Rural Long Term Care Nurses' Knowledge of Palliative Care

Carol A Evans, DNP, RN, NED, CNE [1]

[1] Associate Professor, RN-BSN Program, School of Nursing, Western Kentucky University, carol.evans@wku.edu

Abstract

Purpose: Regardless of the location, rural nurses care for patients and their families across the trajectory of an illness and into death in long term care facilities. The purpose of this study was to examine rural nurses' knowledge of palliative care for end of life patients in long term care facilities.

Method: A quantitative descriptive correlational design was utilized with a convenience sample of nurses (registered nurses and licensed practical nurses) in three rural long term care facilities in south-central Kentucky. Demographical data was utilized to describe the study subjects, and the Palliative Care Knowledge Test was utilized to measure the rural nurses' knowledge of palliative care. Descriptive statistics and Cross-tabs with a Chi-square test for independence were used for analysis.

Findings: The rural nurses lacked knowledge of palliative care on the Palliative Care Knowledge Test. Although the study sample scored below 50%, registered nurses were more knowledgeable than licensed practical nurses on many of the items on the Palliative Care Knowledge Test. This study supports that the total years practiced in long term care does not affect the knowledge on the Palliative Care Knowledge Test. Registered nurses were more knowledgeable than licensed practical nurses on some items of the Palliative Care Knowledge Test.

Conclusion: Nurses cannot practice what they do not know. Nurses who lack knowledge about the philosophy and principles of palliative care may lower the quality of end of life care for

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patients in long term care facilities. An evaluation of the knowledge level of nurses for palliative care is an important first step in instituting an educational intervention.

Keywords: Rural nurses, Palliative care knowledge, Palliative Care Knowledge Test

Rural Long Term Care Nurses' Knowledge of Palliative Care

Regardless of the geographic location, nurses care for patients and their families in long term care (LTC) facilities across the trajectory of an illness and into death. A rural LTC facility is a facility that is located within an area with a population of less than 50,000 people (United States Census Bureau [USCB], 2013). According to the American Nurses Association's (ANA) (2016), nurses are expected to provide 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 (ANA, 2016).

The American Association of Colleges of Nursing (AACN) has recognized that EOL issues in nursing curriculum have been inconsistent or missing. As a result, the AACN has created EOL Competency Statements that every undergraduate nursing student should achieve. Nursing faculty in colleges and universities can voluntarily integrate this content into curriculum at their institutions (AACN, n.d.a.).

The AACN in Washington, D. C. and the City of Hope in Los Angles, California direct the End of Life Nursing Education Consortium (ELNEC). This researcher is an ELNEC-Geriatric Trainer who wishes to disseminate the ELNEC-Geriatric educational content to nurses in rural LTC facilities. The ELNEC-Geriatric curriculum addresses the palliative care educational essentials for nurses who may practice in rural LTC facilities. The ELNEC-Geriatric program

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contains nine modules and geriatric patterns are incorporated across each module. A distinctive feature of the program is geriatric palliative care (AACN, 2016).

Palliative care is a specialty within its own right. Curative or disease modifying treatments can be continued with palliative care, but this is not the case with hospice care where the prognosis of living is six months or less (Meier, 2011). According to Ferrell et al. (2007), individuals in palliative care can live weeks, months, or years with their chronic illness. A multidisciplinary approach is utilized in palliative care to promote the best quality of life for the patients and their families. Palliative care will assess and manage symptoms, support the patients' decisions and keep patients and their families informed to reach attainable goals (Ferrell et al., 2007).

According to Artnak, McGraw, and Stanley (2011), geographical location does create a disparity between the health care needed and the health care received. The Institute of Medicine (IOM) and the Institute for Healthcare Improvement (IHI) Triple Aim Initiative has created a framework to summon all that are involved in healthcare to recreate healthcare in concurrence with specific objectives (Artnak et al., 2011). According to DiBello and Coyne (2014), the specific objectives of the Triple Aim Initiative include improving patient experience, population health, and reducing healthcare costs. Artnak et al. (2011) estimates that by the year 2050, the population of 65 years and over will double. Some of this elderly population will be in LTC facilities which demand entrance and continuous healthcare services that are not being met because of a lack of accessibility to palliative care (Artnak et al., 2011).

Madigan, Wiencek, and Vander Schrier (2009) examined availability patterns of community-based EOL providers in eight states of the United States. The community-based EOL providers were Medicare-eligible since Medicare protects individuals 65 years of age and

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older. Skilled nursing facilities, home health agencies, and hospices which were either home-based or residential were the most common community-based providers. Hospice was the least available community-based EOL provider in the study population. Madigan et al., (2009) found that 62% to 92% of the study population of rural counties did not have hospice providers.

Patients who reside in rural LTC facilities have chronic diseases, and Carter and Chichin, 2003 (as cited in Brazil, Brink, Kaasalainen, Kelly& McAinery, 2012) predicts that 40% of the 65 years of age and older population in the United States will die in LTC facilities which demonstrate the need for nurses working in LTC facilities having knowledge of providing EOL care. Palliative care is an option for EOL care. Nurses are the healthcare professional in rural LTC facilities who are responsible to ensure that patients' healthcare choices will be implemented. The purpose of this quantitative descriptive correlational study was to examine nurses' (registered nurses (RNs) and licensed practical nurses (LPNs)/licensed vocational nurses (LVNs) knowledge of palliative care for EOL patients in rural LTC facilities. The knowledge of palliative care encompasses the philosophy and principles of palliative care, management of pain and other symptoms, spiritual, and psychosocial aspects of care (Ross, McDonald, & McGuinness, 1996).

Background

Nurses in rural LTC facilities are on the frontline in providing palliative care to the geriatric population. This population can have life-limiting conditions or diseases and may choose palliative care at any stage in the trajectory of their illness. Palliative care will provide patient-centered care that enhances quality of life, facilitates patient independence, access to information, and choice of treatments during times of distress for the patient and their families (Mahon & McAuley, 2010).

The knowledge of palliative has been measured most frequently with the Palliative Care Quiz for Nurses (PCQN). The validity and reliability of the PCQN was established in 1996, but the definition of palliative care does not follow the World Health Organization (WHO, n.d.) definition of palliative care (Nakazawa et al., 2009). According to the WHO (n.d.), palliative care is a specialty of healthcare that will increase the quality of life for patients and their families that is confronted with a life-threatening illness. Palliative care is implemented with early and thorough assessments and the treatment of pain and other symptoms, physical and spiritual factors to prevent and relieve suffering (WHO, 2014). The Palliative Care Knowledge Test (PCKT) was selected because it reflects the most recent definition of palliative care by the WHO (Nakazawa et al., 2009; WHO, n.d.).

Ross et al., (1996) investigated the level of knowledge of palliative care with the Palliative Care Quiz for Nurses (PCQN) in a generic 4-year baccalaureate nursing program and a post-RN nursing program that were progressing toward a baccalaureate nursing degree and nurses who were practicing that had obtained a RN license or registered practical nurse license. The mean scores for RNs were 75%, post-RN students were 65%, registered practical nurses were 60%, and generic nursing students were 46%. The mean percentage of correct responses on the PCQN for the total sample was 61% out of 100% which demonstrated that nursing students and nurses lack knowledge of palliative care (Ross et al., 1996). According to Prem et al. (2012), nurses had a low understanding of the philosophy of palliative care and a low understanding of the general knowledge of palliative care. Brazil et al. (2012) found nurses in LTC facilities had a mean score of 59.5% out of 100% on the PCQN, According to Brazil et al. (2012), nurses in the study understood 12 out of 20 questions pertaining to palliative care on the PCQN .

Hodgson, Landsberg, Lehning, and Kleban (2006) conducted a mailed survey of 91 administrators of LTC facilities in Pennsylvania. Investigators found that urban LTC facilities were more likely to offer palliative care services than a rural LTC facility. The rural LTC facilities identified a need for training in pain management, and the urban facilities identified a need for bereavement training. Larger LTC facilities were found to have established pain management practices within their facilities which were independent of geographical location. The interdisciplinary team which is fundamental to palliative care is usually not found in a rural setting. The majority of the facilities in this study were nonprofit. According to Hodgson et al., (2006), geographical location can affect accessibility and delivery of the physical and social aspects of palliative care (Hodgson et al., 2006).

Significance of Project for Nursing and Health Care

The United States Department of Health and Human Services, Centers for Medicare and Medicaid (CMS), and the National Quality Forum (NQF) describe palliative care as patient and family-centered care. According to the National Consensus Project for Quality Palliative Care (NCPQPC, 2013), palliative care augments quality of life by anticipating, inhibiting, and managing suffering. Palliative care provided throughout the trajectory of illness addresses the physical, intellectual, emotional, social, and spiritual needs and enables patient autonomy, right of information, and choice for patients and their families (NCPQPC, 2013).

The IOM's (2015) report entitled, *Dying in America: Improving Quality and Honoring Individual Preferences Near the End of Life* recommends several key factors related to palliative care. Health care should provide patient and family centered care that is available to EOL patients everywhere and delivered by health care organizations which are covered by federal and private insurers. Advance care planning should take place but not replace continuous open

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communication with the patient and family about EOL issues. Educational institutions and health care professionals should expand the palliative care knowledge base. The IOM also recommends a reorientation of reimbursement systems to reflect the needs and preferences of patients at the EOL. Lastly, the IOM recommends that there is a need for public education and dialogue on EOL issues (IOM, 2015).

Nurses in rural LTC facilities are on the frontline in providing palliative care to the geriatric population. This population can have life-limiting conditions or diseases and may choose palliative care at any stage in the trajectory of their illness. Palliative care will provide patient-centered care that enhances quality of life, facilitates patient independence, access to information, and choice of treatments during times of distress for the patient and their families (Mahon & McAuley, 2010).

Theoretical Foundation

The study can be conceptualized by applying the Donabedian model. According to Moran (2014), the Donabedian model demonstrates that quality healthcare flows from three categories: structure, process, and outcome. A quality structure leads to quality processes which lead to quality patient outcomes (Moran, 2014). According to McQuestion (2006), the structure is the characteristics of the setting where palliative care will be provided. The process category of Donabedian model determines if best practices have been carried out or have not been carried out. The outcome of Donabedian model determines the impact that the healthcare services have on the health status of the patient and their families (McQuestion, 2006).

In the Donabedian quality of care framework, quality improvement occurs when deficits in the structure and process categories are corrected or improved which requires the structure and the processes to be monitored. This feedback assists with quality improvement (McQuestion, 2006). As the field of palliative care evolves, nurses' knowledge and perceived

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confidence/competency to provide palliative care to EOL patients in rural LTC facilities are examined in the context of a quality improvement framework utilizing the Donabedian model.

Structure.

The structure describes the characteristics of the three rural LTC facilities in south-central KY. The structure of the rural facilities can be described by the nursing home profile. The nursing home profile provides information on the number of certified beds, participation within Medicare and Medicaid, ownership, placement of automatic sprinkler systems within the facility, location within a continuing care retirement community or hospital, and accessibility of a resident and/or family council (CMS, n.d.a).

There are more characteristics that are important to the structure of the LTC facility. The number of patients who reside at the LTC facility is a characteristic. An important characteristic is the personnel who provide direct care such as the RN, LPN/LVN, certified nurse aide (CNA), and the physical therapist (PT). A LTC facility must have at least one RN on duty for eight straight hours, seven days a week, and either a RN or a LPN/LVN on duty twenty-four hours per day. The federal government does not mandate a specific staffing level for LTC facilities (CMS, n.d.b).

According to Ferrell et al. (2007), the National Quality Forum (NQF) in 2007 published a set of preferred clinical practices for quality palliative care which can be implemented across the continuums of care. The NQF's preferred clinical practices were created from the NCPQPC. The NCPQPC outlined a framework that defined eight domains of quality palliative care. The NCPQPC's domain one addresses that healthcare professionals should receive advanced training and certification in palliative care (Ferrell et al., 2007). Since nurses are providing care and

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educating the patient and their families about choices, nurses in rural LTC facilities must have the knowledge of palliative care.

Process.

The process category of the Donabedian model determines if best practices have been followed or have not been followed (McQuestion, 2006). According to Ferrell et al., (2007), the NCP's domains two through eight addresses the physical, psychological, social, and spiritual needs that are required of palliative care patients. The NCP's domains also recognize the importance that culture has on illness and death, and the essentials of palliative care become more imperative as the patient nears death. The NQF's preferred clinical practices are voluntary and are not a requirement for certification for LTC facilities at this time (Ferrell et al., 2007).

The time that the personnel (RNs, LPNs/LVNs, CNAs, PTs) work at the LTC facilities has a direct impact on if best practices have been followed or have not been followed. The total number of hours that is provided by licensed staff nurses (RNs and LPNs/LVNs) per patient per day is reflective of the characteristics of the LTC facility. The CNA provides care to patients every hour of every day. The care that the PT provides is dependent on the needs of the patient. The staffing hours from the LTC facilities are reported to the state survey agency two weeks before an inspection. The staff hours are the amount of hours provided to each patient per day. The staffing hour per patient per day ratio is calculated by dividing the time worked by the number of patients at the LTC facility (CMS, n.d.b).

The MDS Version 3.0 is an assessment done by the nurses at the LTC facilities at fixed intervals on every patient who resides in a Medicare or a Medicaid certified facility. The MDS Version 3.0 collects information on the patient's health, physical activity, psychological status, and overall well-being. The information from the MDS Version 3.0 is utilized to evaluate the patient's needs and create a plan of care. The quantity of time that RNs and LPNs/LVNs work

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with patients can greatly impact if the plan of care or if best practices have been followed (CMS, n.d.a).

Outcome.

The outcome category of the Donabedian model is the result of the structure and process category (McQuestion, 2006). According to the CMS (n.d.a), LTC facilities are rated on a scale of one to five stars. A facility with five stars is considered to have above average quality when compared to another facility in the same state. When the LTC facility has one star, the quality is below the average in that state, but the LTC facility still meets Medicare's minimum requirements. Therefore, the more stars the LTC facility has the higher quality of care that the facility provides. The overall five star rating is established on the star ratings from three different categories such as health inspections, quality measures, and staffing levels. The health inspection rating includes information on annual visits, complaint investigation findings, and onsite inspections from the last three years. The quality measure rating is based on the factors of percentage of patients with pressure ulcers, patients with mild to severe pain, and number of patients who have had changes in their mobility. The quality measure rating explains how well the LTC facilities provide care for these measures. The staffing level rating provides information on the amount of time of care that is given by the nursing staff to each patient in a day. The staffing level rating takes into consideration the level of care that is needed in the different LTC facilities too (CMS, n.d.a).

According to CMS (n.d.a), the overall star rating system for LTC facilities comes from different sources. The CMS's Health Inspection database includes information on the LTC facility's attributes and health deficits that occurred within the last three state inspections and compliant investigations. Information for the staffing category comes from the star rating system

and penalties that have been imposed on LTC facilities which are derived from the CMS Health Inspection database too. The quality measure category from the five star rating system is derived from Minimum Data Set (MDS) Repository (CMS, n.d.a).

Information from on-site inspections from state surveyors is entered into the Online Survey, Certification and Reporting (OSCAR) data network which is maintained by CMS and the state surveying agencies. The OSCAR data contains information for the purpose of certification of LTC facilities for participation in the Medicare and Medicaid programs. The OSCAR entails the utmost comprehensive source of a LTC facility's level of information regarding the facility's operations, patient census and regulatory compliance. On-site evaluations occur once during a 15 month interval or in response to a complaint being investigated. During on-site inspections, state surveyors will collect information on the LTC facility's standard health and life safety deficits. The information collected on the Standard Health Survey are assessed to determine if the LTC facility is providing care and services that meet the federal government's standard of quality healthcare and the patient's assessed needs. Information that is gathered on the Life Safety Survey are assessed to determine if the LTC facility is meeting the requirements for the Life Safety Code fire and building safety standard which is integrated into the federal requirements (American Health Care Association [AHCA], n.d.).

When state surveyors discover a substandard of healthcare, a follow-up visit will be conducted. A substandard quality of care is described as a LTC facility having one or more deficiency with scope/severity levels on the MDS Version 3.0 sections' F, H, I, J, K, and L in any of the regulatory grouping of Patient Behavior and Facility Practices, Quality of Life, and

Quality of Care. On the follow-up visit, the state surveyors will reevaluate if the LTC care facility is in compliance with the standard of quality care and service (CMS, n.d.c).

The conceptual framework of Donabedian model provides a foundation for quality improvement within this study. The structure of where nurses are practicing can impact if nurses have the knowledge of palliative care. The process of Donabedian model can assess if nurses in rural LTC facilities have implemented the NCP's preferred clinical practices for quality palliative care. The outcome of Donabedian model will evaluate the quality of palliative care that patients in rural LTC facilities received and if improvements need to be made.

The research questions for this study were:

- What is rural nurses' knowledge of palliative care as measured by the PCKT for EOL patients in LTC facilities?
- What is rural nurses' knowledge of the different subsets of palliative care as measured by the PCKT for EOL patients in LTC facilities?
- Is there a difference on the Palliative Care Knowledge Test (PCKT) items and the demographic variables such as age, highest education level completed in nursing, duration as a nurse, duration of employment, and total years practiced in LTC facilities for rural nurses?

Methodology

A quantitative descriptive correlational design was implemented. After ethical consideration for human subjects was approved by the university's Institutional Review Board (IRB) and approval by directors of nursing (DONs) and administrators from participating facilities, a convenience sample of RNs and LPNs/LVNs were recruited from three rural LTC facilities. A recruiter statement was read to potential subjects by the researcher. A convenience sample from three rural LTC facilities was utilized. All nurses employed at the facilities had the

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opportunity to participate regardless of their gender, age, racial, ethnic group, marital status, socioeconomic status, or level of education. The inclusion criteria were that the nurses had to have an active license to practice nursing in the state of KY and be English speaking. The rural LTC facilities were for-profit, accept Medicare, Medicaid, and private reimbursement from their patients, and were located in south-central KY.

Measures

The researcher received permission to utilize the PCKT (Nakazawa et al., 2009). Two instruments were utilized within the study: the Demographical Data Survey and the PCKT.

Demographical data survey.

The Demographical Data Survey which was developed by this researcher provided descriptive data for the rural nurses. The Demographical Data Survey included: age; race; ethnicity; highest educational level completed; years employed at present facility; total years employed in LTC facilities; number of palliative care in-services/continuing education courses attended within the last two years; level of care (personal care, intermediate care, or skill care) worked at the LTC facilities; and a relative or significant other cared being for in a palliative care unit.

Palliative Care Knowledge Test (PCKT).

The PCKT measured knowledge of palliative care (Nakazawa et al., 2009). The self-administered test contained 20 "true", "false", or "unsure" items. The philosophy of palliative care subset (items 1-2) and the symptoms of pain (items 3- 8), dyspnea (items 9 –12), psychiatric (items 13- 16), and gastrointestinal problems (items 17-20) were measured with the PCKT. The highest achieved possible score is 20 which can be converted to a percentage score. The achieved score was multiplied by five to calculate the achieved percentage of correct responses (Nakazawa et al., 2009).

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Nakazawa et al. (2009) 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 tool was 0.88. The five subsets of the PCKT had an intraclass correlation that ranged from 0.61 to 0.82. The known-group validity for the PCKT was established by comparing nurses working on a palliative care unit with other nurses in the sample. The known-group validity for the PCKT was $p < 0.001$ which was established between the two groups. Validity for the five categories varied between $p < 0.01$ to $p < 0.001$. The researchers set the significance level at $p < 0.05$ (2-tailed) (Nakazawa et al., 2009).

According to DeVon et al. (2007), the PCKT demonstrated acceptable reliability because the internal consistency for a research tool needed to be ≥ .70, and the PCKT was .81. The PCKT demonstrated a high correlation of .88 on the test-re-test, and the acceptable correlation was ≥.70. The validity for the PCKT was labeled criterion validity because of the low significance levels. The *r* should have been ≥ .45 to be acceptable (DeVon et al., 2007).

Analytical Strategies

Data was analyzed using SPSS software, Version 23 (IBM, 2015). The statistical analyses utilized were descriptive to designate the quantitative data of demographic variables and PCKT total and subsets. The statistical analysis of frequency was used to determine the responses on the individual PCKT items. Lastly, *Cross-tabs* with a *Chi-square test for independence* was utilized to determine differences on the PCKT items and the demographic variables of age, highest education level completed in nursing, years as a nurse, years of employment, and total years practiced in rural LTC facilities. The assumption of *Chi-square* was examined with the *Yates' Correction for Continuity* to determine if the assumption was violated with a 2 by 2 table, the effect size was determined with the *phi coefficient* value. *Fisher's Exact Probability Test*

was utilized when the assumption of *Chi-square* was violated with a 2 by 2 table. The *Likelihood Ratio* was utilized to check for the violation of the assumption for *Chi-square* for 2 by 3 or larger table, and the effect size was determined with the *Cramer's V coefficient*. The alpha level was 0.05.

Findings

Demographics

A convenience sample of 33 nurses was recruited from an accessible population of 34 in-service/meeting attendees. The sample accounted for 97 percent of the accessible population. All 33 nurses met the inclusion criteria. The subjects were white and consisted of females (n = 30) and males (n = 3). The age of study subjects ranged from 25 to 61 years of age. The mean age of the sample was 44.5 years of age with a standard deviation of 9.5. The sample consisted of LPNs (n = 18) and RNs (n = 15). The duration as a nurse for the study subjects ranged from 1 month to 28 years. The majority of the study subjects worked on the skilled care level (n = 30) compared to the intermediate care level (n = 3) of the facility. Twenty-five subjects reported not having had a relative or significant other in a palliative care unit, compared to eight subjects who reported having had a relative or significant other in a palliative care unit.

Study Subjects Responses on the PCKT

The study subjects responded below 50% on seven (3, 5, 10, 12, 15, 17, and 18) of the 20 questions on the PCKT. The subset of philosophy on the PCKT had two of the highest scored items on the PCKT by LPN/LVNs and RNs. Eighty-five percent of the sample responded correctly on the question, "Palliative care should only be provided for patients who have no curative treatment available"; and 91% of the sample responded correctly on the question, "Palliative care should not be provided along with anti-cancer treatments". One hundred percent

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of the subjects responded correctly on item 6, "The effect of opioids should decrease when pentazocine (Talwin) or buprenorphine hydrochloride (Buprenex) is used together after opioids are used". *Table 1* demonstrates the responses for the PCKT items for the total study sample.

The rural nurses achieved a total score of 48.5% out of 100% with a mean of 9.7 (SD = 2.60) on the PCKT. The rural nurses scored the lowest on the subscales of dyspnea (Mean = 1.24; SD = 0.90) and psychosocial issues (Mean = 1.70; SD = 0.77) on the PCKT. The rural nurses scored the highest on the subscales of gastrointestinal problems (Mean = 2.42; SD = 1.03) and pain (Mean = 2.58; SD = 1.20). *Table 2* represents the descriptive statistics for the subsets of the PCKT.

Table 2

Rural Nurses PCKT Subsets Scores

	Rural (n = 33)
PCKT Subsets *Questions/subset	M (SD)
Philosophy (2)	1.76 (0.56)
Pain (6)	2.58 (1.20)
Dyspnea (4)	1.24 (0.90)
Psychosocial (4)	1.70 (0.77)
Gastrointestinal(4)	2.42 (1.03)

Note. (n) =number of population. M = mean. (SD) = standard deviation. *Questions/subset denotes the number of questions in each subset.

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Table 1

Responses for the PCKT Items for the Total Study Sample

Subsets Item	Questions	Responses *f* (%)			
		True	False	Unsure	Missing
	Philosophy				
Item1	Palliative care should only be provided for patients who have no curative treatment available.	5 (15.2)	***28** **(84.8)**	-	
Item 2	Palliative care should not be provided along with anti-cancer treatments.	2 (6.1)	***30** **(90.9)**	1 (3.0)	
	Pain				
Item 3	One of the goals of pain management is to get a good night's sleep.	***6** **(18.2)**	8 (24.2)	19 (57.6)	-
Item 4	When cancer pain is mild, pentazocine (Talwin) should be used more often than an opioid.	8 (24.2)	***17** **(51.5)**	8 (24.2)	
Item 5	When opioids are taken on a regular basis, non-steroidal anti-inflammatory drugs should not be used.	8 (24.2.)	***7** **(21.2)**	17 (51.5)	1 (3.0)
Item 6	The effect of opioids should decrease when pentazocine (Talwin) or buprenorphine hydrochloride (Buprenex) is used together after opioids are used.	***33** **(100)**	-	-	-
Item 7	Long-term use of opioids can often induce addiction.	24 (72.7)	***7** **(21.2)**	2 (6.1)	-+
Item 8	Use of opioids does not influence survival time.	***24** **(61.5)**	7 (17.9)	2 (5.1)	-
	Dyspnea				
Item 9	Morphine should be used to relieve dyspnea in cancer patients.	***28** **(84.8)**	4 (12.1)	1 (3.0)	-
Item 10	When opioids are taken on a regular basis, respiratory depression will be common.	21 (63.6)	***2** **(6.1)**	10 (30.3)	-
Item 11	Oxygen saturation levels are correlated with dyspnea.	9 (27.3)	***18** **(54.5)**	6 (18.2)	-
Item 12	Anticholinergic drugs or scopolamine hydrobroomide (Transderm-V) are effective for alleviating bronchial secretions of dying patients.	***12** **(36.4)**	11 (33.3)	10 (30.3)	-

Subsets Item	Questions	Responses *f* (%)			
	Psychosocial				
Item 13	During the last days of life, drowsiness associated with electrolyte imbalance should decrease patient discomfort.	***2781.8)**	5 (15.2)	-	1 (3.0)
Item 14	Benzodiazepines should be effective for controlling delirium.	***25 (75.8)**	5 (15.2)	3 (9.1)	-
Item 15	Some dying patients will require continuous sedation to alleviate suffering.	***13 39.4)**	17 (51.5)	3 (9.1)	=
Item 16	Morphine is often a cause of delirium in terminally ill cancer patients.	4 (12.1)	***26 (78.8)**	3 (9.1)	
	Gastro-Intestinal Problems				
Item 17	At terminal stages of cancer, higher calorie intake is needed compared to early stages.	18 (54.5)	***9 (27.3)**	6 (18.2)	-
Item 18	There is no route except central venous for patients unable to maintain a peripheral intravenous route.	19 (57.6)	***11 (33.3)**	3 (9.1)	-
Item 19	Steroids should improve appetite among patients with advanced cancer.	***17 (51.5)**	9 (27.3)	7 (21.2)	-
Item 20	Intravenous infusion will not be effective for alleviating dry mouth in dying patients.	***18 (54.5)**	12 (36.4)	3 (9.1)	-

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. Miyashita, T. Morita, M. Umeda, Y. Oyagi, & T. Ogasawara, (2009), *Palliative Medicine*, *23*(8), 754-766. *f* = frequency of the total population per response of the item. *%* = percentage of the total population per response of the item.

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The demographic variable of age was divided into two groups because this variable had such a wide range. Group 1 consisted of those age 25 to 44 years of age, and group 2 included subjects of 45 to 61 years of age. A *Chi-square test for independence* was conducted to compare age with the items on the PCKT. There was no significant association between the PCKT items and age except on item 17 of the PCKT. On item 17 of the PCKT, a *Chi-square test for independence* (with *Likelihood Ratio*) indicated there was a significant association between age and item 17 on the PCKT, (2, n =33) = 7.3, p = .03, *Cramer's V* = .03. Group 1 correctly responded more on item 17 of the PCKT than Group 2.

A *Chi-square test for independence* was conducted to compare the highest education level completed in nursing (LPN/LVNs and ASNs) with the items on the PCKT. There was no significant association for LPN/LVNs and ASN on the PCKT items except on PCKT items 1 and 8. On PCKT item 1, *Fisher Exact Probability Test* indicated that there was a significant association between the highest education level completed in nursing and PCKT item 1, (1, n = 33) = 2.99, p = .05, *phi* = .03. The ASNs correctly responded more on item 1 of the PCKT than the LPN/LVNs. Item 8 of the PCKT with the *Likelihood Ratio* had a significant association between highest education level completed in nursing and PCKT item 8, (2, n = 33) = 7.1, p = .03, *Cramer's V* = .05. The ASNs correctly responded more on item 8 of the PCKT than the LPN/LVNs.

The demographic variable of duration as a nurse was divided into two groups because this variable had such a wide range. Group 1 was the shortest duration (1 to 13 years) as a nurse and group 2 (14 to 40 years) was the longest duration as a nurse. There was no significant association between duration as a nurse and the items on the PCKT except item 18 on the PCKT. On PCKT item 18, a *Chi-square for independence* (with *Likelihood Ratio*) indicated that there

was an association between duration as a nurse and item 18 of the PCKT, (2, n = 33) = 7.3, p = .03, *Cramer's V* = .06. Those in nursing longer, Group 2 correctly responded more than Group 1.

The demographic variable of duration of employment at present facility was divided into two groups because this variable had such a wide range. Group 1 was the shortest duration (0.1 month to 4 years) of employment at present facility and group 2 (5 to 28 years) was the longest duration of employment at present facility. A Chi-square for independence was conducted to compare the duration of employment at present facility with the items on the PCKT. There was no association between duration of employment at present facility and the PCKT items except on the PCKT items 1 and 6. On PCKT item 1, *Fisher Exact Probability Test* indicated that there was a significant association between duration of employment at present facility and PCKT item 1, (1, n = 33) = 4.1, p = .02, *phi* = .01. Group 1 responded correctly more than Group 2. For PCKT item 6, a *Chi-square for independence* (with *Likelihood Ratio*) indicated that there was an association between duration of employment at present facility and PCKT item 6, (2, n = 32) = 6, p = .05, *Cramer's V* = .06. Group 2 answered correctly more on item 6 of the PCKT than did Group 1.

The demographic variable of total years practiced in LTC facilities was divided into two groups because this variable had such a wide range. Group 1 was the shortest (1 to 13) total years practiced in LTC facilities and group 2 was the longest (14 to 36) total years practiced in LTC facilities. A *Chi-square for independence* was performed which demonstrated no association between the total years practiced in LTC facilities and the PCKT items.

Discussion

The results from this study support the findings of previous studies (Brazil et al., 2012; Ross et al., 1996; Thompson, Bott, Boyle, Gajewski, & Tiden, 2011) that nurses lack knowledge

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of palliative care. The study participants scored less than 50% out of 100% on the PCKT. Ross et al. (1996) found that nurses who have more nursing educational preparation have more knowledge of the philosophy of palliative care than nurses who have less nursing educational preparation. The RNs in this study were more knowledgeable than the LPN/LVNs on one of the questions from the philosophy of palliative care subset. The AACN (n.d.b) recognizes that EOL issues in nursing curriculum are inconsistent or missing, and the ELNEC-Geriatric program has a distinctive geriatric palliative care program (AACN, 2016). Rural nurses in this study who have been employed a shorter duration at the LTC facility had more knowledge about one of the questions from the philosophy of palliative care subset. Hodgson et al., (2006) found that nurses in rural settings have a greater need for pain management training than urban nurses. The findings of this study indicated the subset of pain on the PCKT was one of the subsets that the rural nurses scored the highest; although the subset was still scored low. The rural registered nurses were more knowledgeable than the rural LPN/LVNs on one of the questions from the pain subset of the PCKT. Nurses who have been employed a shorter duration at the present rural LTC facility were more knowledgeable on one of the questions from the pain subset of the PCKT than the nurses who had been employed for a longer duration at the present rural LTC facility. This study supports the shorter the duration as a nurse and nurses aged 25 to 44 (Group 1) had more knowledge on some of the questions in the gastrointestinal subset of the PCKT.

Clinical Implications

Nurses cannot practice what they do not know. Nurses who lack knowledge about the philosophy and principles of palliative care may lower the quality of EOL care for patients in rural LTC facilities. An evaluation of the knowledge level of nurses for palliative care is an important first step in instituting an educational intervention. Nurses respond to the needs of society and their patients. The study participants were very receptive to participate in the study

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which was evident by the 97 percent participation rate of the potential sample of nurses. Findings from this study support the need for future educational interventions for nurses in the rural settings to improve the quality of palliative care services to EOL patients in LTC facilities.

Limitations

A potential limitation was the fact that this researcher did not have an established rapport with some of the facilities within south-central KY. Therefore, some of the facilities were hesitant at the beginning of the research study to allow the researcher within their facility. The researcher needed to speak with the administrator and DON of each facility in-person instead of speaking with the DON on the telephone. The DON would relay the potential study to the administrator within their facility who then would grant permission for the study. Another limitation was that there was only one investigator at each of the three rural LTC facilities. The sample was a convenience sample of nurses who were present on the day of data collection. For the purposes of this time-limited project, the number of facilities and nurses that participated in the study was adequate, but a larger sample size would have increased generalization of the findings.

Recommendations

The AACN (n.d.b) recommends that every undergraduate nursing student should achieve end-of-life competencies which should be integrated into their practice. The researcher who is a Geriatric ELNEC Trainer has offered to provide all or any of the nine modules in the ELNEC Geriatric curriculum to the facilities in this study. The nine modules include: principles of palliative care; pain assessment and management; non-pain symptoms at the EOL; goals of care and ethical issues at the EOL; cultural and spiritual considerations in EOL care; communication; loss, grief, and bereavement; ensuring quality EOL care; and preparation for and care at the time

of death. Educational intervention will serve as a basis for quality improvement for the rural LTC facilities. The Geriatric ELNEC curriculum was developed from a project hosted by the AACN which recommends competencies and curricular guidelines for EOL nursing education and practice. The ELNEC curriculum explains the information and skills that nurses require to deliver quality EOL care to the geriatric population (AACN, 2016). Recommendations include encouraging facilities to arrange for presentation of the Geriatric ELNEC curriculum as a quality improvement effort in order to reach rural LTC facilities. Other research that maybe performed is to compare rural and urban nurses' knowledge of palliative care in LTC facilities which would provide a larger more heterogeneous sample. Schreibeis-Baum et al. (2016) identified that there was no consensus policy agenda at the state and federal level for palliative care, but authorities recognized that acknowledging present consensus statements was a starting point. Therefore, evaluating nurses' knowledge of palliative care in rural LTC facilities and instituting educational policies are a starting point.

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