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# Integration of Palliative Care Content within a Public Health Nursing Course

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## Abstract

**Background:** Nurses may not have the basic knowledge of palliative care to provide to patients.

**Aim:** The purpose of this study was to examine nurses' knowledge of palliative care in an on-line nursing program. Knowledge of palliative care was assessed pre and post an educational intervention.

**Methods:** A quasi-experimental design was utilized with a convenience sample of 136 subjects with the approval from the university's institutional review board. The Palliative Care Knowledge Test (PCKT) assessed the subjects' knowledge of palliative care. Descriptive statistics and paired sample t-test were used for analysis.

**Results:** An increase in total mean scores was demonstrated on the post-educational intervention PCKT's scores. The educational intervention had a statistically significant effect on total scores on four subsets of the PCKT.

**Conclusion:** Basic knowledge of palliative care needs to be incorporated into nursing curriculum to increase awareness of palliative care for nurses who are practicing.

**Keywords:** Palliative Care; Public Health; Undergraduate Curriculum

## Introduction

The National Quality Forum (NQF) describes palliative care as patient and family-centered care. According to the National Consensus Project for Quality Palliative Care [1], palliative care enhances quality of life by anticipating, inhibiting, and managing suffering. Palliative care provided throughout the course of an illness addresses the physical, intellectual, emotional, social, and spiritual needs and enables patient independence, right of information, and choice for patients and their families [1]. According to the World Health Organization [2], 40 million people are in need of palliative care. The universal need for palliative care will rise as a result of non-communicable diseases and the aging population [2]. Kochhar [3] projects that the global population of 65 years and older individuals will triple, and that the United States' population of 65 years and older individuals will more than double by 2050. Palliative care is an option for this population to receive patient-centered quality health care [3].

A major barrier of accessing palliative care is a lack of training and awareness of palliative care. Other barriers to palliative care are the beliefs about death and dying; misconceptions of what palliative care really is; and cultural and social barriers [2]. The Institute of Medicine's [4] document entitled, "Dying in America - Improving Quality and Honoring Individual Preferences near the End of Life", identified that there was a shortage of palliative care content in nursing curriculum. The American Association of Colleges of Nursing [5] recommends that more palliative care content needs to be integrated into undergraduate nursing programs.

According to Becker [6], nurses are the healthcare members who will be present at the most difficult moments in a patient and

their families' lives. Nurses provide plans, offer psychological support, and coordinate with other healthcare members to benefit the patient. The therapeutic interactions that nurses develop with patients and their families is at the core of palliative nursing. Palliative care nursing is a combination of science, interpersonal skills, and the therapeutic use of self while providing essential comfort measures [6]. Nurses should have the basic knowledge of palliative care to provide quality nursing care across the healthcare continuum. Palliative care is a patient and family centered option of healthcare. Palliative care addresses the physical, intellectual, emotional, social, and spiritual needs of the patient and their family. Palliative care also allows patient autonomy, right of information, and choice for the patient and their families [1].

Nurses should have the basic knowledge of palliative care to prevent needless suffering for patients and their families. The incorporation of palliative care content in the didactic course of a public health nursing course and the clinical experience allows nurses the awareness of an option of healthcare for a vulnerable population [7]. Students who were enrolled in the Public Health Nursing course within the Registered Nurse (RN) to Bachelors of Science of Nursing (BSN) Program in a southcentral Kentucky university were evaluated for their knowledge of palliative care with the Palliative Care Knowledge Test [8]. Students in the RN to BSN Program were practicing nurses in a variety of settings. Then, in an effort to increase palliative care content, a 1-hour didactic palliative care module was integrated into the didactic portion of the public health nursing course and an eight hour observational clinical. The students were given learning objectives prior to the clinical assignment and the students provided their clinical mentors with the learning objectives on the day of their clinical observation. At the end of the semester in the public health nursing course, students' knowledge of palliative care was re-evaluated with the Palliative Care Knowledge Test [8].

## Background

Pullis [7] incorporated end-of-life (EOL) education throughout a didactic and clinical community health nursing course. The hospice clinical course was created for 10 students to develop competence in caring for patients across the life span at the EOL. At the end of the semester, students provided information and advocated for EOL patients to receive hospice care. Pullis [7] reported that students expressed that the clinical experiences assisted students to gain understanding of EOL and other cultures' perspectives on dying. Gillan, et al. [9] conducted a scoping review of the literature for education of nurses for palliative care. There were 63 English studies found that were conducted between 2001 and 2011. The review of the studies focused on the geographical location, setting, content on palliative care taught, instructional methods, quantity and length of content, study design, and the assessment methods. Majority (86%) of the studies stated a positive outcome. Gillan et al. [9] suggests that there are a variety of instructional methods such as lecture, small group discussion, hospice visits, and audio-visual aids that were utilized to teach palliative care content which makes it problematic to recommend an evidence-based approach to educate nurses in palliative care [9].

Autor, et al. [10] evaluated 143 oncology and cardiac nurses' knowledge of palliative care in the Midwestern United States. Investigators utilized the Palliative Care Quiz for Nurses (PCQN) which is a 20 item instrument to evaluate the nurses' knowledge of palliative care. Participants within the study achieved a mean percentage of 67.6% for correct responses on the PCQN. Investigators suggest for palliative care to become standard practice that nurses who closely work with patients and their families must be knowledgeable of palliative care [10]. Bush [11] investigated if the completion of an Oncology and Palliative Care elective course assisted 109 undergraduate nursing students in the application of palliative care in the clinical setting. Fifty-one undergraduate nursing students within the study unanimously agreed that the Oncology and Palliative Care course positively affected their perception to implement palliative care in the clinical setting. Females more than males in the study appreciated the inclusion of palliative care content in their undergraduate program, but more males than females requested a rotation following the completion of the course. Half of the participants within the study expressed that the course had positively influenced them to work in a palliative care setting immediately or in the future [11].

Al Qadire [12] found that 190 Jordanian hospital nurses had misconceptions and insufficient knowledge of palliative care. The majority (54%) of the participants within the study were men and younger than 30 years of age. Investigators utilized the Palliative Care Quiz for Nurses (PCQN) to evaluate the knowledge level of palliative care. Investigators concluded that basic nursing education needs to include the principles of palliative care and symptom management and address the misconceptions of palliative care [12]. Wilson, et al. [13] evaluated 35 Canadian nursing programs for EOL educational content. Initially, investigators found that more didactic content, practicum time, and EOL content needed to be deliberately arranged in nursing curriculum. Findings revealed that nursing educators identified a need to include EOL content into curriculum to provide care to EOL patients and their families, but more EOL content is need in curriculum for beginning nurses to implement EOL care which is needed as the population ages [13]. Prem et al. [14] evaluated the knowledge of palliative care of 363 nurses in a multispecialty hospital utilizing the Palliative Care Knowledge Test (PCKT). Investigators found that nurses lacked knowledge of palliative care. Female nurses were more knowledgeable of palliative care than male nurses, although this difference was not statistically significant. Participants scored higher in the psychiatric and philosophy of palliative care category

of the PCKT than in the pain, dyspnea, or gastro-intestinal problems categories of the PCKT [14].

### Theoretical Foundation

The study is based on the application of the Donabedian model. According to Moran [15], the Donabedian model establishes that quality healthcare stems from three categories: structure, process, and outcome. A quality structure leads to quality processes which lead to quality patient outcomes [15]. According to McQuestion [16], the structure is the features of the setting where the palliative/EOL content will be presented and applied. The process category of Donabedian model determines if the study subjects have gained knowledge of palliative care/EOL content to potentially utilize in their practice. The outcome of Donabedian model governs the effect that the knowledge of palliative care/EOL content will have on the practice of the study subjects and on the health status of the patient and their families [16]. In the Donabedian quality of care framework, quality improvement can occur when shortfalls in the structure and process categories are identified, improved, or corrected which necessitates the structure and the processes to be monitored. This feedback helps with quality improvement [16]. The integration of palliative care/EOL content in a public health nursing course to assist nurses gain knowledge about palliative care/EOL content is examined in the context of a quality improvement framework utilizing the Donabedian model.

### Structure

The structure describes the characteristics of the nursing program and the clinical setting where the study subjects will be attending the observational experience. The structure of the nursing program can be described as an on-line RN to BSN Program which is accredited by the Commission on Collegiate Nursing Education (CCNE) of the AACN that is located in south-central Kentucky. The 1-hour didactic module is addressed in the 3rd semester of the RN to BSN Nursing Program. The clinical facilities where the study subjects attended the observational nursing experience were located in western and south-central Kentucky. Each facility was public and accepted Medicare, Medicaid private insurance, and donations.

There are more characteristics that are important to the structure of the hospice/palliative care facility. The number of patients who reside at the hospice/palliative care facility and the type of hospice/palliative care facility are characteristics too. An important characteristic is the personnel who provide care including, but not limited to, RN, LPN/LVN, Certified Nurse Aide (CNA), Social Worker (SW), physician, clergyman, mental health professionals, therapists, and pharmacists. The regulatory requirements of hospice/palliative care facilities may vary from state to state [17].

### Process

The process category of the Donabedian model determines if the subjects have gained knowledge of palliative care/EOL content to potentially utilize in their practice. The subjects were assessed for knowledge of palliative care utilizing the PCKT ([8] at orientation of the course, Concepts of Public Health. At week five of the course, subjects were presented the one-hour didactic module in the on-line public health nursing course. Then, the subjects attended an observational eight-hour clinical experience at a hospice/palliative care facility between weeks five to week 15 of the Concepts of Public Health nursing course. At the end of the course, subjects were re-evaluated with the PCKT [8]. The integration of palliative care/EOL content in the public health nursing course was an attempt to meet the IOM [4] and the AACN [5] recommendations.

### Outcome

The outcome category of the Donabedian model is the product of the structure and process category [16]. The outcome category entails the effect that the knowledge of palliative care/EOL content will have on the practice of the study subjects and on the health status of the patient and their families. According to the American Nurses Association [18,19], nurses are expected to deliver the highest quality of life and care for End of Life (EOL) patients and their families. The nurse's fidelity entails providing comfort measures and relief from physical, emotional, spiritual, or existential suffering. Another responsibility of the nurse is to provide information on EOL choices before death occurs [18].

## Research Questions

For this descriptive quasi-experimental research project, the following research questions were addressed:

- What is the RN to BSN students' knowledge of palliative care on the total PCKT pre-educational intervention?
- What is the RN to BSN students' knowledge of palliative care on the total PCKT post- educational intervention?
- Is there a difference on the total PCKT pre and post-educational intervention?
- Is there a difference on the total PCKT's subsets from the pre to post-educational intervention?

## Methodology

A quantitative quasi-experimental design was implemented. After ethical consideration for human subjects was approved by the university's Institutional Review Board (IRB), a convenience sample of students enrolled in a RN to BSN Program's Concepts of Public Health's didactic and clinical course in southcentral Kentucky were recruited over a two-year period. A recruiter

statement was read to potential subjects by the researcher. All students enrolled in the courses had the opportunity to participate regardless of their gender, age, racial, ethnic group, marital status, or socioeconomic status. The inclusion criteria were that the students had to be enrolled in the RN to BSN Program and the didactic and clinical component of the course, Concepts of Public Health.

### Measures

Two instruments were utilized within the study: The Demographical Data Survey and the PCKT.

**Demographical Data Survey:** The Demographical Data Survey which was created by this researcher provided descriptive data for the subjects. The Demographical Data Survey included: sex; age; race; ethnicity; duration as a nurse; setting of practice; number of palliative care in-services/continuing education courses attended in the last two years; and a relative or significant other cared for within a palliative care unit.

**Palliative Care Knowledge Test (PCKT):** Permission was granted to utilize the PCKT [8]. The PCKT measured knowledge of palliative care. The self-administered test contained 20 "True". "False", or "Unsure" items. The PCKT contains five subsets: philosophy of palliative care (items 1-2); symptoms of pain (items 3-8); dyspnea (items 9-13); psychiatric (items 13-16), and gastrointestinal problems (items 17-20). A score of 20 is the highest achievable score which can be converted to a percentage score. The achieved score by the subjects was divided by the total number to get a decimal, then the decimal was multiplied by 100 to get a percentage [8].

Nakazawa et al. [8] established reliability of the PCKT with internal consistency and a test-retest examination. The internal consistency was established at 0.81. The intraclass correlation for test-retest examination for the instrument was 0.88. The intraclass correlation for the five subsets of the PCKT ranged from 0.61 to 0.82. Nurses working on a palliative care unit had higher palliative care knowledge than other nurses in the sample ($p < 0.001$) for the total PCKT and on the five subsets ($p < 0.01$ to $p < 0.001$) which established the known group validity. The significance level was $p < 0.05$ (2-tailed) which was set by the researchers [8].

According to DeVon et al. [20], a research tool needs to have an internal consistency of > .70 to demonstrate acceptable reliability, and the PCKT had an internal consistency of .81. The PCKT established a high correlation of .88 on the test-re-test, and the standard correlation was > .70. The validity for the PCKT was labeled criterion validity because of low significance levels. The r should have been > .45 to be adequate [20].

### Analytical Strategies

Data was analyzed utilizing SPSS software, Version 23 [21]. Descriptive statistics were used to describe demographic variables and the PCKT's total and subsets. Frequency was used to determine the responses on the individual PCKT items. Lastly, paired sample t-test was utilized to determine the differences in the mean scores pre and post-intervention on the PCKT and the PCKT's subsets pre and post educational intervention. The sample size for this study was greater than 30.

## Results

### Demographics

A convenience sample of 136 RN to BSN students over a two-year period were invited to participate in the study. There were 109 (80%) subjects who completed the PCKT pre-intervention, and there were 81 (59.6.8%) who completed the PCKT post-intervention. The subjects were white and consisted of females (n = 91); males (n = 7); missing value (n = 11). The age of study subjects ranged from 22 to 60 years of age. The mean age of the sample was 33.8 years of age with a standard deviation of 8.9. The duration as a nurse for the study subjects ranged from 6 months to 34 years. The mean duration as a nurse was 8.2 years. The majority of the study subjects worked in a hospital (n = 88) compared to a clinic (n = 8), long term care facility (n = 5), home health (n = 6), hospital/long term care facility (n = 1) and missing value (n = 1). Eighty-two subjects reported not having attended an in-service related to palliative care within the last two years, compared to 17 subjects attended one in-service, 8 subjects attended two in-services, and 2 subjects attended three in-services related to palliative care. Sixty-five subjects reported not having had a relative or significant other in a palliative care unit, compared to 40 subjects who reported having had a relative or significant other in a palliative care unit. There were four missing responses on reporting if a relative or significant other had been in a palliative care unit.

### Study Subjects Responses on the PCKT

#### Pre-Intervention

The study subject scored below 50% on eight (4, 6, 7, 10, 11, 13, 14, and 16) of the 20 questions on the PCKT. The subset of philosophy on the PCKT had two of the highest scored items on the PCKT. Ninety-six percent of the sample responded correctly on the question, "Some dying patients will require continuous sedation to alleviate suffering", and 89% of the sample responded correctly on the question, "Palliative care should not be provided along with anti-cancer treatments". Table 1 reports the responses for the PCKT items for the total study sample pre-educational intervention. The subjects achieved a total mean score of 10.9 (SD = 2.0) on the PCKT pre-educational intervention. The study subjects scored the lowest on the subset of pain (Mean = 2.66; SD = 1.12) and psychosocial issues (Mean = 1.9; SD = 0.90) on the PCKT pre-educational intervention. The study subjects scored the highest on the subsets of philosophy (Mean = 1.68; SD = 0.54)

and gastrointestinal problems (Mean = 2.67; SD = 0.89). Table 2 represents the descriptive statistics for the subsets of the PCKT pre-educational intervention.

| Subsets | Questions | Responses f (%) | | | |
|---|---|---|---|---|---|
| | | True | FALSE | Unsure | Missing |
| **Philosophy** | | | | | |
| Item1 | Palliative care should only be provided for patients who have no curative treatment available. | 19(17.4) | *87(79.8) | 3(2.8) | - |
| Item 2 | Palliative care should not be provided along with anti-cancer treatments. | 9(8.3) | *97(89) | 3(2.8) | - |
| **Pain** | | | | | |
| Item 3 | One of the goals of pain management is to get a good night's sleep. | *93(85.3) | 9(8.3) | 3(2.8) | 4(3.7) |
| Item 4 | When cancer pain is mild, pentazocine (Talwin) should be used more often than an opioid. | 25(22.9) | *26(23.9) | 55(50.5) | 3(2.8) |
| Item 5 | When opioids are taken on a regular basis, non-steroidal anti-inflammatory drugs should not be used. | 15(13.8.) | *77(70.6) | 17(15.6) | |
| Item 6 | The effect of opioids should decrease when pentazocine (Talwin) or buprenorphine hydrochloride (Buprenex) is used together after opioids are used. | *18(16.5) | 23(21.1) | 67(61.5) | 1(0.9) |
| Item 7 | Long-term use of opioids can often induce addiction. | 95(87.2) | *14(12.8) | - | -+ |
| Item 8 | Use of opioids does not influence survival time. | *60(55) | 37(33.9) | 11(10.1) | 1(0.9) |
| **Dyspnea** | | | | | |
| Item 9 | Morphine should be used to relieve dyspnea in cancer patients. | *55(50.5) | 44(40.4) | 9(8.3) | 1(0.9) |
| Item 10 | When opioids are taken on a regular basis, respiratory depression will be common. | 61(56) | *46(42.2) | 2(1.8) | |
| Subsets | Questions | Responses f (%) | | | |
| | | TRUE | FALSE | Unsure | Missing |
| Item 11 | Oxygen saturation levels are correlated with dyspnea. | 80(73.4) | *29(26.6) | - | - |
| Item 12 | Anticholinergic drugs or scopolamine hydrobromide (Transderm-V) are effective for alleviating bronchial secretions of dying patients. | *88(80.7) | 7(6.4) | 14(12.8) | - |
| **Psychosocial** | | | | | |
| Item 13 | During the last days of life, drowsiness associated with electrolyte imbalance should decrease patient discomfort. | *21(19.3) | 67(61.5) | 21(19.3) | - |
| Item 14 | Benzodiazepines should be effective for controlling delirium. | *50(45.9) | 41(37.6) | 18(16.5) | |
| Item 15 | Some dying patients will require continuous sedation to alleviate suffering. | *105(96.3) | 1(0.9) | 2(1.8) | 1(0.9) |
| Item 16 | Morphine is often a cause of delirium in terminally ill cancer patients. | 52(47.7) | *34(31.2) | 23(21.1) | - |
| **Gastro-Intestinal Problems** | | | | | |
| Item 17 | At terminal stages of cancer, higher calorie intake is needed compared to early stages. | 30(27.5) | 66(60.6) | 13(11.9) | - |
| Item 18 | There is no route except central venous for patients unable to maintain a peripheral intravenous route. | 11(10.1) | *95(87.2) | 2(1.8) | 1(0.9) |
| Item 19 | Steroids should improve appetite among patients with advanced cancer. | *62(56.9) | 30(27.5) | 17(15.6) | - |
| Item 20 | Intravenous infusion will not be effective for alleviating dry mouth in dying patients. | *68(62.4) | 32(29.4) | 9(8.3) | - |
| Note. Correct responses with asterisks and bold typed. From "The palliative care knowledge test: reliability and validity of an instrument to measure palliative care knowledge among health professionals," by Y. Nakazawa M, et al. [8]. | | | | | |

**Table 1:** Responses for the PCKT Items for the Total Study Sample Pre-Educational Intervention.

| | Subjects |
|---|---|
| | (n = 109) |
| PCKT | M (SD) |
| Subsets | |
| *(Questions/subset) | |
| Philosophy (2) | 1.68 (0.54) |
| Pain (6) | 2.66 (1.12) |
| Dyspnea (4) | 2.02 (0.99) |
| Psychosocial (4) | 1.92 (0.90) |
| Gastrointestinal (4) | 2.67 (0.89) |
| Note. (n) = number of population. M = mean. (SD) = standard deviation. *Questions/subsets denotes the number of questions in each subset. | |

**Table 2:** PCKT Subsets Scores Pre-Educational Intervention.

**Post-Intervention**

The subjects scored below 50% on six (4, 6, 10, 11, 13, and 16) of the 20 questions on the PCKT. Ninety-five percent of the sample responded correctly on the question, "One of the goals of pain management is to get a good night's sleep", and 94% of the sample responded correctly on the question, "Some dying patients will require continuous sedation to alleviate suffering". Table 3 demonstrates the responses for the PCKT items for the total study sample post-educational intervention. The study subjects achieved a total mean score of 12.1 (SD = 3.0) on the PCKT post-educational intervention. The study subjects scored the lowest on the subset of pain (Mean = 2.91; SD = 1.12) and psychosocial issues (Mean = 2.4; SD = 0.99) on the PCKT post-educational intervention. The study subjects scored the highest on the subsets of philosophy (Mean = 1.39; SD = 0.84) and gastrointestinal problems (Mean = 2.67; SD = 0.89). Table 4 reports the descriptive statistics for the subsets of the PCKT pre-educational intervention.

| Subsets | Questions | Responses f (%) | | | |
|---|---|---|---|---|---|
| | | True | FALSE | Unsure | Missing |
| **Philosophy** | | | | | |
| Item1 | Palliative care should only be provided for patients who have no curative treatment available. | 20(23.8) | *64(76.2) | - | - |
| Item 2 | Palliative care should not be provided along with anti-cancer treatments. | 11(13.1) | *71(84.5) | - | 2(2.4) |
| **Pain** | | | | | |
| Item 3 | One of the goals of pain management is to get a good night's sleep. | *80(95.2) | 2(2.4) | - | 2(2.4) |
| Item 4 | When cancer pain is mild, pentazocine (Talwin) should be used more often than an opioid. | 42(50) | *18(21.4) | 22(26.2) | 2(2.4) |
| Item 5 | When opioids are taken on a regular basis, non-steroidal anti-inflammatory drugs should not be used. | 28(33.3) | *45(53.6) | 9(10.7) | 2(2.4) |
| Item 6 | The effect of opioids should decrease when pentazocine (Talwin) or buprenorphine hydrochloride (Buprenex) is used together after opioids are used. | *29(34.5) | 21(25) | 32(38.1) | 2(2.4) |
| Item 7 | Long-term use of opioids can often induce addiction. | 65(77.4) | *16(19) | 1(1.2) | 2(2.4)+ |
| Item 8 | Use of opioids does not influence survival time. | *49(58.3) | 25(29.8) | 8(9.5) | 2(2.4) |
| **Dyspnea** | | | | | |
| Item 9 | Morphine should be used to relieve dyspnea in cancer patients. | *63(75) | 16(19) | 3(3.6) | 2(2.4) |
| Item 10 | When opioids are taken on a regular basis, respiratory depression will be common. | 37(44) | *41(48.8) | 4(4.8) | 2(2.4) |
| Subsets | Questions | Responses f (%) | | | |
| | | TRUE | FALSE | Unsure | Missing |
| Item 11 | Oxygen saturation levels are correlated with dyspnea. | 53(63.1) | *23(27.4) | 6(7.1) | 2(2.4) |
| Item 12 | Anticholinergic drugs or scopolamine hydrobromide (Transderm-V) are effective for alleviating bronchial secretions of dying patients. | *78(92.9) | 1(1.2) | 3(3.5) | 2(2..4) |

| | | | | | |
|---|---|---|---|---|---|
| **Psychosocial** | | | | | |
| Item 13 | During the last days of life, drowsiness associated with electrolyte imbalance should decrease patient discomfort. | *36(42.9) | 38(45.2) | 8(9.5) | 2(2.4) |
| Item 14 | Benzodiazepines should be effective for controlling delirium. | *52(62) | 15(17.8) | 15(17.8) | 2(2.4) |
| Item 15 | Some dying patients will require continuous sedation to alleviate suffering. | *79(94) | 2(2.4) | 1(1.2) | 2(2.4) |
| Item 16 | Morphine is often a cause of delirium in terminally ill cancer patients. | 37(44) | *34(40.5) | 10(11.9) | 3(3.6) |
| **Gastro- Intestinal Problems** | | | | | |
| Item 17 | At terminal stages of cancer, higher calorie intake is needed compared to early stages. | 15(17.9) | 62(73.7) | 5(6) | 2(2.4) |
| Item 18 | There is no route except central venous for patients unable to maintain a peripheral intravenous route. | 13(15.5) | *69(82.1) | - | 2(2.4) |
| Item 19 | Steroids should improve appetite among patients with advanced cancer. | *50(59.5) | 21(25) | 11(13.1) | 2(2.4) |
| Item 20 | Intravenous infusion will not be effective for alleviating dry mouth in dying patients. | *63(75) | 11(13.1) | 8(9.5) | 2(2.4) |
| Note. Correct responses with asterisks and bold typed. From "The palliative care knowledge test: reliability and validity of an instrument to measure palliative care knowledge among health professionals," by Y. Nakazawa M, et al. [8]. | | | | | |

**Table 3:** Responses for the PCKT Items for the Total Study Sample Post-Educational Intervention.

| | Subjects |
|---|---|
| | (n = 81) |
| PCKT | M (SD) |
| Subsets | |
| *(Questions/subset) | |
| Philosophy (2) | 1.39 (0.83) |
| Pain (6) | 2.91 (1.12) |
| Dyspnea (4) | 2.50 (0.96) |
| Psychosocial (4) | 2.44 (0.99) |
| Gastrointestinal (4) | 2.67 (0.89) |
| Note. (n) = number of population. M = mean. (SD) = standard deviation. *Questions/subsets denotes the number of questions in each subset. | |

**Table 4:** PCKT Subsets Scores Post-Educational Intervention.

A paired-samples t-test was conducted to determine if the educational intervention had an effect on the students' total scores on the PCKT. There was a statistically significant difference in total PCKT scores from pre-educational intervention (M = 11.1, SD = 2.06) to post-educational intervention (M = 12.4), t (81) = -4.22, p < .000, r = .18. The mean increase in scores was 1.3 with a 95% confidence interval ranging from -2.02 to -0.72`. The eta squared statistic (0.18) indicated a large effect size. A paired-samples t-test was conducted to determine if the educational intervention had an effect on the students' total scores on the PCKT's subsets. There was no statistically significant difference in scores on the PCKT's subset of philosophy, but there was a statistically significant increase in scores on the PCKT's subsets of pain, dyspnea, psychosocial, and gastrointestinal problems. Table 5 represents the paired samples t-test statistics for the PCKT's subsets.

| | (n)=81 | | | | |
|---|---|---|---|---|---|
| | | 95% CI | | | |
| Subsets | M(SD) | LL | UL | t(81) | *p |
| Pre-philosophy-Post-philosophy | .06(.66) | - | 0.21 | 0.84 | 0.401 |
| Pre-pain-Post-pain | -.35(1.5) | 0.07 | -0.08 | -2.1 | 0.041 |
| Pre-dyspnea-Post-dyspnea | -.52(1.0) | -0.75 | -0.28 | -4.4 | 0 |
| Pre-psychosocial-Post-psychosocial | -.41(1.3) | -0.69 | -0.13 | -2.9 | 0.005 |
| Pre-gastro-intestinal-Post-gastro-intestinal | -.23(1.0) | -0.46 | 0 | -2 | 0.046 |
| Note. (n) = number of population. M = mean. (SD) = standard deviation. CI = Confidence Interval. LL = Lower Limit. UL = Upper Limit. t = t-statistic. *p = < .05 (2- tailed). | | | | | |

**Table 5:** Paired-Samples Statistics for the PCKT's Subsets.

## Discussion

The results from this study support the findings of previous studies [9,10,12,14] that nurses lack knowledge of palliative care. The study subjects achieved a total mean score of 10.9 out of 20 on the PCKT pre-educational intervention. The majority of the study subjects (n = 82) reported not having attended a palliative care in-service/continuing education in the last two years. The moderate to low mean scores achieved on the PCKT and the lack of in-service/continuing education supported the need to integrate palliative care and EOL content within the public health nursing course.

A basic 1-hour educational module on palliative care and EOL content was implemented in the didactic component and observed in the clinical components of the public health nursing course. The educational module and the observational eight-hour clinical experience served as an intervention to increase the knowledge of palliative care. Studies [7,11,12] supported the need to incorporate palliative care and EOL content in undergraduate nursing curriculum to increase the knowledge of palliative care. The study subjects achieved a total mean score of 12.1 out of 20 on the PCKT post-educational intervention. Since a statistically significant difference in total PCKT scores from pre-educational intervention to post-educational intervention was achieved, the basic educational module and the application in clinical may have influenced the knowledge of palliative care for the study subjects.

## Clinical Implications

Palliative care is an option for the aging population to receive patient-centered quality health care. Regardless of the setting, nurses must have knowledge of the basic principles and concepts of palliative care. Therefore, nurses must be equipped with palliative care and EOL content to be better prepared to assist patients and their families across the health care continuum.

## Limitation

A limitation of the study was the length of the educational intervention. The educational intervention was one time and for one hour in length which limited the quantity of information provided to the study subjects. The study subjects were practicing RNs in a variety of healthcare settings. The investigator felt if the length of time of the public health course was longer could have presented more palliative care and EOL content. The nursing program that the study subjects attended was an on-line nursing program which may have hindered the subjects from asking for further clarification about the content in the educational module. The observational clinical experience was implemented in various locations which may have influenced the understanding of the educational module. The majority of the study subjects (n = 82) were practicing in acute care setting.

## Recommendations

Although nursing curriculum is extensive, nursing curriculum must incorporate palliative care and EOL content to meet the needs of the aging population. The application of the principles and content of palliative care may encourage the study subjects to value palliative care as much as curative care. Since the study subjects were practicing nurses, these nurses can act as an advocate or a resource person for patients and their families who wish to choose palliative care as a healthcare option.

## Summary

This study found that RNs who have returned to the university to complete their Bachelors of Science in nursing degree may have a moderate to low level of palliative care knowledge. Basic education in palliative care is needed to ensure that practicing nurses are aware of the principles and symptom management to care for their patients and families to provide patient centered quality healthcare.

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