfield et al. (2015) conducted a mixed methods study in London to evaluate the implementation of simulation as a means to improve communication during EOL care. Participants included nursing (n=180) and medical (n=450) students. Students completed a pre-simulation questionnaire which revealed that 79% of students "reported feeling not at all confident or only a little confident about communicating with the dying patients" and "75 percent of participants did not feel at all competent or felt only a little competent regarding their ability to communicate with dying patients" (Bloomfield et al., 2015, p. 1657). Post-simulation results improved greatly with 71% of students reporting feeling confident with communication while providing EOL care and 85% reporting feeling competent to communicate with terminally ill patients (Bloomfield et al., 2015).

Ashley and Fasolino (2016) surveyed 803 registered nurses working in acute care settings in a large healthcare facility in order to investigate their attitude toward providing EOL care. Facilitating communication with patients and caregivers was the primary educational barrier identified. The nurses had a positive perception of EOL care "but lack the knowledge of how to discuss" such a sensitive topic (Ashley & Fasolino, 2016, p. 117).

Ferguson and Cosby (2017) conducted a mixed methods study evaluating nursing students' attitudes and experience in regard to EOL care. Participants were 17 nursing students enrolled in a BSN program. The qualitative data were derived from debriefing sessions held immediately following an EOL simulation experience. Communication was among the four themes generated from the study. Students revealed that they recognized the need for therapeutic communication, however, they found it difficult to implement. Students also reported that the patients' lack of ability to communicate made the simulation experience difficult.

Odgers et al. (2018) conducted a qualitative study to explore the caregivers' experience of EOL care. Poor communication was among the themes that emerged from the study, which was similar to Russ and Kaufman's (2005) study results. Participants consistently reported a lack of open and clear communication between the caregivers and the healthcare providers (Odgers et al., 2018). Participants reported that the lack of communication left them unable to understand their role in the care of the patient as well as feeling excluded in the decision-making process (Odgers et al., 2018). Odgers et al. (2018) reported participants believed they were not being prepared for the imminent death of the patient due to healthcare providers using euphemisms. Participants reported a desire for factual information as well as a person to decipher any information provided (Odgers et al., 2018).

In summary, there is an abundance of research revealing that students and licensed nurses struggle with the ability to communicate with dying patients and caregivers. Communication skills are essential to provide holistic care to the dying and building communication competence is important for students and future nurses (Smith et al., 2018). The ANA (2016) position statement recommended that nurses should be comfortable discussing "death, and will collaborate with the care teams to ensure that patients and families have current and accurate information about the possibility or probability of a patient's impending death" (p. 2). Integration of communication skills must be addressed in nursing curricula to meet the needs of students, future nurses, as well as dying patients and caregivers.

Spirituality and Grief

Spirituality. EOL care is a holistic service that integrates physical, emotional, and spiritual needs of patients and caregivers. Holistic nurses value the importance of combining the mind, body, and spirit when providing nursing care (Boswell, Cannon, & Miller, 2013). Spirituality has been defined in multiple ways, therefore, there is no universal definition. Many have described spirituality at the EOL as the pursuit of meaning and purpose of one's life (Martsolf & Mickley, 1998; Stephenson & Berry, 2014; Stephenson, Drucker, & Martsolf, 2003). Barriers to nurses providing spiritual care at the EOL have been identified as a lack in confidence in nursing skill and competence, unclear of the nursing role in spiritual care, and inadequate educational background in spiritual care (O'Brien, Kinloch, Groves, & Jack, 2018).

Nurses avoid providing spiritual care due to the lack of understanding spirituality and how to provide spirtual care as well as the overwheliming diversity of spritual beliefs among patients and nurses (Tiew, Kwee, Creedy, & Chan, 2013). Petersen's (2013) literature review on spiritual care provided to terminally ill children stricken with cancer revealed that gaps in

knowledge and evidenced-based practice prevent adequate spiritual care. Petersen (2013) reported spiritual awareness, skill, and knowledge would improve spiritual care provided at the EOL.

Boswell et al. (2013) conducted a retrospective study which investigated students' perceptions of holistic care by examining journal entries of the study participants. The researchers concluded students understood and valued the need for the integration of spirituality in patient care; however, students were uncomfortable when asked to discuss spirituality and expressed the desire of increased spirituality education. Healthcare providers recognize a variety of spiritual issues patients may develop during the end stages of life (Stephenson & Berry, 2014). After conducting a literature review, Stephenson and Berry (2014) reported that EOL care is improved when healthcare professionals have an enhanced understanding of spiritual uncertainty. Spiritual concepts must be integrated into nursing curricula to prepare students and future nurses to meet the complex needs of the terminally ill population and caregivers.

Strand, Carlsen, and Tveit (2017) conducted a qualitative study utilizing nursing students enrolled in a BSN program. The study implemented an educational program focused on teaching spiritual care in the hospital setting. Focus group sessions revealed that the majority of nursing students were uncomfortable communicating with patients about spiritual topics and avoided the topic with patients (Strand et al., 2017). After the educational opportunity, students reported a better understanding of spiritual care and felt increased confidence with discussing spiritual concerns with patients.

In conclusion, spirituality is complex and unique to the individual. The vast diversity of spiritual beliefs can cause students and licensed nurses to be hesitant to address spirituality. The ANA (2016) recommended future research should be aimed at developing "best practices for

quality care across the dimensions of end-of-life care, including the physical, psychological, spiritual, and interpersonal" (p. 2). Giske's (2012) literature review revealed that undergraduate nursing students can learn to provide spiritual care when given a variety of learning opportunities and proper instruction. Giske believed that nursing educators must prepare students to meet the spiritual needs of the dying patient and caregiver.

G***rief.*** All individuals experience some form of grief after the loss of a loved one (American Psychological Association [APA], 2018), which is a normal process (Tofthagen, Kip, Witt, & McMillan 2017). However, grief is a complicated process that has the potential to lead to depression, sadness, anger, and confusion (APA, 2018). The AACN (2016) *CARES* document addressed grief in several of the competencies nursing students should be able tp perform upon completing nursing school. However, nursing curricula have very little time allocated or fail to address grief of the family after loss (Tofthagen et al., 2017). Carman et al. (2016) recognized students were obviously uncomfortable when required to engage caregivers through the grieving process and assess spiritual concerns during an EOL simulation.

In 1969, the Kübler-Ross model, also known as five stages of grief, was introduced addressing the emotional states experienced by dying patients (Kübler-Ross, 1969). The lack of medical school curriculum dedicated to death and dying inspired the development of the Kübler-Ross model. The five stages of grief identified in the model were defined as denial, anger, bargaining, depression, and acceptance (Kübler-Ross, 1969). Kübler-Ross (1969) understood that grief is individualized and not all would experience all of the stages nor in the exact order as defined (Kübler-Ross & Kessler, 2000). There is no timetable for grief and it should not be rushed by others' opinion or imposed timeframes. Grief can resonate in differing manifestations. For example, crying, headaches, insomnia, anxiety, guilt, loss of appetite, and joint pain are

among the symptoms experienced when grief is present (Gregory, 2018). Herbert et al. (2011) reported nurses fail to recognize the signs of grief. It is essential for nurses to understand the process of grief before they can serve and bring comfort to patients and caregivers (Herbert et al., 2011).

Forte, Hill, Pazder, and Feudtner (2004) reported that bereavement care includes interventions supporting the caregiver after the death of a family member as the grief process unfolds. Mitchell (2005) conducted an evaluation of bereavement and grief education for student midwives in the UK. Mitchell (2005) collected data from reflective journaling and discussion sessions with students. Students consistently reported feeling anxious and scared to discuss death and provide bereavement care to grieving parents. Students reported that aspects of the curriculum that included bereavement care relieved fear and improved understanding of how to provide care to grieving patients (Mitchell, 2005).

Grief occurs with a sudden or expected loss (Kenner, Press, & Ryan, 2015). Kenner et al. (2015) focused on the parental loss of a child in the neonatal intensive care setting. However, the interventions proposed can apply to any bereaved case. Kenner et al. (2015) argued for family-centered care which focuses on a "culturally driven plan" and the inclusion of bereavement services in the plan of care (p. 22).

In conclusion, grief is an individualized experience. The individualistic component of grief is a challenge for nurses (Oates & Maani-Fogelman, 2018). Oates and Maani-Fogelman (2018) discussed the emotional toil nurses experience while providing bereavement care, which can result in anxiety and professional burnout. Bereavement education must be integrated into nursing curricula to protect the nurse who provides care to dying patients and caregivers in order to promote a good death (Sacks & Volker, 2015).

Demographics and Pre-existing Experiences of Students

As stated throughout this document, students and licensed nurses have strong emotional responses to caring for the dying patient. This section will review literature specific to age, gender, and pre-existing experiences of students in relation to death and EOL care. Adesina et al. (2014) mixed method study on the attitudes, experiences, knowledge, and education of Australian nursing students revealed that gender did not significantly affect students' attitudes toward death. However, the age of the student impacted the attitude toward EOL care significantly. The study revealed older students were significantly more confident in certain aspects of death and dying (Adesina et al., 2014). Lippe and Carter's (2017) literature review revealed that age was a significant outcome among five of the studies reviewed.

Chow, Wong, Chan, and Chung (2014) conducted a cross-sectional study in a Hong Kong university focused on comparing nursing students' demographics, clinical experience, knowledge, perceived competence, and attitude toward care provided to dying patients. The study could not draw a conclusive finding regarding the relationship between gender and student attitude and perceived competence (Chow et al., 2014). However, the study revealed clinical experiences exposing students to death and dying significantly enhanced students' perceived competence and attitude. Chow et al.'s results were similar to those of Lippe and Carter (2017) who concluded that gender lacked significance among the articles included within their literature review.

Zyga, Malliarou, Lavdaniti, Athanasopoulou, and Sarafis's (2011) quantitative study concluded younger students have higher levels of anxiety and more negative attitudes toward EOL care than older students. Two surveys were implemented to obtain data, Death Attitudes Profile-Revised (DAP-R) and the Frommelt Attitude Toward Care of the Dying Scale

(FATCOD). Students older than 50 scored higher on three of the five DAP-R subscales (DAP-neutral acceptance [p=0.004], DAP avoidance [p=0.033], and DAP-escape [p=0.002]) than younger students (Zyga et al., 2011, p. 103). The FATCOD concluded students older than 50 scored higher than younger nurses, indicating that younger nurses experienced higher anxiety levels (Zyga et al., 2011). Lange, Thom, and Kline's (2008) quantitative study revealed similar results to Zyga et al.'s (2011) study which was aimed at Greek renal nurses' attitudes regarding death. Lange et al. (2008) concluded that the variables most likely to predict nursing attitudes toward dying and EOL care were age, nursing experience, and history of providing EOL care.

Research has shown that experience with death, whether personal or educational, has a positive effect on students' attitudes toward EOL care (Barrere et al., 2008; Carman et al., 2016; Frommelt, 1991; Zyga et al., 2011). Adesina et al. (2014) revealed that 59% of the student participants had a personal or professional experience with death. The researchers defined personal as a loss of a loved one and professional as a work or nursing school-related experience(s). Participant interviews revealed some students believed that personal and work experience positively affected EOL care more so than educational preparation (Adesina et al., 2014). While some participants reported that "personal and professional experience of death and dying provided context for their learning and improved their EoLC knowledge and confidence" (Adesina et al., 2014, p. 400).

In conclusion, research reveals that age and pre-existing experiences of students and licensed nurses have a great impact on student attitudes towards death and dying (Barrere et al., 2008; Black, 2007; Iranmanesh, Savenstedt, & Abbaszadeh, 2008, Zyga et al., 2011). Further research should be aimed at gender in order to draw conclusive results (Chow et al., 2014). Research reveals the need to incorporate EOL care into nursing education to improve student

attitude, knowledge, and competence (Chow et al., 2014; Loerzel & Conner, 2014; Matsui & Braun, 2010; Peters et al., 2013)

Summary

In summary, there is an abundance of qualitative research (Ashley & Fasolino, 2016; Grabow, 2017; Park et al., 2014) that has investigated the attitudes of students and licensed nurses on providing EOL care after the implementation of ELNEC curriculum, which focused on advanced practice nurses. However, very few studies focused on ELNEC curriculum exist. Research revealed the need for increased EOL care curricula at the undergraduate level for students and licensed nurses in order to effectively provide care to the terminally ill population (AACN, 2016; Ferrell, Virani, Paice, Malloy, & Dahlin, 2010, Gama et al., 2012; McIlfatrick et al., 2010).

The gap in research lay in the infancy of the ELNEC-Undergraduate curriculum resulting in no published research to support the curriculum's effectiveness. This study addressed this particular gap by evaluating student knowledge of EOL care pre- and post-implementation of the ELNEC-Undergraduate curriculum in an ASN program. Chapter III discusses the methodology, design of the study, setting of the study, population, course selection, development of study constructs, instrumentation, consent, data collection, and data analysis.

CHAPTER III

METHODS

Nursing faculty have expressed the desire for effective teaching strategies that would improve end of life (EOL) education in nursing curricula (Jeffers, 2014). The purpose of the study was to determine if implementing the End-of-Life Nursing Education Consortium (ELNEC)-Undergraduate online learning modules improves student knowledge in EOL care concepts. This chapter focuses on a one group pretest-posttest design, the institution where the study was held, participants, course selection, development of this study's constructs, instrumentation, consent, data collection, and data analysis.

Research Questions and Hypotheses

1. Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to EOL care?

   H_0: The ELNEC-Undergraduate online curriculum will not produce an increase in student knowledge with respect to EOL care.

   a) Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to the principles of primary palliative care?

      H_{0a}: The ELNEC-Undergraduate online curriculum does not produce a increase in student knowledge with respect to the principles of primary palliative care.

   b) Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to pain and symptom management in EOL care?

H_{0b}: The ELNEC-Undergraduate online curriculum does not produce a increase in student knowledge with respect to pain and symptom management in EOL care.

c) Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to communication in EOL care?

H_{0c}: The ELNEC-Undergraduate online curriculum does not produce a increase in student knowledge with respect to communication in EOL care.

d) Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to spirituality and grief in EOL care?

H_{0d}: The ELNEC-Undergraduate online curriculum does not produce a increase in student knowledge with respect to spirituality and grief in EOL care.

2. Does age, ethnicity, gender, and pre-existing experiences of the participants in the study affect the students' knowledge with respect to EOL care?

3. How did the participants in the study perceive the effect of the ELNEC-Undergraduate online curriculum on their knowledge gained or not gained with respect to EOL care?

Research Design

The Shared Theory in Palliative Care framed the research design, using pretest and posttest data. This research design was informed by the following theoretical perspectives: (a) knowledge cultivates competence and (b) competence is developed through educational activity. The pretest and posttest feature collected data to measure participant knowledge of EOL care based upon an educational intervention, the ELNEC-Undergraduate curriculum.

A quantitative methodology was utilized for this study. Creswell (2014) defined quantitative research as "an approach for testing objective theories by examining the relationship

among variables" (p. 4). Quantitative data examine the connection between variables that can be measured and analyzed through a statistical process (Creswell, 2014). Quantitative researchers strive to conduct studies that are reproducible and valid. This quantitative study investigated the difference between pretest and posttest knowledge, examined the effect of the ELNEC-Undergraduate curriculum on knowledge, and integrated a one group pretest-posttest design.

One Group Pretest-Posttest Design

This study employed a one group pretest-posttest design. Creswell (2014) stated that the one group pretest-posttest design "includes a pretest measure followed by a treatment and a posttest for a single group" (p. 172). The study utilized one group of participants. A pretest was administered before the intervention, which was the ELNEC-Undergraduate online curriculum. After the intervention, the same group of participants took the posttest. This design was beneficial to the researcher when measuring the effect of the intervention.

Setting of the Study

After obtaining Institutional Review Board approval (see Appendix J, IRB Approval Letter; Appendix K, IRB Informed Consent), the research took place on a small university campus located in the southeastern region of the United States. The university is a public institution located in a rural community. The university strives to meet the needs of all potential students by offering educational opportunities on one campus as well as an online format. On campus there are over 90 fields of study in five different colleges and over 50 degrees and certifications online that students can pursue. The university offers certifications, associate, and bachelor degrees as well as graduate studies including masters and doctoral programs. Since 1938, the university has been accredited by the Southern Association of Colleges and Schools

Commission on Colleges. In the fall of 2018, the setting had a total of 5,206 students enrolled in on-campus and online undergraduate and graduate courses.

The university is home to an Associate of Science in Nursing (ASN) program. The associate degree program's location in a 4-year institution provides a unique advantage compared to its counterparts. Due to its location in a university setting, the program is not required to follow the statewide Associate Nursing Degree curriculum that is mandated by the State Board of Nursing. This program has the same academic freedom as any other 4-year nursing school and maintains full accreditation status by the Accreditation Commission for Education in Nursing. All students who successfully complete the nursing program are eligible to sit for the National Council Licensure Examination for registered nurses (NCLEX-RN) licensure exam.

The ASN program where the study was conducted is comprised of five semesters. However, in the first semester, students are completing general education courses and have not been admitted into the nursing program. Once students' complete general education courses and all admission requirements have been met, students are considered for admission into the nursing program. Historically, 70-80 students are admitted to the program each spring semester.

The ASN program is divided into two levels, first and second. Students are considered first level during the first spring semester after admission and the summer semester. Students are considered second level students once they progress into the final two semesters. Nursing courses are offered once a year. The course of study outlined by the Division of Nursing must be followed. The table below outlines the course of study for the nursing program where the study was conducted.

Table 3.1

Outline of the Course of Study With Content and Credit Hours for the Setting of the Study

Level I		
Spring (First Nursing Semester)		
Course	**Credit Hours**	**Course Content**
First Nursing Semester: NS 101 Introduction to Pharmacology	2	Pharmacokinetics Dosage Calculations Anti-infectives Gastrointestinal drugs Pain management Cardiac drugs Respiratory drugs
NS 102 Foundations of Nursing Practice I	6	Nursing Process/Concept Mapping Introduction to nursing Communication Basic management principles Infection Control Caring Interventions, Basic Skills Safety, Mobility Elimination Physical Assessment, Vital Signs Aging
Summer (Second Nursing Semester)		
NS 103 Foundations of Nursing Practice II	5	Fluid and Electrolytes Surgery Musculoskeletal disorders Orthopedics
Level II		
Fall (Third Nursing Semester)		
NS 201 Maternal-Child Nursing	6	Antepartum Normal and High-Risk Labor and Delivery Normal and High-Risk Postpartum High-Risk Newborn Growth and Development in Children Child Abuse, Learning Disorders Medications, Safety, Hospitalization Congenital and Acquired Disorders

		Infectious Diseases, Immunizations
NS 202 Adult Health Nursing	8	Communicable Diseases Acute and Chronic Respiratory Disorders Hypertension and Renal Disorders Diabetes and Sensorineural Disorders Neurological Disorders Gastrointestinal Disorders Liver, Pancreas, and Gallbladder Disorders
Spring (Fourth and Final Nursing Semester)		
NS 203 Mental Health Nursing	5	Principles of Mental Health Nursing Mood Disorders Schizophrenia Crises Management Anxiety Disorders Personality Disorders Eating Disorders Post-Traumatic Disorders Substance Abuse
NS 204 Advanced Adult and Critical Care Nursing	9	Cardiac Neurological Oncology Hematology Endocrine Trauma & Burns Management
NS 205 Preparation for Licensure	1	Concentration on the National Council of State Boards of Nursing's Client Need Categories: Basic Care & Comfort, Safety & Infection Control, Health Promotion & Maintenance, Management of Care, Reduction of Risk, Pharmacology& Parenteral Therapies, Physiological Adaptation, Psychosocial Integrity

The nursing program is not a stand-alone college. The program is a division of the university and is an independent academic unit within the organizational structure at the

university. The division has one administrative role, Chairperson, who is empowered by the President and Provost of the university. The Chairperson is responsible for the development and administration of the program as well as abbreviated teaching duties. Currently, the division employs seven full-time nursing faculty members who divide teaching duties between first and second level courses. Faculty team teach within each nursing course, meaning course content is divided among multiple faculty. Full-time faculty members teach theoretical and clinical content.

Researcher Positionality

This researcher embodies a rich history as a rural hospice nurse providing EOL care in the home environment for over 5 years. I have firsthand knowledge and understanding of the importance of providing EOL education at the undergraduate nursing level. As an ASN graduate, I did not receive the theoretical or clinical preparation needed to provide care to the terminally ill patient as well as the caregiver. Once hired as a hospice nurse, I struggled to understand the physiological changes experienced by patients, provide effective symptom management, and found it difficult to communicate with patients and caregivers about issues such as spirituality and imminent death. I spent many restless nights wondering if I had met the needs of the patient and the caregiver. As a hospice nurse, I found myself anxious, worried, and often frustrated at not knowing how to care for the terminally ill and loved ones effectively. I learned the vast majority of interventions, symptom management, communication skills, and the physiological process of dying while I was employed as a hospice nurse. I was fortunate enough to have a hospice physician on my team who provided the needed guidance and education which molded me into an effective hospice nurse.

Currently, I am a faculty member in the ASN program where the study will be conducted. I am not associated with the instruction of the Advanced Adult and Critical Care course, ensuring no grades will be affected by participating in the study. However, I am the course coordinator and teach in a concurrent course, Mental Health Nursing. Throughout my experience as a faculty member, I have become painfully aware of a gap in ASN curricula. I am passionate about finding an appropriate means to address this gap in ASN curriculum and to improve student knowledge in regard to EOL education.

Population

This study investigated the effects of ELNEC-Undergraduate online curriculum on the population of students enrolled in the Advanced Adult and Critical Care course. The researcher is currently an Associate Professor and co-coordinator of the high-fidelity simulation laboratory at this institution where the study was implemented. Therefore, access to the population, computer labs, and the learning management system utilized at the institution were readily available. Marshall and Rossman (2016) outlined positive attributes to performing research in one's own surrounding including access to location, participants are attainable without great effort, the potential for decreased amount of time in data collection, and trustworthiness is attainable at multiple levels.

Participants were recruited from second level students, enrolled in the Advanced Adult and Critical Care course during the final semester of nursing school before graduating from the ASN program. The course has both didactic and clinical components. The current group entering into the final spring semester was made up of 52 students. A power analysis was conducted for the study utilizing GPower with an effect size of 0.5 was. The power analysis indicated the need for at least 45 students to participate. Meaning 45 participants were needed to

test the hypothesis at a significance level of .05. All students were enrolled in all three of the final semester courses: Mental Health Nursing, Adult Advanced and Critical Care, and Preparation for Licensure. The nursing cohort was made up of a mix of ages, gender, ethnicities, cultures, and religious backgrounds. The study did not have exclusion criteria. All students enrolled in Advanced Adult and Critical Care course were eligible to participate in the study.

Course Selection

The researcher purposefully chose to implement the study in the Advanced Adult and Critical Care course which is taught annually in the spring semester. The researcher obtained department chair as well as faculty support to implement the ELNEC-Undergraduate curriculum with in the course (See Appendix E, Letter of Support: Mary Hanks; Appendix F, Letter of Support: Rhonda Gonzalez; Appendix G, Letter of Support: Kelly McClure; Appendix H, Letter of Support: Katie Smith). During the first semester of nursing school, students are exposed briefly to concepts such as pain management, communication, and elimination. However, within the first semester, these concepts are covered in a broad contextual manner and not linked to EOL concepts. The Advanced Adult and Critical Care course covers the nursing curriculum's palliative and EOL concepts within its oncology module.

The ELNEC-Undergraduate curriculum was employed within the Advanced Adult and Critical Care course as a required assignment. The assignment required students to complete each of the six ELNEC-Undergraduate online modules and upload the certificate of ELNEC-Undergraduate curriculum completion into the University's learning management system, Blackboard™. The ELNEC-Undergraduate assignment was allocated 2% of the student's overall grade within the course. ELNEC-Undergraduate assignment instructions and grading rubric were placed on Blackboard™ within the Advanced Adult and Critical Care course for the

students' convenience. Fifty students submitted the required curriculum completion certificate before the submission deadline and received the 2 percentage points. One student submitted the certificate within 1 week post the assignment due date and received 1% for the assignment. One student submitted the assignment over 1 week late and received a 0 for the assignment. Both students who lost percentage points completed all six of the curriculum modules before the assigned due date. However, the students failed to submit the certificate into the designated discussion section within the course in Blackboard™ as instructed.

The ELNEC-Undergraduate online curriculum requires 6 to 10 hours to complete. Ten total hours in Advanced Adult and Critical Care course was allocated to the ELNEC-Undergraduate curriculum. In an effort to not burden the student with additional coursework, two revisions to the Advanced Adult and Critical Care course were made to compensate for the addition of the ELNEC-Undergraduate curriculum. The first revision was that the ELNEC-Undergraduate curriculum replaced the current palliative curriculum which includes EOL concepts as traditionally taught in the Advanced Adult and Critical Care course. Historically, the oncology module housed the palliative concepts which includes EOL care and was allocated 16 theoretical hours. Due to the addition of the ELNEC-Undergraduate curriculum, the oncology module was reduced to 15 theoretical hours in the spring. Therefore, 1 theoretical hour was allocated for the ELNEC-Undergraduate curriculum.

The second revision in the Advanced Adult and Critical Care course was the removal of Health Education Systems, INC (HESI) specialty exams. Historically, when enrolled in Advanced Adult and Critical Care, students were required to come to campus throughout the spring semester course to take the HESI specialty exams. The course calendar allotted approximately 9 hours throughout the semester for students to take the specialty exams.

Therefore, 9 hours were reallocated during the spring semester once the exams were omitted from the course. The ELNEC-Undergraduate curriculum replaced the hours traditional allotted to the specialty exams. The course calendar had 3 days that students were encouraged to report to the computer lab to complete the ELNEC-Undergraduate assignment. Students had access to the online ELNEC-Undergraduate curriculum and could work on the assignment independent of the assigned days if needed. Attendance was taken on the assigned computer days designated for the ELNEC curriculum. If students chose not to take advantage of the allocated days, the assignment was completed on the student's personal time. Students had 1 month to complete the assignment.

Participant Consent

The researcher did not teach in the Advanced Adult and Critical Care Course. The researcher is the course coordinator and a faculty instructor in the concurrent course, Mental Health Nursing. Therefore, students were familiar with the researcher. The researcher began recruitment by meeting with all students enrolled in the Advanced Adult and Critical Care course offered in the final semester. The recruitment meeting date was on the course calendar and conducted in the classroom setting. The meeting outlined the purpose, research design and topic, and data collection measures. Students were notified of the added benefit of receiving the ELNEC-Undergraduate certificate of completion and the importance of adding the accomplishment to their résumé. The ELNEC-Undergraduate curriculum certification of completion is a new to nursing education and has only been available since January 2017 (AACN, 2018b). Students were informed that the study was completely separate from the required assignments. Students were also notified that the ELNEC-Undergraduate curriculum would not be added to the curriculum at the student's expense.

The study consisted of a pretest and posttest, which tested student knowledge of EOL concepts. Participation in the pretest and posttest was on a voluntary basis and was not a required component of the ELNEC assignment within the course. Students were informed that data collection was obtained by pretest and posttest scores as well as demographical and ranking knowledge obtained from the assignment. Participants were not asked to partake in interviews or any other means of data collection.

The written consent included the purpose of the research, study design, level of participant involvement, risk and benefits of participation, confidentiality, withdrawal from the study, and the researcher's contact information (Sarantakos, 2005). Participants were encouraged to ask questions and express concerns. Written consent was obtained when the students had a full understanding of the process and chose to proceed as a participant. Students were not coerced to participate in the study.

Instrumentation

The instrument selected for this study was based upon the Shared Theory in Palliative Care's theoretical concept that knowledge and educational activities improve nursing knowledge, which builds competence, nursing self-confidence, and nursing intervention. The Undergraduate Nursing Palliative Care Knowledge Survey (UNPCKS) is a survey which is designed to measure knowledge of primary palliative care, which includes EOL care. The UNPCKS aided in measuring participant knowledge with respect to principles of primary palliative care, pain and symptom management, communication, and spirituality and grief.

Historically, instruments that measure knowledge attainment after the implementation of EOL educational programs were few in number. The ELNEC Knowledge Assessment Test (ELNEC-KAT) and Palliative Care Quiz for Nursing (PCQN) are two instruments that have been

implemented to measure palliative care knowledge (Davis, Lippe, Burduli, & Barbosa-Leiker, unpublished manuscript). After reviewing ELNEC-KAT and PCQN, Davis et al. (2018) reported two primary concerns: (a) the tools did not align with current evidenced-based practice for palliative care and (b) several items on the tools were geared toward advanced practice knowledge. Therefore, an instrument was needed to evaluate palliative care knowledge of undergraduate nursing students, which inspired the development of the UNPCKS instrument. This study was one of the first to utilize the UNPCKS instrument. Currently, there is no research published utilizing the instrument.

UNPCKS development utilized a four-step process and was guided by current standards of care and ELNEC-Undergraduate curriculum (Davis et al., 2018). The four-step process was (a) item generation of the preliminary measure with subject-matter experts, (b) pilot test of the new measure, (c) instrument revision and item generation using subject-matter experts, and (d) second round pilot and psychometric testing (Davis et al., 2018, p.6). Davis et al. (2018) reported conducting a pilot test with 262 nursing students. The pilot test "demonstrated good internal consistency (Cronbach's α =.70), with a 2-factor model that aligns with multiple national expectations for primary palliative care" (Davis et al., 2018, p. 2). UNPCKS is comprised of 27 multiple-choice questions derived from the ELNEC-Undergraduate curriculum. Each multiple-choice item has four options which require students to choose the correct answer. Each item is assigned a point value of 1, meaning a score of 27 indicates a perfect score.

ASN students were required to complete the ELNEC-Undergraduate curriculum as a required assignment within the Advanced Adult and Critical Care course. The study employed a one group pretest and posttest to measure the effect of the ELNEC-Undergraduate curriculum on student knowledge of palliative concepts, which includes EOL care. The researcher obtained

permission from the authors, Dr. Megan Lippe and Dr. Andra Davis, of UNPCKS to implement the tool as an evaluative instrument (see Appendix I: UNPCKS Permission for Utilization). Participation in the UNPCKS pretest and posttest was strictly voluntary and was not included in the required assignment.

UNPCKS was administered to students as a pretest and posttest with slight variations. At the beginning of the UNPCKS pretest, students were asked to provide demographic information which included age, gender, ethnicity, and respond to four yes-or-no questions pertaining to pre-existing death experience with a patient, friend, loved one, or in a healthcare setting (see Appendix B, Pretest: UNPCKS with Demographic and Pre-existing Experience Items). The UNPCKS posttest concluded by asking students to use a Likert-type scale to rank their perceived knowledge attainment from the ELNEC-Undergraduate curriculum and a question requiring students to explain how they would utilize knowledge gained from ELNEC-Undergraduate curriculum in future nursing practice (see Appendix C, Posttest: UNPCKS with Perceived Knowledge Attainment Items). The last question was not analyzed for this study and will be utilized in future research.

Developing Study Constructs

The researcher developed four constructs that were investigated throughout the study. The researcher used current research, the ELNEC-Undergraduate curriculum, and the UNPCKS to create the constructs for the study. After an extensive review of literature, the researcher recognized common themes throughout the research. Research indicated that students express the need for further education in pain management, communication, and spirituality, which includes grief (Ashley & Fasolino, 2016; Boswell et al., 2013; Conner et al., 2014; Croxon et al., 2017; Jansen et al., 2016). Reviewing the primary palliative concept which includes EOL care

addressed within the ELNEC-Undergraduate curriculum only further confirmed the need for additional education in principles of primary palliative care, pain and symptom management, communication, and spirituality, which includes grief. The researcher then reviewed the UNPCKS instrument and divided the test items into one of the four study constructs: principles of primary palliative care, pain and symptom management, communication, and spirituality and grief. Appendix D, Breakdown of Constructs and UNPCKS Item Topics, provides an overview of the constructs and the corresponding concepts from the UNPCKS instrument.

Table 3.2

Breakdown of Item Number Into Constructs

Construct	UNPCKS Item Number
Principles of Primary Palliative Care	1, 4, 10, 11, 14, 16, 17
Pain and Symptom Management	2, 13, 20, 21, 22, 26, 27
Communication	3, 7, 18, 19, 23
Spirituality and Grief	5, 6, 8, 9, 12, 15, 24, 25

Data Collection

For the study, data collection occurred by means of an evaluative instrument. Data were in the form of responses to the instrument at pretest and posttest. The pretest and posttest were administered in the nursing building in assigned computer labs. This environment was familiar to the students. Each semester students are assigned to a computer lab for all testing purposes. Two computer labs were utilized to administer the pretest and posttest. Labs were proctored by the nursing faculty which is a protocol for all testing. Data collection was conducted through

Blackboard™. This data collection process is familiar to students as all nursing tests are computerized and housed within Blackboard™.

To provide anonymity, the researcher randomly assigned each participant to a number. The number was based on the number of students enrolled in the study. Forty-nine students consented to participate in the study. Therefore, participants were randomly assigned a number from 1-49. A master list was kept by the researcher to link the participants to the assigned number. Assigning participants to a number allowed the researcher to assess the effectiveness of the ELNEC-Undergraduate curriculum by the participant as well as a cohort for future analysis. Participants' pretest and posttest scores were transferred from Blackboard™ to an Excel spreadsheet. The Excel spreadsheet did not identify the participants by name but by the preassigned number given to participants. The researcher had access to and stored data in the institution's BOX (encrypted cloud storage) to ensure the security of files. All data were maintained electronically with computer password protection. The password was known only to the researcher, and all collected data will be destroyed or deleted after 7 years of the study's conclusion. The steps for data collection were as follows:

1. The first day of the Spring semester, students were informed of the ELNEC assignment as well as corresponding dates for the assignment timeframe by the course coordinator for the Advanced Adult and Critical Care course.
2. The researcher conducted a participant recruitment session which included an assignment overview, an overview of the study which included volunteer participation and written consent was obtained from participants who volunteered to take the pretest and posttest.

3. The pretest was administered immediately following obtaining written consent. All students including participants and non-participants were given access to the ELNEC-Undergraduate curriculum following the administration of the pretest.
4. The researcher randomly assigned the students to a number for anonymity.
5. Pretest data were transferred to an Excel spreadsheet and housed in the institution's Box for security.
6. The posttest was administered the day after the ELNEC-Undergraduate assignment was due.
7. Posttest data were transferred to an Excel spreadsheet and housed in the institution's Box for security.
8. Data analysis began.

Data Analysis

The Shared Theory in Palliative Care seeks to explain the phenomenon of competence development with respect to a nurse's growth in confidence and nurse self-competence with respect to the administration of palliative care curricula, which includes EOL. The theory indicated that confidence and nurse self-competence are developed by means of educational and experiential activities. Therefore, knowledge builds competence. The research design embedded pretest-posttest feature provided the ability to evaluate student knowledge with respect to EOL care.

Paired Samples *t*-Test

The study conducted data analysis in the form of a paired samples *t*-test in order to address Research Question 1. A *t*-test is utilized by the researcher "when two means are being compared with each other" (Ravid, 2011, p. 144). The UNPCKS provided an instrument for

collecting and measuring the data collected in this research study. Based upon the theory that knowledge is gained over a period of time with an intervention placed in the middle, a paired samples *t*-test was the most appropriate strategy for analyzing the data collected in this study.

The paired samples *t*-test compared the scores of the pretest with the scores of the posttest in order to determine if the intervention produced an improvement in knowledge with respect to palliative care, which includes EOL care. Due to the statistical significance on the pretest and posttest scores, a Cohen's D effect size was calculated to determine whether the increase was small, medium, large, or very large.

Research Question 1 had four sub-questions, which addressed the constructs of the study. Paired samples *t*-test is a within-sample design that uses mean scores to compare the level of constructs between the pretest and posttest administration of an instrument (Vogt, Vogt, Gardner, & Haeffele, 2014). This study utilized a paired samples *t*-test to measure the effect of the ELNEC-Undergraduate curriculum on student EOL care knowledge. The researcher used the same method to investigate the effect of the intervention on knowledge within the identified construct: principles of primary palliative care, pain and symptom management, communication, and spirituality including grief.

Linear Regression

Regression analysis is implemented when the researcher is investigating relationships and predictions between independent and dependent variables (O'Dwyer & Benauer, 2014). According to Ravid (2011), "prediction is based on assumptions that when two variables are correlated" one variable can be used to predict another (p. 130). Predictions can be statistically sound when the technique of regression is implemented (Ravid, 2011). Simple, multiple, and hierarchical linear regressions were implemented in this study to analyze Research Question 2.

Simple regression is utilized "when one variable is used to predict another" (Ravid, 2011, p. 130). Simple regression was utilized with each demographic component, which included age, ethnicity, gender, and pre-existing experiences of the participants to predict the pretest and posttest scores. Ravid (2011) stated multiple linear regression "is employed when two or more variables are used to predict one criterion variable" (Ravid, 2011, p. 139). With the assumption that the independent variable correlates with the dependent variable, a prediction is more accurate with a higher correlation. For this study, the independent variables for the multiple linear regression included age, ethnicity, gender, and pre-existing experiences and the dependent variables were the pretest and posttest scores. Hierarchical linear regression is implemented to investigate if variable(s) will have the ability to predict the outcome of the dependent variable(s) (Leech, Barrett, & Morgan, 2013). This study implemented hierarchical linear regression to investigate whether the study's pre-existing experience variables have the ability to predict knowledge with respect to EOL care on pretest and posttest scores.

Descriptive Analysis

Data for Research Question 3 was obtained through the utilization of a Likert-type scale and results were analyzed utilizing descriptive statistics. Quantitative studies implement descriptive statistics to describe a quantitative description (Trochim, 2006) clearly. Descriptive data are utilized to infer what the population may be thinking (Trochim, 2006). Four questions on the posttest asked participants to rate if their knowledge had improved within the four constructs utilized for the study: principles of primary care, pain and symptom management, communication, and spirituality and grief. A fifth question asked participants to rate if the ELNEC-Undergraduate curriculum had prepared them to provide EOL care in the future. Each

question employed the Likert-type scale system to rate the participant's responses and are presented in Chapter IV.

Summary

In summary, this chapter has addressed the quantitative methodology utilized to implement the study, the one group pretest-posttest design, the setting of the study, participants, data collection, and analysis. Chapter IV outlines the results of the study. Chapter V concludes the dissertation by interpreting results and providing recommendations.

CHAPTER IV

RESULTS

The purpose of this study was to determine if implementing an educational intervention would improve student knowledge in regard to end of life (EOL) concepts. This study implemented a quantitative methodology with a pretest/posttest design. This chapter provides a description of the demographics and pre-existing experiences of the participants and presents the results obtained from the study based on each research question.

Demographic Information and Pre-existing Experiences of Participants

All 52 students enrolled in Advanced Adult Health and Critical Care Course were given the opportunity to participate in this study. Of the 52 students recruited for the study, 49 participants consented to participate with a 94% participation rate. Therefore, three students did not choose to participate in the study. All 49 participants participated in the pretest and posttest survey. The pretest survey collected demographic information and pre-existing experiences with death and EOL care from each participant.

Variables for this study include age, ethnicity (White, American Indian, Hispanic, African American, Asian/Pacific/Islander), gender, participation in EOL care, loss of a loved one within the last year, cared for a loved one who died, and previous work experience in a healthcare setting. Participants were asked to identify their age range (19-25 or 26-plus), ethnicity, and gender. The predominant age range for participants was 19-25 (76%). Two ethnic groups were identified: African American (65%) and White (35%). The overwhelming majority

of participants identified as female (90%) with the remaining identifying as male (10%). Table 4.1 below provides the demographic information of the participants of the study.

Table 4.1

Demographical Information Provided by Participants of the Study

Questions	Responses	Number	Percentage
Age	19-25	37	75.5
	26-plus	12	24.6
Ethnicity	African American	32	65.3
	White	17	34.7
Gender	Female	44	89.8
	Male	5	10.2

The pretest survey explored the participant's pre-existing experiences with EOL care. Participants responded with *yes* or *no* to the four questions that explored pre-existing experience with EOL. Participants had a variety of experiences with EOL care as well as with the loss of someone close to the participant. The majority of participants (61%) responded *no* to having participated in providing care to patients at the EOL. Almost half of the participants (49%) reported having lost a loved one within the last year. Over half of the participants (59%) had provided care to a loved one who died. Less than half of the participants (34%) had previous work experience in a healthcare setting. Table 4.2 below provides the pre-existing questions and responses from participants.

Table 4.2

Pre-existing Information Provided by Participants in the Study

Questions	Responses	Number	Percentage
Have you participated in caring for patients at the end of life?	Yes	19	38.8
	No	30	61.2
Have you experienced the loss of a loved one (friend or family member) within the last year?	Yes	24	49
	No	25	51
Have you cared for a loved one who died (friend or family member)?	Yes	29	59.2
	No	20	40.8
Do you have previous work experience in the healthcare setting (excluding nursing school experiences)?	Yes	17	34.7
	No	32	65.3

Statistical Analysis Results

This study analyzed three research questions. Research Question 1 addressed the students' knowledge attainment after the educational intervention, ELNEC-Undergraduate curriculum. Research Question 1 has four sub-questions which addressed the constructs of the study: principles of primary palliative care, pain and symptom management, communication, and spirituality and grief. The second question addressed the effect of participant demographics and pre-existing experiences on student knowledge with respect to EOL concepts. The third research question focused on the participant's perceived effect of the intervention on knowledge gained or not gained. The following presents a statistical analysis of the data obtained for each research question.

Research Question 1

Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to EOL care? A paired samples *t*-test was performed to compare means between the pretest and posttest scores to determine if the intervention improved students' knowledge with respect to EOL care. The Undergraduate Nursing Palliative Care Knowledge Survey (UNPCKS) was the evaluative instrument implemented for data collection, which is comprised of 27 multiple choice items. Scores on the pretest and posttest could range from 0-27, meaning if a participant scored a 0, no correct responses were chosen; a score of 14 correct responses would equate to a score of 52%; and a score of 27 would indicate that the participant answered 100% of the questions correctly.

The results of the paired samples *t*-test indicated that the ELNEC-Undergraduate curriculum improved student knowledge with respect to EOL care (pretest-M=20.00, SD=2.79, 74% correct, posttest-M=22.04, SD=2.29, 81% correct, p=.0001). The paired samples *t*-test indicated that the students' scores on the posttest had, on average, a significantly higher score than scores on the pretest, t (48) = 5.98, p = .0001, d = .80. The difference was statistically significant, and the effect size was large, based upon Cohen's (1988) guidelines for research in the social sciences. It is important to note that, on average, student scores increased by a letter grade from 74% (C) on the pretest to 81% (B) on the posttest. This is an average of 7 percentage point difference between pretest and posttest scores.

Table 4.3

Statistical Analysis for Pretest/Posttest Scores on Knowledge of End of Life Care

Variable	M	SD	T	Df	P	D
Pretest	20.00	2.79	5.98	48	.0001	.80
Posttest	22.04	2.29				

The null hypothesis for Research Question 1 was *the ELNEC-Undergraduate online curriculum will not produce an increase in student knowledge with respect to EOL care*. The posttest scores were significantly higher than the pretest scores. The difference is a large effect size, *d*= .8. Therefore, the null hypothesis for Research Question 1 was rejected.

Research Question 1a: Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to the principles of primary palliative care? A paired sample *t*-test was performed to compare means between the pretest and posttest scores to determine if the intervention improved students' knowledge with respect to principles of primary palliative care. All 27 UNPCKS items were divided into the four constructs developed for this study. The construct of principles of primary palliative care was made up of seven items (UNPCKS item numbers: 1, 4, 10, 11, 14, 16, 17). The mean range for this construct was 1-2. One, meaning the construct items were answered incorrectly and 2 meaning that the items were answered correctly.

The results of the paired samples *t*-test indicated that the ELNEC-Undergraduate curriculum improved student knowledge with respect to principles of primary palliative care (pretest-M= 1.70, SD=.39, posttest-M=1.79, SD=.32), p=.0001 (see Table 4.4). On the pretest, the mean of 1.70 indicates that 70% of the items designated within this construct were answered correctly. The posttest mean of 1.79 indicates that 79% of the items designated within this construct were answered correctly. On average a 9% increase in knowledge with respect to principles of primary palliative care was noted after the intervention was implemented. The paired samples *t*-test indicated that the students' scores on the posttest had, on average, a significantly higher score than scores on the pretest, t (48) = 4.82, p = .0001, d = .27. The

difference was statistically significant and the effect size was small, based upon Cohen's (1988) guidelines for research in the social sciences.

Table 4.4

Statistical Analysis for Pretest/Posttest Scores for Construct: Principles of Primary Palliative Care

Variable	M	SD	T	df	P	D
Pretest	1.70	.39	4.82	48	.0001	.27
Posttest	1.79	.32				

The null hypothesis for Research Question 1a was *the ELNEC-Undergraduate online curriculum does not produce an increase in student knowledge with respect to the principles of primary palliative care*. The principles of primary palliative care posttest scores were significantly higher than the pretest scores. The difference was a small effect size, *d*= .27. Therefore, the null hypothesis for Question 1a was rejected.

Research Question 1b: Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to pain and symptom management in EOL care? A paired sample *t*-test was performed to compare means between the pretest and posttest scores to determine if the intervention improved students' knowledge with respect to pain and symptom management in EOL care. All 27 UNPCKS items were divided into the four constructs developed for this study. The construct of pain and symptom management was made up of seven items (UNPCKS item numbers: 2, 13, 20, 21, 22, 26, 27). The mean range for this construct was 1-2. One, meaning the construct items were answered incorrectly and 2 meaning that the items were answered correctly.

The results of the paired samples *t*-test indicated that the ELNEC-Undergraduate curriculum improved student knowledge with respect to pain and symptom management (pretest-

M=1.70, SD=.28, posttest-M=1.76, SD=.28), p=.0001 (see Table 4.5). On the pretest, the mean of 1.70 indicates that 70% of the items designated within this construct were answered correctly. The posttest mean of 1.76 indicates that 76% of the items designated within this construct were answered correctly. On average, a 6% increase in knowledge with respect to pain and symptom management was noted after the intervention was implemented. The paired samples *t*-test indicated that the students' scores on the posttest had on average a significantly higher score than scores on the pretest, t (48) = 4.24, p = .0001, d = .21. The difference was statistically significant and the effect size was small, based upon Cohen's (1988) guidelines for research in the social sciences.

Table 4.5

Statistical Analysis for Pretest/Posttest Scores for Construct: Pain and Symptom Management

Variable	M	SD	T	Df	P	d
Pretest	1.70	.28	4.24	48	.0001	.21
Posttest	1.76	.28				

The null hypothesis for research question 1b was *the ELNEC-Undergraduate online curriculum does not produce an increase in student knowledge with respect to pain and symptom management in EOL care.* The posttest scores were significantly higher than the pretest scores. The difference is a small effect size, *d*= .21. Therefore, the null hypothesis for question 1b was rejected.

Research Question 1c: Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to communication in EOL care? A paired samples *t*-test was performed to compare means between the pretest and posttest scores to determine if the intervention improved students' knowledge with respect to communication in

EOL care. All 27 UNPCKS items were divided into the four constructs developed for this study. The construct of communication was made up of five items (UNPCKS item numbers: 3, 7, 18, 19, 23). The mean range for this construct was 1-2; 1 meaning the construct items were answered incorrectly and 2 meaning that the items were answered correctly.

The results of the paired samples *t*-test indicated that the ELNEC-Undergraduate curriculum improved student knowledge with respect to communication (pretest-M= 1.86, SD=.22, posttest-M=1.96, SD=.13), p=.0001. On the pretest, the mean of 1.86 indicates that 86% of the items designated within this construct were answered correctly. The posttest mean of 1.96 indicates that 96% of the items designated within this construct were answered correctly. On average, a 10% increase in knowledge with respect to communication was noted after the intervention was implemented. The paired samples *t*-test indicated that the students' scores on the posttest had, on average, a significantly higher score than their scores on the pretest, t (48) = 4.83, p = .0001, d = .58 (see Table 4.6). The difference was statistically significant, and the effect size was medium, based upon Cohen's (1988) guidelines for research in the social sciences.

Table 4.6

Statistical Analysis for Pretest/Posttest scores for Construct: Communication

Variable	M	SD	T	df	P	d
Pretest	1.86	.22	4.83	48	.0001	.58
Posttest	1.96	.13				

The null hypothesis for Research Question 1c was *the ELNEC-Undergraduate online curriculum does not produce an increase in student knowledge with respect to communication in EOL care*. The posttest scores were significantly higher than the pretest scores. The difference is a medium effect size, *d*= .51. Therefore, the null hypothesis for Question 1c was rejected.

Research Question 1d: Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to spirituality and grief in EOL care? A paired samples *t*-test was performed to compare means between the pretest and posttest scores to determine if the intervention improved students' knowledge with respect to spirituality and grief in EOL care. All 27 UNPCKS items were divided into the four constructs developed for this study. The construct of spirituality and grief was made up of eight items (UNPCKS item numbers: 5, 6, 8, 9, 12, 15, 24, 25). The mean range for this construct was 1-2; 1 meaning the construct items were answered incorrectly and 2 meaning that the items were answered correctly.

The results of the paired samples *t*-test indicated that the ELNEC-Undergraduate curriculum improved student knowledge with respect to spirituality and grief (pretest-M= 1.70, SD=.32, posttest-M=1.80, SD=.26), p=.0001. On the pretest, the mean of 1.70 indicates that 70% of the items designated within this construct was answered correctly. The posttest mean of 1.80 indicates that 80% of the items designated within this construct was answered correctly. On average, a 10% increase in knowledge with respect to EOL was noted after the intervention was implemented. The paired samples *t*-test indicated that the students' scores on the posttest had on average a significantly higher score than scores on the pretest, t (48) = 4.15, p = .0001, d = .31 (see Table 4.7). The difference was statistically significant and the effect size was between small and medium, based upon Cohen's (1988) guidelines for research in the social sciences.

Table 4.7

Statistical Analysis for Pretest/Posttest Scores for Construct: Spirituality and Grief

Variable	M	SD	T	df	P	D
Pretest	1.70	.32	4.15	48	.0001	.31
Posttest	1.80	.26				

The null hypothesis for Research Question 1d was *the ELNEC-Undergraduate online curriculum does not produce an increase in student knowledge with respect to spirituality and grief in EOL care*. The posttest scores were significantly higher than the pretest scores. The difference was a small to medium effect size, *d*= .31. Therefore, the null hypothesis for Question 1d was rejected.

Research Question 2

Does age, ethnicity, gender, and pre-existing experiences of the participants in the study affect the students' knowledge with respect to EOL care?

Correlation matrix for a regression model: Pretest scores. The following correlation table provides two important values: "the value of Pearson's correlation coefficient between every pair of variables" and "the one-tailed significance of each correlation" (Field, 2009, p. 233). A correlation matrix is useful when examining the association between predictors and outcomes. The matrix identified three significant relationships. The matrix shows significant relationships between age and ethnicity (r=.03, p=.04), age and participation in EOL care (r=.03, p=.01), and age and previous work experience (r=.30, p=.00). Table 4.8 provides the complete correlation matrix for the pretest.

Correlation matrix for a regression model: Posttest scores. The following table demonstrates the correlation matrix for the posttest after the End-of-Life Nursing Education Consortium-Undergraduate (ELNEC-Undergraduate) curriculum was implemented. The matrix identified three significant relationships. The matrix shows significant relationships between age and ethnicity (r=.08, p=.04), age and participation in EOL care (r=.14, p=.01), and age and previous work experience (r=.25, p=.00). Table 4.9 provides the complete correlation matrix for the pretest.

Table 4.8

Correlation Matrix: Pretest

		pretest score	Age	Ethnicity	Gender	Participated in end of life care	Loss of loved one	Cared for love one who died	Work experience in healthcare setting
Pearson Correlation	pretest score	1.00	**.03**	**.20***	**.15**	**.03***	**.02**	**.09**	**.30***
	Age	.03	1.00	.26	.04	.33	.01	.09	.68
	Ethnicity	.20	.26	1.00	.01	.20	.03	.19	.05
	Gender	.15	.04	.01	1.00	.01	.07	.13	.04
	Participated in end of life care	.03	.33	.20	.01	1.00	.14	.24	.21
	Loss of loved one	.02	.02	.03	.07	.14	1.00	.15	.06
	Cared for love one who died	.09	.09	.19	.13	.24	.15	1.00	.26
	Work experience in healthcare setting	.30	.68	.05	.04	.21	.06	.26	1.00

Key: * p<.05

Table 4.9

Correlation Matrix: Posttest

		posttest score	Age	Ethnicity	Gender	Participated in end of life care	Loss of loved one	Cared for love one who died	Work experience in healthcare setting
Pearson Correlation	posttest score	1.000	.01	.08*	.07	.14*	.09	.05	.25*
	Age	.01	1.00	.26	.04	.33	.01	.09	.68
	Ethnicity	.08	.26	1.00	.01	.20	.03	.19	.05
	Gender	.07	.04	.01	1.00	.01	.07	.13	.04
	Participated in end of life care	.14	.33	.20	.01	1.00	.14	.24	.212
	Loss of loved one	.09	.012	.0	.07	.14	1.00	.15	.06
	Cared for love who one died	.05	.09	.19	.13	.24	.15	1.00	.26
	Work experience in healthcare setting	.25	.68	.05	.04	.21	.06	.26	1.00

Key: * p<.05

Simple linear regression. Simple linear regression was conducted to investigate how well all study variables (age, ethnicity, gender, participated in EOL care, experienced a loss of a loved one, cared for a loved one who died, and work experience in a healthcare setting) predicted pretest knowledge of EOL care. The p-value of .05 was divided by the number (7) of independent variables. Therefore, the p-value for the multiple linear regression models was .007. The independent variables age, ethnicity, gender, participated in EOL care, loss of a loved one, care for a loved one who died, and previous work experience in the healthcare setting were not significant predictors of pretest or posttest knowledge of EOL care (see Table 4.10).

Table 4.10

Simple Linear Regression for all Variables

Variable	Mean	Standard Deviation	P	R-Squared
Age:				
Pretest	1.24	.43	.82	N/A
Posttest	1.24	.43	.94	N/A
Ethnicity:				
Pretest	1.39	.49	.18	N/A
Posttest	1.39	.49	.59	N/A
Gender:				
Pretest	1.90	.31	.32	N/A
Posttest	1.90	.31	.67	N/A
Participated in End of Life Care:				
Pretest	1.61	.49	.84	N/A
Posttest	1.61	.49	.33	N/A
Experienced a Loss of a Loved One:				N/A
Pretest	1.15	.51	.92	
Posttest	1.15	.51	.54	N/A
Cared for a Loved One Who Died:				N/A
Pretest	1.41	.50	.54	
Posttest	1.41	.50	.73	N/A
Work Experience in Healthcare Setting:				
Pretest	1.65	.48	.04	N/A
Posttest	1.65	.48	.08	N/A

Multiple linear regression. This study conducted multiple linear regressions to determine if demographics and pre-existing experiences with EOL variables could predict knowledge with respect to EOL care on pretest and posttest score. Ravid (2011) stated multiple linear regression "is employed when two or more variables are used to predict one criterion variable" (p. 139). When variables are involved in multiple linear regression multicollinarty is not an uncommon finding (Field, 2009). According to Morgan, Leech, Gloeckner, and Barrett (2013), multicollinearity "occurs when there are high intercorrelations among some set of the predictor variables" meaning "multicollinearity happens when two or more predictors are measuring overlapping or similar information" (p. 164). Variance inflation factors (VIF) and tolerance can assist in detecting the presence of multicollinearity in regression analysis (Field, 2009). According to Field (2009), "VIF indicates whether a predictor has a strong linear relationship with the other predictor(s)" and tolerance if the reciprocal (p. 224). For this study, a VIF value of 1.2 and a tolerance value of .8 were employed. Meaning a VIF greater than 1.2 and a tolerance less than .8 indicates multicollinearity.

Multiple linear regression for pretest: Seven variable model. Simultaneous multiple regression was conducted to investigate the best prediction of pretest knowledge of EOL care. The combination of variables to predict knowledge of EOL care from age, ethnicity, gender, participated in EOL care, loss of a loved one, care for loved one who died, and work experience in the healthcare setting was not statistically significant, $F(7,41) = 1.30$. The adjusted R^2 value was .04. This indicates that only 4% of the variance in the pretest scores was explained by the model. This model demonstrates that the p-value of .27 is larger than .05 rendering the results as not statistically significant (Table 4.11). The tolerance and VIF levels indicated that

multicollinearity existed among the following variables: age, care for a loved one who died, and work experience in the healthcare setting.

Table 4.11

Multiple Linear Regression Summary for Pretest: Seven Variable Model

Variable	Mean	Standard Deviation	*β*	*SE B*	Tolerance	VIF	P	R-Squared
Age	1.24	.43	1.5	1.38	.43	2.32	.27	N/A
Ethnicity	1.39	.49	.99	.87	.85	1.18		
Gender	1.90	.31	1.19	1.32	.95	1.05		
Participated in EOL care	1.61	.50	.256	.88	.83	1.21		
Loss of a loved one	1.51	.51	.31	.80	.96	1.05		
Cared for a loved one who died	1.41	.50	.26	.8	.79	1.26		
Work experience in healthcare setting	1.65	.48	2.56	1.212	.46	2.18		

Multiple linear regression for posttest: Seven variable model. Simultaneous multiple regression was conducted to investigate the best prediction of posttest knowledge of EOL care. The combination of variables to predict knowledge of EOL care from age, ethnicity, gender, participated in EOL care, loss of a loved one, cared for a loved one who died, and work experience in the healthcare setting was not statistically significant, $F(7,41) = 1.03$. This model demonstrates that the p-value of .42 is larger than .05 rendering the results as not statistically significant. The adjusted R^2 value was .01 (see Table 4.12). This indicates that only 1% of the

variance in the posttest scores was explained by the model. The tolerance and VIF levels indicated that multicollinearity existed among the following variables: age, cared for a loved one who died, and work experience in the healthcare setting.

Table 4.12

Multiple Linear Regression Summary for Posttest: Seven Variable Model

Variable	Mean	Standard Deviation	*β*	*SE B*	Tolerance	VIF	P	R-Squared
Age	1.24	.43	1.42	1.17	.43	2.32	.42	N/A
Ethnicity	1.39	.49	.00	.72	5	1.18		
Gender	1.90	.31	.65	1.10	.95	1.05		
Participated in EOL care	1.61	.49	.67	.73	.83	1.05		
Loss of a loved one	1.51	.51	.39	.67	.96	1.04		
Cared for a loved one who died	1.41	.50	.06	.76	.79	1.26		
Work experience in the healthcare setting	1.65	.48	2.27	1.01	.46	2.18		

Multiple linear regression for pretest: Six variable model. The regression was repeated without each of the variables which exhibited multicollinearity beginning with age. Simultaneous multiple regression was conducted to investigate the best prediction of pretest knowledge of EOL care. The combination of variables to predict knowledge of EOL care from gender, ethnicity, participated in EOL care, loss of a loved one, cared for a loved one who died, and work experience in the healthcare setting was not statistically significant, $F(6,42) = 1.31$. The adjusted R^2 value was .04. This indicates that only 4% of the variance in the pretest scores

was explained by the model. This model demonstrates that the p-value of .27 is larger than .05 rendering the results as not statistically significant (see Table 4.13). None of the independent variables exhibited multicollinearity.

Table 4.13

Multiple Linear Regression Summary for Pretest: Six Variable Model

Variable	Mean	Standard Deviation	*B*	*SE B*	β	Tolerance	VIF	P	R-Squared
Ethnicity	1.39	.492	1.28	.83	.22	.94	1.07	.272	N/A
Gender	1.90	.306	1.36	1.31	.15	.97	1.03		
Participated in EOL care	1.61	.49	.01	.85	.00	.88	1.13		
Loss of a Loved One	1.51	.505	.26	.80	.05	.96	1.05		
Cared for a loved one who died	1.41	.497	.50	.87	.08	.85	1.18		
Work experience in healthcare setting	1.65	.481	1.63	.86	.28	.91	1.10		

Multiple linear regression for posttest: Six variable model. The regression was repeated without each of the variables which exhibited multicollinearity beginning with age. Simultaneous multiple regression was conducted to investigate the best prediction of posttest knowledge of EOL care. The combination of variables to predict knowledge of EOL care from race, ethnicity, EOL care, loss of a loved one, cared for a loved one who died, and work experience in the healthcare setting was not statistically significant, $F(6,42) = .94$. The adjusted R^2 value was .01. This indicates that only 1% of the variance in the posttest scores was

explained by the model. This model demonstrates that the p-value of .47 is larger than .05 rendering the results as not statistically significant (see Table 4.14). None of the independent variables exhibited multicollinearity.

Table 4.14

Multiple Linear Regression Summary for Posttest: Six Variable Model

Variable	Mean	Standard Deviation	*B*	SE B	β	Tolerance	VIF	P	R-Squared
Ethnicity	1.39	.492	.28	.70	.06	.94	1.07	.474	N/A
Gender	1.90	.306	.49	1.10	.07	.97	1.03		
Participated in EOL care	1.61	.49	.89	.71	.20	.88	1.13		
Loss of a loved one	1.51	.505	.37	.67	.08	.96	1.05		
Cared for a loved one who died	1.41	.497	.17	.72	.04	.85	1.18		
Work experience in healthcare setting	1.65	.481	1.40	.72	.29	.91	1.11		

Summary. The model consisting of age, ethnicity, gender, participated in EOL care, loss of a loved one, cared for a loved one who died, and work experience in the healthcare setting was not a good fit for predicting knowledge of EOL care on the pretest score nor on the posttest score. The seven variable model suffered from multicollinearity. Once the independent variable "age" was removed from the model, the issue of multicollinearity was corrected. However, the reduced model was not a good fit for predicting knowledge of EOL care on the pretest or the

posttest scores. Therefore, in conclusion, age, ethnicity, gender, and pre-existing experiences as a model do not affect the students' knowledge with respect to EOL care on a pretest or a posttest basis. The next consideration was to conduct hierarchical linear regression in order to investigate if independent variables significantly predicted knowledge of EOL care on pretest scores or posttest scores.

Hierarchical regression model. Hierarchical linear regression "is an appropriate method to use when the researcher has a priori ideas about how the predictors go together to predict the dependent variable" (Leech, Barrett, & Morgan, 2015, p. 125). Literature suggested that EOL experiences exerted a more powerful influence on knowledge of EOL care (Adesina et al., 2014; Chow et al., 2014). Therefore, this study investigated four potential pre-existing experiences (participated in EOL care, loss of a loved one, cared for a loved one who died, and work experience in the healthcare setting) students could have with death and EOL care and how the experiences could potentially predict knowledge on pretest and posttest scores. A hierarchal linear regression was conducted utilizing all variables as well as a series of hierarchical linear regressions placing demographic variables in step one and the remaining four pre-existing experiences in step two. These series of hierarchical linear regressions were conducted on pretest and posttest scores.

Hierarchical linear regression: Demographics regressed with pre-existing experiences (pretest). A hierarchal linear regression was conducted to determine whether pre-existing experiences as a group significantly predicted knowledge of EOL care prior to an intervention. Step one was comprised of the demographic variables (age, ethnicity, and gender). Step two was comprised of the pre-existing experience variables (participated in EOL care, loss of a loved one, cared for a loved one who died, and work experience in the healthcare setting).

The results indicate that step one (age, ethnicity, and gender) was not a significant predictor of knowledge of EOL care prior to the intervention, F(3,45)=1.10. This model demonstrates that the p-value of .36 is larger than .05 rendering the results as not statistically significant. Step two did not improve the predictive capabilities of step one to the point of significant predictability of knowledge of EOL care, F(4,41)=1.42. Step two improved with a p-value of .25, however not to the point of significance because the p-value remained larger than .05 (see Table 4.15).

Table 4.15

Hierarchical Linear Regression: Demographics Regressed With Pre-existing Experiences (Pretest)

Step	R	R Squared	Adjusted R Squared	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.26	.07	.01	2.78	.07	1.10	3	45	.36
2	.43	.18	.04	2.73	.11	1.42	4	41	.25

Hierarchical linear regression: Demographics regressed with pre-existing experiences (posttest). A hierarchal linear regression was conducted to determine whether pre-existing experiences as a group significantly predicted knowledge of EOL care after the implementation of the intervention. Step one was comprised of the demographic variables (age, ethnicity, and gender). Step two was comprised of the pre-existing experience variables (participated in EOL care, loss of a loved one, cared for a loved one who died, and work experience in the healthcare setting). The results indicate that step one (age, ethnicity, and gender) was not a significant predictor of knowledge of EOL care after the implementation of the intervention, F(3,45)=.17. This model demonstrates that the p-value of .92 is larger than .05 rendering the results as not statistically significant (Table 4.16). Step two did not improve the

predictive capabilities of step one to the point of significant predictability of knowledge of EOL care, F(4,41)=1.67. Step two improved with a p-value of .18, however not to the point of significance because the p-value remained larger than .05.

Table 4.16

Hierarchical Linear Regression: Demographics Regressed With Pre-existing Experiences (Posttest)

Step	R	R Squared	Adjusted R Squared	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.11	.011	.06	2.35	.011	.172	3	45	.92
2	.39	.150	.01	2.29	.139	1.67	4	41	.18

Research Question 3

How did participants in the study perceive the effect of the ELNEC-Undergraduate online curriculum on their knowledge gained or not gained with respect to EOL care?

A Likert-type rating scale was utilized to obtain data for Research Question 3. Participants were asked four questions on the posttest that related to their perceived knowledge attainment after the intervention among the constructs for the study: principals of primary palliative care, pain and symptom management, communication, and spirituality and grief.

Participants (*n*=49) rated five questions, using a Likert-type scale, that addressed their perceived knowledge attainment with respect to the study's constructs and their preparedness to provided EOL care on the posttest. The first four questions addressed the constructs of the study. The Likert-type scale utilized for the first four questions were as follow: strongly agree, agree, undecided, disagree, and strongly disagree. When asked to rate if the ELNEC-Undergraduate online curriculum improved student knowledge with respect to the principles of primary palliative care and spirituality and grief, 57% of students indicated strongly agree, 33% indicated

agree, 6% were undecided, 2% disagreed, and 2% strongly disagreed. Therefore, 90% of participants felt that the intervention improved their knowledge in EOL with respect to principles of primary palliative care and spirituality and grief.

When asked to rate if the ELNEC-Undergraduate online curriculum improved their knowledge with respect to pain and symptom management, 57% of students strongly agree, 35% agreed, 6% were undecided, no one rated disagree, and 2% rated strongly disagree. Ninety-two percent of participants felt that the intervention improved their knowledge in EOL with respect to pain and symptom management. When asked to rate if the ELNEC-Undergraduate online curriculum improved their knowledge with respect to communicating, this construct received the highest ranking. Fifty-seven percent of the students ranked this as strongly agree, 37% ranked this as agree, 2% were undecided, 2% disagreed, and 2% strongly disagreed. Overall, 94% of the participants felt that the intervention improved their knowledge in EOL with respect to communication.

One question asked students to rate if working through the ELNEC-Undergraduate curriculum prepared them to provide EOL care using the Likert-type ratings of very prepared, somewhat prepared, undecided, somewhat undecided, and not at all prepared. Twenty-seven percent of participants felt very prepared, 61% felt somewhat prepared, and 12% were undecided if the intervention prepared them to provide EOL care. The majority of participants at 88% felt very prepared or somewhat prepared to provide care.

Participants' ratings indicate that students felt they obtained knowledge in all aspects of EOL care after the implementation of the ELNEC-Undergraduate curriculum. An overwhelming majority (90% or higher) of the participants believed they had obtained knowledge in all four constructs of the study as well as 88% who felt very prepared or somewhat prepared to provided

EOL care. These results also indicated that participants felt confident that they had obtained knowledge as well. The following table (Table 4.17) provides the posttest questions and the participant ratings.

Table 4.17

Participants Ratings of Knowledge Attainment (n=49)

Questions	Strongly agree N(%)	Agree N(%)	Undecided N(%)	Disagree N(%)	Strongly Disagree N(%)
Do you think the ELNEC-Undergraduate online curriculum improved your knowledge with respect to the principles of primary palliative care?	28(57%)	16(33%)	3(6%)	1(2%)	1(2%)
Do you think the ELNEC-Undergraduate online curriculum improved your knowledge with respect to pain and symptom management in end of life concepts?	28(57%)	17(35%)	3(6%)	0	1(2%)
Do you think the ELNEC-Undergraduate online curriculum improved your knowledge with respect to communication in end of life concepts?	28(57%)	18(37%)	1(2%)	1(2%)	1(2%)
Do you think the ELNEC-Undergraduate online curriculum improved your knowledge with respect to spirituality and grief in end of life concepts?	28(57%)	16(33%)	3(6%)	1(2%)	1(2%)
Question	Very Prepared N(%)	Somewhat Prepared N(%)	Undecided N(%)	Somewhat Unprepared N(%)	Not at All Prepared N(%)
After working through the ELNEC-Undergraduate curriculum, how prepared	13(27%)	30(61%)	6(12%)	0	0

do you feel to provide end of life care?					

Summary

Chapter IV has presented statistical data for all research questions. Paired samples *t*-test, multiple and simple regression, and descriptive analysis have been implemented to analyze data obtained from the study. Data were collected and determined that the ELNEC-Undergraduate intervention significantly improved student knowledge of EOL concepts at the Associate degree level. Chapter V will discuss the findings of the study in greater detail.

CHAPTER V

DISCUSSION

The demand for end of life (EOL) care is increasing and will continue to increase as the United States population of aging Americans increases (Population Reference Bureau, 2016; Tedder et al., 2017). This increased need for EOL care calls for healthcare professionals, including nurses, to be knowledgeable and competent EOL care providers. It is imperative to nursing education that EOL concepts be addressed to meet the educational needs of students and nurses. The best method of implementing EOL curriculum into nursing education continues to be a debate among nursing educators (Carman et al., 2016; Dickinson, 2007).

The purpose of this study was to determine if the End of Life Nursing Education Consortium-Undergraduate (ELNEC-Undergraduate) online curriculum was an effective means of improving student knowledge of primary palliative care, which includes EOL care, at the Associate degree level. A pretest/posttest design was implemented to measure student knowledge of EOL concepts. The Undergraduate Palliative Care Knowledge Survey (UNPCKS) was implemented to measure student knowledge before and after the intervention. Unfortunately, there is no published research on the effectiveness of the ELNEC-Undergraduate curriculum at this time. Therefore, this chapter will strive to compare data based on what EOL research is available and stress the importance of EOL education, which is endorsed by palliative care experts and organizations. This chapter will discuss the results, implications, and limitations of the study and provide recommendations for future research.

Research Question 1

Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to EOL care?

The ELNEC-Undergraduate curriculum was developed by the ELNEC project to meet a growing need for palliative and EOL nursing education at the undergraduate level (Ferrell et al., 2016). Due to the infancy of the program, there is no current published research on the effectiveness of the ELNEC-Undergraduate curriculum. Literature review revealed that very few quantitative studies exist which focus on EOL education and care. However, the most abundant ELNEC research pertained to the ELNEC-Core curriculum, which was the first curriculum developed by the ELNEC project (Ferrell et al., 2015). This current study was conducted to evaluate the effectiveness of the ELNEC-Undergraduate curriculum, which will address a gap in EOL research.

A paired samples *t*-test was conducted to determine if there was a significant difference between students' pretest and posttest scores after the implementation of ELNEC-Undergraduate curriculum into an Associate degree nursing program. The results of the paired samples *t*-test indicated that students' posttest scores were higher than their pretest scores. The mean scores went from 74% on the pretest to 82% on the posttest. On average "C' students improved to "B". Based on these findings, the ELNEC-Undergraduate curriculum has the potential to address many concerns within EOL nursing education. First, this intervention could effectively address the lack of EOL education among nursing curricula by providing a standardized EOL nursing curriculum that could be implemented across all levels of nursing education. Secondly, the ELNEC-Undergraduate curriculum is a standardized curriculum that removes the burden from faculty who are charged with developing and implementing EOL concepts into nursing curricula,

freeing valuable time for faculty to develop critical thinking activities and simulations focused on EOL care.

There were no current studies on the ELNEC-Undergraduate curriculum to compare to the results of this study. However, the results of this study are congruent with research conducted on ELNEC-Core as well as other ELNEC curricula. Glover et al. (2017) reported that the ELNEC-Core curriculum was an effective means of improving baccalaureate students' knowledge of palliative and EOL care. Kim et al. (2011) noted that after implementing a 2-day ELNEC-Core course with Korean nurses (n=111), knowledge of palliative care increased with a $p<.0001$ level of significance. O'Shae et al. (2015) and Barrere et al. (2008) concluded that student knowledge, as well as attitudes, improved after aspects of ELNEC-Core curriculum were implemented into nursing education.

Research Question 1a

Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to the principles of primary palliative care?

In order to compare means between the pretest and posttest scores, a paired samples *t*-test was conducted to determine if the intervention improved students' knowledge with respect to principles of primary palliative care. The results of this study indicated that student knowledge with respect to principles of primary care improved after the intervention. On average, student scores with respect to principles of primary care improved 9% (70 to 79) on the posttest score from the pretest scores. Students and nurses must be knowledgeable in principles of primary palliative care to meet the need of the population they serve. Students must be able to distinguish between palliative and EOL care, understand the importance of and advocate for advanced directives, and make educated decisions when faced with legal and ethical dilemmas

while providing care to the terminally ill patient and caregiver. The ELNEC-Undergraduate curriculum provided a structured curriculum, which outlined principles of primary care, including EOL care, and improved student knowledge.

Currently, there is no research that investigates principles of primary palliative care utilizing the ELNEC-Undergraduate curriculum as an intervention. Multiple studies regarding knowledge of palliative care have been identified in EOL research. However, terminology utilized in this research makes it difficult to decipher what is considered basic knowledge from principles of primary palliative care. In 2008, Shipman et al. conducted a mixed methods study on nurses' confidence and knowledge in the principles and practice of palliative care. An educational course was designed and implemented for the participants. A small statistically significant increase in knowledge was noted after the intervention.

Even though there is limited EOL research regarding principles of primary palliative care, which includes EOL care, it is knowledge essential for students and nurses in order to provide adequate care to the dying population. The National Consensus Project for Quality Palliative Care (NCP) and the ELNEC project have dedicated a large amount of education to principles of primary palliative care. NCP (2018) developed the *Clinical Guidelines for Quality Palliative Care* to guide, describe, and outline quality palliative care including eight domains of practice. Domain one outlines the elements of "palliative care principles and practices" (NCP, 2018). Domain eight outlines ethical and legal aspects of palliative care including advanced care planning, surrogate decision-making, ethical considerations, and fostering patient autonomy (NCP, 2018). The NCP document provides the foundational aspects that all students and nurses must be knowledgeable when called upon to provide care to the terminally ill patient and caregiver. ELNEC curriculum has dedicated module one to outline the philosophy and

principles of primary palliative care, describing the roles of the interprofessional team as well as the holistic approach provided during palliative and EOL care.

Research Question 1b

Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to pain and symptom management in EOL care?

Pain and symptom management are essential components of nursing practice when caring for the terminally ill; therefore, these concepts should be adequately researched. After implementing a paired samples *t*-test to determine if the intervention improved student knowledge with respect to pain and symptom management, results indicated that there was a statistically significant improvement with a 6% (70 to 76) increase on posttest scores. Research revealed that terminally ill patients experience a wide variety of adverse symptoms when diagnosed with a life-limiting condition (Lamers, 2017; Rome et al., 2011). Students and nurses must be knowledgeable in assessment skills, nursing interventions, and evaluation of the effectiveness of interventions to promote physical comfort in the dying patient. This study demonstrated the importance of implementing the ELNEC-Undergraduate curriculum in order to provide education in symptom management for nursing students. More importantly, the education obtained through this curriculum has the potential to improve patient outcomes by promoting a peaceful death experience for the patient and caregiver.

Currently, there is no research that investigates pain and symptom management when utilizing the ELNEC-Undergraduate curriculum as an intervention. However, there is an abundance of qualitative research that indicates students, as well as licensed nurses, are not educationally prepared to provide pain and overall symptom management to the dying population (Carman et al., 2016; McIlfatrick et al., 2010; Park et al., 2014). Pain and symptom

management are fundamental aspects of palliative and EOL care. The Institute of Medicine (IOM, 2015), American Association of Colleges of Nursing (AACN, 2016), and American Nurses Association (ANA, 2016) have strongly suggested that pain and symptom management at the EOL be integrated into nursing curricula to better prepare students and nurses to provide said care. The ELNEC project recognizes the importance of addressing these educational gaps by dedicating a significant portion of the curricula (two of the six) to pain and symptom management. Module three is dedicated to pain assessment and management at the EOL. Module four addresses the recognition, assessment, and management of symptoms that one could experience when diagnosed with a serious life-limiting illness.

Research Question 1c

Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to communication in EOL care?

Communication is essential to all patient care. Nurses need adequate communication skills in order to communicate with the patient, caregiver, and members of the interdisciplinary team when providing care to the terminally ill. Inadequate communication has the potential to lead to adverse patient outcomes (Kourkouta & Papathanasiou, 2014). The IOM (2015), AACN (2016), and ANA (2016) have stressed the importance of communication skills when providing EOL care and the need to address communication in nursing curricula. The ELNEC-Undergraduate curriculum dedicates a module to communication, which address a gap in EOL education.

This study investigated whether or not the ELNEC-Undergraduate curriculum improved student knowledge with respect to communication in EOL care. A paired samples *t*-test was conducted. The results indicated that students' scores on the posttest had on average a

significantly higher score than their scores on the pretest. On average, student scores with respect to communication improved by 10% (86 to 96) on the posttest, improving by a letter grade.

There were no current studies on the ELNEC-Undergraduate curriculum against which to compare the results of this study. The majority of research on communication uses a qualitative methodology. Students and nurses have reported multiple barriers to communication when caring for the terminally ill, which include lack of communication concepts in nursing curricula, anxiety, insecurity, lack of confidence, and spiritual differences (Bloomfield et al., 2015; Ek et al., 2014; Glover et al., 2017; Smith et al., 2018; White & Coyne, 2011). However, Milic et al. (2015) conducted a quantitative study to examine nursing communication between family members and physician regarding patient prognosis and goals. Participants included critical care nurses (*n*=82) who participated in an 8-hour workshop addressing communication and roles of the nurse caring for critically ill patients. The researchers collected survey data pre-workshop, immediately following the workshop, and 3 months' post-workshop. The results of the study indicated that participants had higher confidence in communication skills immediately post workshop and 3 months later than before the education with a .001 level of significance at both intervals post-workshop. Bloomfield et al.'s (2015) mixed methods study revealed similar results to Milic et al. (2015) where EOL simulation improved nursing students' confidence in communication with terminally ill patients and caregivers.

Palliative care, which includes EOL care, requires students and nurses to be effective communicators. Nurses who provide EOL care are responsible for coordinating care within an interdisciplinary team as well as act as a patient advocate. Communication skills are essential to meet the needs of all involved. Therefore, it is vital for nursing education to include

communication skills within nursing curriculum. This current study demonstrated that the ELNEC-Undergraduate curriculum improved students' knowledge of communication. The ELNEC-Undergraduate curriculum provides a standard curriculum for all nursing programs to implement in order to improve communication skills in students.

Research Question 1d

Does the ELNEC-Undergraduate online curriculum produce an increase in student knowledge with respect to spirituality and grief in EOL care?

The ELNEC-Undergraduate curriculum improved student knowledge with respect to spirituality and grief in this current study. The results of the paired samples *t*-test were statistically significant indicating the student's posttest scores were higher with respect to spirituality and grief than pretest scores. On average, student scores with respect to spirituality and grief improved by 10% (70 to 80) on the posttest, improving by a whole letter grade.

The current study findings indicate that the importance of implementing the ELNEC-Undergraduate curriculum in nursing education to improve students' knowledge with regard to the emotional and spiritual needs of the patients and caregivers as well as the nurse providing care. Nurses provide EOL care in one of the most emotionally charged times in patients' and caregivers' lives. Research indicates that nurses who provide EOL care experience anxiety, fear, and oftentimes avoid spiritual and bereavement care due to an inadequate understanding of said care and poor communication skills (Carman et al., 2016; Petersen, 2013; Tiew et al., 2013). The integration of ELNEC-Undergraduate curriculum has the potential to prevent burnout in the nurse who provides care and promote a peaceful death experience for all parties involved.

Currently, there is no research that investigates spirituality and grief when utilizing the ELNEC-Undergraduate curriculum as an intervention. The majority of research which addressed

spirituality and grief used a qualitative methodology. It is abundantly clear in research that students and nurses do not feel adequately prepared to address such emotionally charged topics as spirituality and grief at the EOL (Carman et al., 2016; Mitchell, 2005; O'Brien et al., 2018; Tiew et al., 2013). However, spirituality and bereavement care are intricate aspects of EOL care. The ANA (2016) and AACN (2016) strongly believed that all nurses should be comfortable discussing death and dying with patients and caregivers as well as providing nursing interventions that address spirituality and grief. The ELNEC-Undergraduate curriculum devotes two modules to these concepts. Module five covers loss, grief, and bereavement in respect to the role of the nurse, awareness of one's response to loss and grief, and identifying coping strategies for nurses (Relias, n.d.a). Module six addresses the final hours of the patient's life and bereavement support provided to the caregiver after the patient's death. Care for patients and caregivers in the final hours of life and following death includes meeting spiritual needs and addressing grief for all involved.

Spirituality and grief are complex issues and unique to each individual, which increases the complexity of care provided to patients and caregivers. According to Giske's (2012) literature review, students can learn to provide spiritual care when provided educational opportunities. Oates and Maani-Fogelman (2018) examined the emotional toll nurses experience while providing care to grieving patients and caregivers. Anxiety and professional burnout are among the issues nurses face while providing spiritual and bereavement care (Oates & Maani-Fogelman, 2018). Nursing curricula must address the complex concepts of spirituality and grief to meet the needs of all involved: patient, caregiver, and nurse.

In summary, the ELNEC-Undergraduate curriculum improved student knowledge with respect to EOL care as well as among the constructs of the study: principles of primary palliative

care, pain and symptom management, communication, and spirituality and grief. This study is congruent with the Shared Theory in Palliative Care's argument that education builds knowledge. The Shared Theory combines Bandura's social cognitive theory and Orem's self-care model to theorize that having knowledge builds competence. Competence is described as having the ability to transform knowledge, skill, values, and attitudes into appropriate actions (Zhang et al., 2001). Therefore, this study indicates that the ELNEC-Undergraduate curriculum is an effective teaching modality to build student knowledge in EOL concepts. The current study supports the integration of the curriculum as a means for nursing faculty to meet the current EOL educational gap in nursing curricula.

Research Question 2

Does age, ethnicity, gender, and pre-existing experiences of the participants in the study affect the students' knowledge with respect to EOL care?

Simple, multiple, and hierarchical linear regressions were implemented in order to investigate if one or more variables could predict another. Each variable was analyzed separately utilizing simple linear regression. The independent variables age, ethnicity, gender, participated in EOL care, loss of a loved one, cared for a loved one who died, and previous work experience in a healthcare setting were not significant predictors of pretest or posttest knowledge of EOL care.

Multiple linear regression was performed to investigate the prediction of pretest and posttest knowledge with respect to EOL care. The combination of all seven variables, which included age, ethnicity, gender, participated in EOL care, loss of a loved one, cared for a loved one who died, and work experience in the healthcare setting was not statistically significant for pretest or posttest scores. The hierarchical linear regression model result analyzing all seven

variables was congruent with the multiple linear regression findings. When analyzing all variables using a hierarchical linear regression model, the variables were not predictors of student knowledge of EOL care on pretest and posttest scores.

There was no current research available that focused on ELNEC-Undergraduate curriculum to compare with the results of this study. Therefore, this study's results will be compared to findings conducted on ELNEC-Core curriculum, the utilization of simulation as a teaching modality, and qualitative studies focused on students' attitudes regarding EOL care. Fluharty et al. (2012) conducted a quasi-experimental study evaluating knowledge, levels of confidence, and self-reported communication skills after a lecture based on ELNEC-Core curriculum. The study results concluded that students' posttest scores improved regardless of age or gender. Adesina et al.'s (2014) mixed method study on the attitudes, experiences, knowledge, and education of Australian nursing students revealed that gender did not significantly affect students' attitudes toward death. However, it revealed that preexisting experience with death, both personal and professional, improved the students' EOL knowledge and confidence. Students with EOL experience reported less anxiety and fear related to the process of death (Adesina et al., 2014). Chow et al.'s (2014) study had similar results to that of Adesina et al. (2014), reporting that clinical experience improves students' attitude and perceived competence in EOL care. The current study demonstrates the need for further research in demographics and preexisting experience based on the small sample size from one small Associate degree program.

Research Question 3

How did participants in the study perceive the effect of the ELNEC-Undergraduate online curriculum on their knowledge gained or not gained with respect to EOL care?

Overall, students (n=49) perceived that their knowledge had improved with respect to all four study constructs as well as feeling better prepared to provided EOL care after the intervention. Only one article was identified that discussed the implementation of ELNEC-Undergraduate curriculum at the Associate degree level. Mazanec et al.'s (2019) article focuses on the development and implementation of the ELNEC-Undergraduate curriculum. Mazanec et al. (2019) reported students were asked to rank the "importance of the content for clinical practice and the ease of use of the interactive technology of the online course" (pp. 62-63). Students were overwhelmingly positive, with 98% ranking agree to strongly agree, which was congruent with this study's findings.

The results of this study are congruent with studies focused on student attitudes after the implementation of EOL simulations in nursing curriculum. Montgomery et al.'s (2016) study revealed that students feel better prepared to provide EOL care have increased confidence with critical thinking skills after an EOL simulation experience. Fluharty et al.'s (2012) results were similar to that of Montgomery et al. (2016), which reported that after an EOL simulation experience, students had high levels of self-confidence and self-reported communication skills.

The Shared Theory in Palliative Care theorizes that self-competence effects behavior. Bandura (1986) argued that nurses who have high perceived self-confidence perform better than those who have low perceived self-confidence. The shared theory indicates that confidence and self-competence are developed by educational activities and experiences. Therefore, the implementation of the ELNEC-Undergraduate curriculum is the educational intervention students need to improve knowledge as well as self-competence. This study demonstrates that the majority of students had a high perceived self-competence after the implementation of the ELNEC-Undergraduate curriculum.

Implications

Based on the findings of this study implications have been identified for four groups: nursing programs, nursing curricula, administration, and terminally ill patients and caregivers.

Nursing Programs

The first implication is for nursing programs. The results of this study indicate that the implementation of the ELNEC-Undergraduate curriculum can be a useful teaching modality for EOL care. The lack of EOL curricula in nursing education has been well documented (Gillan et al., 2014; Herber & Johnston, 2012; IOM, 2015). This study indicates that student knowledge improves with respect to EOL care when the ELNEC-Undergraduate curriculum is implemented. Nursing administrators and faculty are responsible for implementing concepts into the curricula to help students become safe, knowledgeable, and competent nurses. ELNEC-Undergraduate has proven to be an effective means to improve student knowledge.

This study implemented the ELNEC-Undergraduate curriculum in an Associate degree nursing program. Associate degree programs are forced to produce safe, competent nurses in half the time of baccalaureate programs. Due to the 2-year time constraint, Associate degree programs' curricula are fast-paced and saturated, leaving little time for EOL concepts. The online format of the ELNEC-Undergraduate curriculum can be an asset to Associate degree programs. The Associate degree program where this study took place implemented the curriculum as an independent assignment. The students had 1 month to complete all six modules in the ELNEC-Undergraduate curriculum. Students were able to work through the curriculum in an independent fashion at their own pace. The flexibility of the format of this curriculum is an added advantage and has proven beneficial at the associate level.

The ELNEC-Undergraduate curriculum was designed to help undergraduate nursing students meet the palliative and EOL competencies set forth by the AACN. Once the AACN put forth the 17 competencies for caring for the seriously ill, the National Council of State Boards of Nursing (NCSBN) added EOL care competencies to the National Council Licensure Examination for Registered Nurses (NCLEX-RN) test plan (NCSBN, 2016). Nursing programs that lack EOL curriculum could implement the ELNEC-Undergraduate curriculum to help increase student knowledge on primary palliative and EOL care before taking the NCLEX-RN exam. Nursing programs must meet standard benchmarks set forth by their accrediting bodies; one of which is first-time NCLEX success. This study has demonstrated that the curriculum improves student knowledge with respect to EOL care. This has the potential to improve NCLEX-RN first-time pass rates, but more research is needed.

Nursing Curricula

Development and implementation of nursing curricula directly affect two groups: faculty and students. Faculty are charged with the development and implementation of all nursing curricula, which is a challenging and time-consuming process. Literature review revealed that there is a lack of faculty who are adequately trained in primary palliative care as well as a lack of clinical skills in the area (Ferrell et al., 2018; Mazanec et al., 2019). The online curriculum would offer faculty a means to introducing EOL concepts accurately and according to the results of this study effectively.

Two benefits for students have been identified when the ELNEC-Undergraduate curriculum is implemented. First, the curriculum improves their knowledge of primary palliative and EOL care, based on the findings of this study. As nursing educators, it is imperative that nursing curricula empower students with knowledge in order for students to become safe,

effective, and competent nurses. The results of this study reveal that the ELNEC-Undergraduate curriculum is a means to foster student knowledge in EOL care. The second benefit for students includes a certification of completion once students reach an acceptable level within each of the six ELNEC-Undergraduate models. Each module within the curriculum has a quiz that students must take before preceding to the next module. Mastery of the module content is ensured by obtaining an 80% or higher on each of the module quizzes. Students have the opportunity to add the certificate of completion to their professional portfolio. Due to the infancy of the program, this certification of completion is not widely available to students, giving those who have obtained the certification of completion an advantage while seeking employment, as well as in the workplace.

Administration

Administrative budgets are a concern for many nursing education programs across the United States. The ELNEC-Undergraduate curriculum is cost-effective in comparison to many educational programs on the market. The cost is $29 per student for 12-month access to the curriculum. Based on the results of this study, nursing administrators have the ability to add an educational program that improves student knowledge at an affordable cost. The results of this study indicate that, on average, student scores increased from a “C” to a “B’ after completing the ELNEC-Undergraduate curriculum. Administrators have the ability to improve student knowledge of EOL care with an affordable product.

Faculty spend countless hours developing content, classroom activities, and exams as well as clinical and simulation activities. The ELNEC-Undergraduate online curriculum format curriculum has two potential benefits for faculty: (a) spend less time developing the EOL content and (a) provide valuable time for faculty to develop classroom activities and simulation

experiences focused on EOL concepts to apply the content learned in the ELNEC-Undergraduate curriculum. Implementation of critical thinking activities as well as practical experiences provide students the opportunity to implement the knowledge they gained from the ELNEC-Undergraduate curriculum. This fact should be appealing to nursing administrators in order to improve faculty time efficiency and improve student knowledge and practice.

Patients and Caregivers

Ultimately, patients and caregivers are at the heart of primary palliative and EOL care. Students and nurses provide care to terminally ill patients and caregivers at one of the most difficult and painful times in one's life. This population deserves students and nurses who are knowledgeable and confident in the EOL care they provide. The results of this study indicate that student knowledge improved with respect to EOL care after the implementation of the ELNEC-Undergraduate curriculum as well as in the study constructs; principles of primary palliative care, pain and symptom management, communication, and spirituality and grief.

Shared Theory in Palliative Care argues that individuals feel more confident with their ability to perform skills and care for patients when they are knowledgeable. Patient outcomes should be the number one priority to all stakeholders in nursing education as well as the healthcare system. The ELNEC-Undergraduate curriculum improves student knowledge in EOL, which builds competence. Terminally ill patients and caregivers deserve knowledgeable, competent nurses who can promote and create a peaceful death experience.

Limitations of the Study

The researcher has identified multiple limitations within this study. First, the study is limited to one small Associate degree nursing program within a rural setting. The study had one small sample from one geographical setting. Therefore, the researcher could not conclude that

this study is representative of all Associate degree nursing programs. Secondly, the small population was a limitation to the study. Historically, the last semester of the academic program at the institution where this study took place, has 40 to 55 students total enrolled in the Advanced Adult Health and Critical Care course. The semester this study was implemented, 52 students were enrolled and recruited from the Advanced Adult Health and Critical Care course. Of the 52 students recruited, 49 agreed to participate in the study. The researcher has identified that this study fails to have generalizability by noting the first two limitations.

The third limitation identified is that the Associate of Science in Nursing (ASN) curriculum where the study took place, does not have a dedicated EOL course or module. Only two faculty members reported integrating EOL concepts into the curriculum. The EOL concepts were taught at faculty discretion and were based on the content they taught. Faculty reported spending small amounts of time dedicated to EOL concepts in the institution where the study took place, making it difficult to discern student knowledge with respect to EOL care from critical thinking ability. The mean score on the pretest was 74%, meaning students had some preexisting knowledge of EOL care before the intervention or implemented critical thinking skills that helped them answer questions correctly. What cannot be adequately determined is if that knowledge was a result of EOL concepts being integrated into the curriculum or the fact that the students had been exposed to the majority of the curriculum since the intervention was implemented in the last semester before graduation.

The last limitation identified by the researcher is that students had varying personal experiences with death and dying. Personal experiences with death can be positive or negative, which could potentially skew study results. Personal, work, and nursing clinical experiences

may improve or hinder the participant's willingness to learn EOL concepts. Researchers cannot control personal and pre-existing experiences that have the ability to skew study results.

Recommendations for Future Research

This study evaluated the effectiveness of the ELNEC-Undergraduate curriculum on student knowledge with respect to EOL care. Based on the findings of this study the following are recommendations for future research.

1. The small sample size of this study is a limitation. This study revealed statistically significant results between the pretest and posttest scores and met the required power analysis. However, this study should be replicated with a larger sample size giving more power and validity to the study results.

2. This study was conducted in a small ASN program. This study should be replicated in larger ASN programs as well as at the Baccalaureate level. This study could also be implemented across nursing levels comparing ASN population to that of the Baccalaureate level.

3. This study focused on one nursing cohort. This study should be replicated across multiple cohorts in order to compare results.

4. This study was conducted in the last semester of the ASN program before students graduated. Therefore, they had been exposed to the majority of the nursing curriculum. This study should be replicated at different intervals within nursing curricula before they have received the majority of the program's content.

Recommendations for Educational Practice Change

Based on the findings of this study, the researcher is recommending that undergraduate nursing programs adopt the curriculum in order to address the lack of EOL concepts within

nursing curricula or as a supplement to current EOL curricula. It is inevitable that students will be required to provide EOL care as licensed nurses. The ELNEC-Undergraduate curriculum will allow for better understanding of EOL care before students enter into the nursing profession, hence preparing future nurse for the demanding task of providing holistic care to patients and caregivers.

Recommendations for EOL Application

Students must be exposed to opportunities to apply what they have learned from the ELNEC-Undergraduate curriculum in order to truly understand the curriculum's value. Recommendations for educational practice after the implementation of the curriculum are as follows:

1. Implement EOL case studies in the classroom setting or as independent assignments to examine student application of EOL concepts.

2. It is difficult to ensure that students will have the opportunity to provide EOL care in the clinical setting. EOL simulation experiences provide faculty the opportunity to expose students to EOL care in a realistic manner outside of the clinical setting. Therefore, simulation experiences should be implemented to allow students to perform EOL care and transfer knowledge obtained from the ELNEC-Undergraduate curriculum into clinical practice.

3. Seek additional clinical opportunities that expose students to EOL care. Partnering with inpatient or outpatient hospice companies for clinical rotations provides students the opportunity to provide EOL care under faculty supervision.

Summary

Implementation of EOL curriculum has been debated for years among nursing education experts. Many EOL teaching modalities have been implemented; however, no one modality has

been determined to be completely successful. The purpose of this study was to determine if implementing the ELNEC-Undergraduate online learning modules improved student knowledge with respect to EOL care concepts. The study's findings indicated that the curriculum improved student knowledge with respect to EOL care with statistical significance.

This study has addressed a gap in EOL education as well as needed research involving the ELNEC-Undergraduate curriculum. The American Nurses Association (ANA) and Hospice and Palliative Nurses Association (HPNA) are currently endorsing the ELNEC curriculum as the standardized palliative care nursing curriculum that all undergraduate, graduate, and doctoral levels should implement (ANA & HPNA, 2017). This study has provided needed research to justify the bold support that the ANA and HPNA have given the ELNEC-Undergraduate curriculum. Future research is needed to validate this study's findings.

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APPENDIX A

OUTLINE OF ELNEC-UNDERGRADUATE CURRICULUM

Module 1 Outline: Introduction to Palliative Care Nursing

Section 1: Introduction
- A. About This Course
- B. Learning Objectives

Section 2: An Overview of Palliative Care
- A. The Facts about Serious Illness
- B. COPD Testimonial
- C. What is Palliative Care?
- D. Palliative Care Testimonial
- E. Philosophy and Delivery
- F. The Palliative Care Team
- G. Palliative Care Team Testimonial
- H. Palliative Care and the Nurse
- I. A New Graduate Testimonial
- J. The Nurse's Role
- K. Quality-of-Life Model
- L. Case Study
- M. Quality of Life Testimonial
- N. What Are Your Thoughts?
- O. Continuum of Care
- P. Pediatric Palliative Care Testimonial
- Q. Practice
- R. What is Hospice?
- S. Disease and Dying Trajectories
- T. The Hospice Team
- U. Remember Mrs. C
- V. Differences between Hospice & Palliative Care
- W. Practice
- X. Improving Palliative Care
- Y. Serious Illness in Pediatrics Testimonial
- Z. Palliative Nursing Practices
- AA. Eight Domains of Palliative Care

Section 3: Conclusion
- A. Summary
- B. Course Contributor
- C. References
- D. Congratulations

Module 2 Outline: Communication in Palliative Care

Section 1: Introduction
- A. About This Course
- B. Learning Objectives

Section 2: Communication Techniques
- A. The Nurse's Role
- B. Verbal and Non-Verbal Communication
- C. Barriers to Communication
- D. Cultural Considerations
- E. Communication with Patients and Families
- F. Encouraging Conversation
- G. Attentive Listening
- H. Mindful Presence
- I. Listening and Presence in Action
- J. Reflections
- K. Practice #1
- L. Giving "The Words"
- M. Interviewing Patients
- N. Ask-Tell-Ask
- O. Ask-Tell-Ask in Action
- P. Reflections
- Q. Practice #2
- R. Basic Techniques
- S. I'm Sorry vs. I Wish
- T. There Is Always Hope
- U. Practice #3
- V. Facilitating End-of-Life Decisions W. Am I Dying?
- X. Reflections
- Y. Communicating an Unexpected Death
- Z. Pediatric Sudden Death
- AA. Reflections
- BB. Communicating with the Team
- CC. Patient and Family Expectations
- DD. Team Communication
- EE. Handling Conflict

Section 3: Conclusion
- A. Summary
- B. Course Contributor
- C. Resources
- D. References
- E. Congratulations

Module 3 Outline: Pain Management in Palliative Care

Section 1: Introduction
- A. About This Course
- B. Learning Objectives

Section 2: Pain Assessment

Module 4 Outline: Symptom Management in Palliative Care

Section 1: Introduction
- A. About This Course
- B. Learning Objectives

A. Pain Is Multidimensional	Section 2: Introduction to Symptom Management
B. Biopsychosocial Model	A. Essential Elements
C. Barriers to Pain Relief	B. Biopsychosocial/Spiritual Model
D. Pain Assessment: Biological/Physical Domain	C. Older Adults
E. WHO Ladder	D. Symptom Management in Older Adults
F. Pain Assessment: Psychosocial Domain	E. Summary
G. Pain Assessment: Spiritual Domain	Section 3: Physical Symptoms
H. Physical Examination	A. Biological/Physical Domain
I. Reassess	B. Fatigue
J. Communicating Pain	C. Management of Fatigue
K. Practice	D. Dyspnea
L. Summary	E. Subjective Report
Section 3: Pain Management	F. Clinical Report
A. It Takes a Team	G. Pharmacologic Treatment of Dyspnea
B. Acetaminophen	H. Non-Pharmacologic Treatment of Dyspnea
C. NSAIDs	I. Critical-Thinking
D. Pain Question	J. Anorexia and Cachexia
E. Commonly Used Opioids	K. Causes of Anorexia and Cachexia
F. Respiratory Depression	L. Assessment of Anorexia and Cachexia
G. Constipation	M. Treatment of Anorexia and Cachexia
H. Other Adverse Effects	N. Constipation
I. Important Definitions	O. Assessment of Constipation
J. Pain Question	P. Treatment of Constipation
K. Adjuvant Therapy	Q. Additional Approaches
L. Routes of Administration	R. Meet Mrs. Potts
M. Opioid Formulations	S. Summary
N. Non-Pharmacologic Strategies	Section 4: Psychosocial/Spiritual Symptoms
O. When the Pain Plan is not Working	A. Psychological Issues
P. Under Treatment in Children and Older Adults	B. Depression
Q. Others at Risk	C. Causes of Depression
R. Pediatric Pain	D. Assessment of Depression
S. Geriatric Pain Management	E. Depression Assessment
T. Your Critical Role as the Nurse	F. Interventions for Depression
U. Summary	G. Pediatric Symptom Management
Section 4: Conclusion	H. Key Points
A. Summary	I. Anxiety
B. Course Contributor	J. Assessment of Anxiety
C. Resources	K. Interventions for Anxiety
D. References	L. Key Points
E. Congratulations	M. Critical-Thinking Question
	N. Spiritual Distress
	O. Spiritual Care Assessment
	P. Key Points
	Q. Summary
	Section 5: Conclusion
	A. Summary
	B. Course Contributor
	C. Resources

	D. References E. Congratulations
Module 5 Outline: Loss, Grief and Bereavement Section 1: Introduction A. About This Course B. Learning Objectives Section 2: Loss, Grief, and Bereavement A. Definitions B. Loss, Grief, and Bereavement C. Nurse's Role D. A Grief and Bereavement Program E. Types of Grief F. Complicated Grief G. Grief Assessment H. Critical-Thinking Question I. The Grief Process J. Factors Affecting Grief K. What Do Caregivers Want? L. Grief Assessment of Family Members M. Listen to Their Story N. Everyone Has a Story O. Key Points P. Grief Interventions Q. Words That Are Helpful R. Words That Are Not Helpful S. Children's Grief T. Bereavement Interventions U. Addressing Bereavement V. Key Points W. Grief Support X. Completion of the Grieving Process Y. Prevention of Compassion Fatigue Z. Cumulative Loss AA. Signs & Symptoms of Burnout BB. Factors Influencing Adaptation CC. Systems of Support DD. Self-Care EE. Key Points FF. Critical-Thinking Question Section 5: Conclusion A. Summary B. Course Contributor C. References D. Congratulations	Module 6 Outline: Final Hours of Life Section 1: Introduction A. About This Course B. Learning Objectives Section 2: Preparing for a Good Death A. A Good Death B. Reflection C. The Nurse, Dying, and Death D. Individualized, Personal Experience E. Importance of Being Honest F. Open, Honest Communication G. Preparing for Death H. Common Ethical Issues I. Critical-Thinking Question J. Summary Section 3: Caring for the Imminently Dying Patient A. Two Roads to Death B. Biophysical/Psychosocial/Spiritual Model C. Most Common Symptoms D. Delirium E. Pain During the Final Hours F. Terminal Secretions G. Symptoms of Imminent Death H. Psychological Concerns I. Spiritual Concerns J. Cultural Considerations K. Cultural and Spiritual Considerations L. Nursing Interventions: Support M. Critical-Thinking Question N. The Death Vigil O. The Dying Child P. Key Points Q. The Dying Older Adult R. Care Following Death S. Critical-Thinking Question T. Bereavement Support U. Summary Section 4: Conclusion A. Summary B. Course Contributor C. References D. Congratulations
Source: Relias Academy. (n.d.b). Module outline for ELNEC-for-undergraduate. Retrieved from https://elnec.academy.reliaslearning.com/Data/Default/Images/ELNEC-Undergraduate-Module-Outlines.pdf	

APPENDIX B

PRETEST: UNPCKS WITH DEMOGRAPHIC AND PRE-EXISTING EXPERIENCE ITEMS

Demographics:

1. What range below represents your age?
    a) 19-25
    b) 26-plus

2. How do you identify your gender?
    a. Female
    b. Male

3. Race/Ethnicity:
    a. White
    b. American Indian
    c. Hispanic
    d. African American
    e. Asian/Pacific Islanders

4. Have you participated in caring for patients at the end of life?
    a. Yes
    b. No

5. Have you experienced the loss of a loved one (friend or family member) within the last year?
    a. Yes
    b. No

6. Have you cared for a loved one who died (friend or family member)?
    a. Yes
    b. No

7. Do you have previous work experience in the healthcare setting (excluding nursing school experiences)?
    a. Yes
    b. No

*****Question 8 would begin the UNCKS items

APPENDIX C

POSTTEST: UNPCKS WITH PERCEIVED KNOWLEDGE ATTAINMENT ITEMS

**Question 1-27 is the UNPCKS items

28. Do you think the ELNEC-Undergraduate online curriculum improved your knowledge with respect to the principles of primary palliative care?

1. Strongly Agree
2. Agree
3. Undecided
4. Disagree
5. Strongly Disagree

29. Do you think the ELNEC-Undergraduate online curriculum improved your knowledge with respect to pain and symptom management in end of life concepts?

1. Strongly Agree
2. Agree
3. Undecided
4. Disagree
5. Strongly Disagree

30. Do you think the ELNEC-Undergraduate online curriculum improved your knowledge with respect to communication in end of life concepts?

1. Strongly Agree
2. Agree
3. Undecided
4. Disagree
5. Strongly Disagree

31. Do you think the ELNEC-Undergraduate online curriculum improved your knowledge with respect to spirituality and grief in end of life concepts?

1. Strongly Agree
2. Agree
3. Undecided
4. Disagree
5. Strongly Disagree

32. After working through the ELNEC-Undergraduate Curriculum, how prepared fo you feel to provided end of life care ?

1. Very prepared
2. Somewhat prepared
3. Undecided
4. Somewhat unprepared
5. Not at all prepared

33. How do you plan on using what you learned from the ELNEC-Undergraduate online curriculum? (open-ended)

APPENDIX D

BREAKDOWN OF CONSTRUCTS AND UNPCKS ITEM TOPICS

Construct	Item
Principles of Primary Palliative Care	1. Principle of palliative care 4. Ethical dilemmas 10. Financial burden of care 11. Concept of healing 14. Patient 16. Philosophy palliative care 17. Decision-making in palliative care
Pain and Symptom Management	2. Opioids for pain management 13. Pain assessment 20. Pain assessment 21. Opioid for pain management 22. Symptom management in older adults 26. Symptom management in actively dying patient 27. Pain management
Communication	3. Communication: Family 7. Communication: Family 18. Communicating: Patient 19. Communication: Family 23. Communication: Family
Spirituality and Grief	5. Cultural sensitive care 6. Culturally sensitive care 8. Pediatric grief 9. Anxiety and grief 12. Spiritual assessment: Family 15. Pediatric grief 24. Compassion fatigue and burnout 25. Adult grief

APPENDIX E

LETTER OF SUPPORT: MARY HANKS

December 11, 2018

Greetings Dissertation Committee Chair and Members:

My name is Mary Hanks and I serve as the current chair of the Ira D. Pruitt Division of Nursing at the University of West Alabama. Please accept this letter as support and confirmation that I am aware of Jennifer Harwell's intention to implement the End-of-Life Nursing Education Consortium (ELNEC) Undergraduate curriculum into the University of West Alabama's NS 204: Advanced Adult Health and Critical Care course in the spring 2019 semester as part of her research study on End-of-Life care.

It is my sincere hope that the findings of Jennifer's research will prove beneficial to our program as we have also struggled to find adequate time in our curriculum to devote to the complex topic of death and dying and enabling our nursing students to deliver appropriate care to patients who are terminally ill or at the end-of-life. As new graduates transition into practice, they need to have this skill set in their toolbox and often we fail to equip them with the needed knowledge to function in this pivotal role. To aid Jennifer, she will have access to students, equipment, and faculty as needed. She will have the full support of the nursing administration.

Again, I fully support this study and I look forward to reading Jennifer's findings. I especially am anxious to consider if this is a strategy we will implement into our curriculum in future semesters.

Best Regards,

Mary Hanks, EdD, MSN, CNL, CNE
Chairperson, Ira D. Pruitt Division of Nursing
The University of West Alabama
Livingston, AL 35470

APPENDIX F

LETTER OF SUPPORT: RHONDA GONZALEZ

UWA | The UNIVERSITY of WEST ALABAMA

-Division of Nursing-

December 3, 2018

Dear Dr. Wright, Dr. Graves, Dr. Lippe, Dr. Montgomery, and Dr. Tomlinson:

I am writing this letter in support of Jennifer Harwell and her implementation of the End of Life Nursing Education Consortium (ELNEC-Undergraduate) at the University of West Alabama. I am currently the Course Coordinator for the course that the curriculum will be implemented in, as well as the module instructor that teaches oncology, where palliative concepts, including end of life care is taught. One hour of the module hours has been allocated to incorporating this curriculum.

I am excited for this opportunity for our students and I think this will be a very beneficial curriculum for them to reinforce end of life and palliative care, as well as an opportunity for them to learn more. I appreciate your time and consideration on her behalf. Please feel free to contact me with any further questions you may have at rgonzalez@uwa.edu or 205-652-3744.

Sincerely,

Rhonda Gonzalez, MSN, RN
Assistant Professor of Nursing
The University of West Alabama
Station 28
Livingston, AL 35470

APPENDIX G

LETTER OF SUPPORT: KELLY MCCLURE

UWA | The UNIVERSITY of WEST ALABAMA

-Division of Nursing-

December 7, 2018

Dr. Wright, Dr. Graves, Dr. Lippe, Dr. Montgomery, and Dr. Tomlinson:

I wish to express my support of Jennifer Harwell in her implementation of the End of Life Nursing Education Consortium (ELNEC-Undergraduate) at the University of West Alabama. I am a module instructor in the course in which the program is set to be implemented. While I do not teach content related to these concepts, I do recognize the need as well as potential benefits of providing further education to our students concerning end-of-life care.

This is an exciting opportunity for our upper level students. I believe the implementation of ELNEC will prove to strengthen our program by providing an in-depth look at end of life and palliative care, concepts only touched on very briefly throughout individual modules in our current curriculum. The addition of this valuable learning experience will create better prepared nurse graduates ready to care for our aging population. Thanks for your time and consideration on her behalf. Please contact me with any further questions you may have at kmcclure@uwa.edu or 205-652-5529.

Sincerely,

Kelly McClure, MSN, RN, CNL
Assistant Professor of Nursing
The University of West Alabama
Station 28
Livingston, AL 35470

APPENDIX H

LETTER OF SUPPORT: KATIE SMITH

UWA | The UNIVERSITY of WEST ALABAMA

-Division of Nursing-

December 5, 2018

Dear Dr. Wright, Dr. Graves, Dr. Lippe, Dr. Montgomery, and Dr. Tomlinson:

I am writing this letter to express support for Jennifer Harwell and her use of the End of Life Nursing Education Consortium (ELNEC-Undergraduate) at the University of West Alabama Division of Nursing. I join Jennifer in teaching second level students in our program and also teach the initial concepts of end of life care in Foundations of Nursing Practice. I am excited to see the results of her study and findings on the influence this program has on our students.

I am eager to see the impact this resource has on our Associate Level nursing program. The implication for teaching tools such as this can be profound in a program like ours where we instill large amounts of knowledge in a relatively small time frame. Thank you for allowing this opportunity for Jennifer and our students. Please contact me with any questions.

Sincerely,

Katie Smith, MSN, RN
Assistant Professor, Division of Nursing
Spieth Hall 323
University of West Alabama
Livingston, AL 35470
205-652-5430
kmsmith@uwa.edu

APPENDIX I

UNPCKS PERMISSION FOR UTILIZATION

Capstone College of Nursing

To Whom it May Concern:

On behalf of the End of Life Nursing Education Consortium (ELNEC) Undergraduate evaluation research team, we grant Ms. Jennifer Harwell permission to use the Undergraduate Nursing Palliative Care Knowledge Survey (UNPCKS) instrument in her dissertation study. The UNPCKS is a 27-item multiple choice instrument that evaluates palliative care knowledge for undergraduate nursing students. The UNPCKS instrument aligns with ELNEC-Undergraduate modules, CARES competencies, and the National Consensus Project domains of palliative care.

Mrs. Harwell has our permission to use the instrument for data collection and evaluation of the impact of ELNEC-Undergraduate on student knowledge. However, we do not permit any investigators to publish the individual UNPCKS questions or response options in any scholarly work. This restriction allows our research team to maintain the security and integrity of our measure. As such, we request that no UNPCKS questions and/or response options be included in her dissertation work or associated manuscripts. We have provided Mrs. Harwell the UNPCKS manuscript, currently under review with the *Journal of Professional Nursing*. This manuscript demonstrates ways in which we permit individual items to be reported in scholarly work. Mrs. Harwell may also elect to describe individual items with a few key words, so long as the questions and answers themselves are not recorded.

We are excited for the research Mrs. Harwell is conducting in her dissertation study. We look forward to supporting her scholarship in any way we can.

Respectfully,

Megan Lippe PhD, MSN, RN
Assistant Professor and Simulation Specialist

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APPENDIX J

UWA IRB APPROVAL LETTER

December 4, 2018

Mrs. Jennifer Harwell
UWA Division of Nursing
Station 28
Livingston, AL 35470

Re: UWA IRB Protocol **#19-01**, "Integration of end of life concept into the curriculum of an Associate of Science in Nursing program"

Dear Jennifer:

The University of West Alabama Institutional Review Board has granted approval for the proposed research "Integration of end of life concept into the curriculum of an Associate of Science in Nursing program."

Your application has been given expedited approval according to 45 CFR part 46 as it has been determined to involve no more than minimal risk. Approval has been given under **expedited** review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your application will expire on December 4, 2019. If your research will continue beyond this date contact me at cgiles@uwa.edu for an extension.

Should you need to submit any further correspondence regarding this proposal, please include the above IRB number.

Sincerely,

Carmen Giles
Chair, Institutional Review Board
Office of Sponsored Programs & Research
The University of West Alabama

APPENDIX K

UWA IRB INFORMED CONSENT

Informed Consent

Title of Project: Integration of end of life concept into the curriculum of an Associate of Science in Nursing program

Principal Investigators: Jennifer Harwell

Description: The purpose of the study is to determine if implementing the End of Life Nursing Education Consortium Undergraduate (ELNEC-Undergraduate) online learning modules improves student knowledge in end of life care concepts.

Confidentiality: To provide anonymity, the researcher will randomly assign each participant to a number. The number will be based on the number of students enrolled in the study. For example, if there are 45 participants, then a participant would be randomly assigned a number from 1-45. A master list will be kept by the researcher to link the participants to the assigned number. Assigning participants to a number will allow the researcher to assess the effectiveness of the ELNEC-Undergraduate curriculum by the participant as well as a cohort. Participants pre and post-test scores will be transferred from Blackboard™ to an Excel spreadsheet. The Excel spreadsheet will not identify the participants by name only be the preassigned number given to participants. All data will be maintained electronically with computer password protection. The password will only be known to the researcher, and all collected data will be destroyed or deleted after seven years of the study's conclusion.

Location of Participation: Spieth Hall computer labs

Benefits: There are no direct benefits to participating in the study. However, you may feel good knowing that you contributed to EOL education research.

Risks: There are minimal to no risk involved in participating in this study. Mrs. Harwell is not associated with the instruction of NS 204, ensuring no grades will be affected by participating in the study. Also, the pre and post-test scores are only utilized for purposes of the study. Therefore, the student's overall grade in NS 204 is not affected by participating in the study.

Contact person: If you have any questions about this research project, please contact the Principal Investigator at 205-652-3740. If you have any questions regarding your rights as a research participant, please contact Carmen Giles at 205-652-3424.

Voluntary Nature of Participation: You do not have to take part in this study; participants may decide to withdraw from the study at any time.

Age Requirement: Individuals participating in this survey must meet the minimum age requirement of 19. If you do not meet this age requirement, you are not allowed to participate in this survey.

Choose one of the two statements below to keep in this consent form.

_____ Identifiers might be removed and the de-identified information or biospecimens used for future research without additional informed consent from the subject.

___X__ The subject's information or biospecimens will not be used or distributed for future research studies even if identifiers are removed.

APPROVED by the Institutional Review Board at the University of West Alabama

Protocol	Approved
19-01	Carmen C. Giles