Predictors of Palliative Care Knowledge Among Nursing Students in Saudi Arabia: A Cross-Sectional Study

Ahmad E. ABOSHAIQAH

ABSTRACT

Background: Societal aging, a concern in many countries worldwide, is increasing the demand for quality palliative care in Saudi Arabia. Nursing education is responsible for providing nursing students with high levels of knowledge and competency related to palliative care.

Purpose: The aim of this study was to investigate the predictors of palliative care knowledge among nursing students in Saudi Arabia.

Methods: A convenience sample of 409 nursing students from one public academic institution and one private academic institution in Saudi Arabia was surveyed from November to December 2017 in this descriptive, cross-sectional study. The 20-item Palliative Care Quiz for Nursing was used to collect the data. Descriptive statistics were used to fully describe the demographic characteristics and palliative care knowledge of the participants. One-way analysis of variance and t test were used to examine the associations between palliative care knowledge and the demographic characteristics. Multiple regression analysis was conducted to identify the significant demographic predictors of this knowledge.

Results: The mean score of the participants was 5.23 (SD = 3.24, range = 0–12), indicating poor palliative care knowledge. The participants lacked palliative care knowledge in terms of palliative care principles and philosophy, management of pain and other symptoms, and psychosocial and spiritual care. Being enrolled in a private university, being in the second year of a nursing program, having attended palliative care education sessions outside a university setting, and attending a palliative care course in the nursing program were identified as significant predictors of higher palliative care knowledge.

Conclusions/Implications for Practice: This study may be used as a basis for formulating education policies and interventions to enhance palliative care education and clinical training among nursing students and ensure the quality of palliative care not only in Saudi Arabia but also in other countries.

Key Words: nursing, nursing education, nursing students, palliative care, palliative care knowledge.

Introduction

Societal aging is a concern in countries around the world, including Saudi Arabia. As aging progresses, the incidence of illnesses with no direct cure and terminal-stage diseases peaks. Thus, patients must receive competent care to meet their needs, which increases the demand for quality palliative care. Nurses are a frontline provider in clinical settings of healthcare, including palliative nursing. Nurses ensure that palliative care is delivered safely, effectively, and compassionately (Borneman, 2011). Unfortunately, palliative care knowledge among nurses remains poor, and high-quality palliative care remains a major challenge (Prem et al., 2012).

Despite the demand for palliative care among patients in Saudi Arabia, the development and expansion of this field have been slow. Advancements in palliative care in this country are hindered by several challenges, including an insufficient nursing workforce with palliative care specialization (Alshammary, Abdullah, Duraisamy, & Anbar, 2014). With a shortage of qualified local nurses, Saudi Arabia continues to rely on foreign nurses to meet the demands of its increasing population (Aldossary, While, & Barriball, 2008; Cruz, 2017). Hence, the greatest challenge to training future Saudi nurses to address the nursing shortage and to enhance palliative care is nursing education. Furthermore, palliative care not only is limited to physical pain but also encompasses the emotional, psychological, social, and spiritual dimensions (Aljawi & Harford, 2012). Cultural and religious backgrounds impact the attitudes toward and methods of palliative care rendered by healthcare workers as well as how patients accept a specific palliative care intervention (Steinberg, 2011). Being the global center of the Islamic faith, with most of the population embracing Muslim culture and beliefs, Saudi Arabia may have different issues and considerations with regard to palliative care than those countries that are predominantly Christian. However, limited studies have been conducted to examine the palliative care knowledge of Muslim nursing students from predominantly Muslim countries. Therefore,
this study aimed to establish baseline data on the palliative care knowledge of Saudi nursing students, who are educated and trained to care for clients who mostly embrace Islamic beliefs and Muslim culture. This study may serve as a basis for the enhancement of the policies and context of nursing curricula in Saudi Arabia and other Muslim countries.

Background

Palliative care focuses on the comfort of patients, especially those in their end-of-life phase (Henchoc et al., 2017). Palliative care and hospice aim to improve the quality of life of adults and children with life-limiting diseases and medical conditions and to reduce their suffering and the suffering of their families. With the increasing rates of mortality and aging worldwide, improved standards of palliative care are necessary. According to the World Health Organization, the mortality rate of the global population is increasing significantly because of life-limiting disease categories (Glover, Garvan, Nealis, Citty, & Derrico, 2017). In Saudi Arabia, the population is aging rapidly, and approximately 27.3% of the population, including children over 15 years old, adults, and the older adults with life-limiting conditions, is in need of palliative care (Usta, Aygin, & Saglam, 2016).

Palliative care is linked with a culture and religion of both patients and healthcare workers (Steinberg, 2011). How clients perceive and respond to their illness, how they accept both patients and healthcare workers (Steinberg, 2011). How workers of the same gender. Touching the hand of a patient by families and individuals on receiving care from healthcare palliative care in Saudi Arabia, reflecting the preference placed that determine a palliative care interventions, and how they handle their end-of-life concerns on palliative care during their education, whereas 42.1% have low or no understanding of palliative care and pain management. These populations constitute a large number of nursing graduates who become healthcare providers without proper palliative care training, thereby posing a serious threat to the standards and quality that should be delivered to patients with terminal illnesses.

Nursing undergraduates must be knowledgeable of the goal of palliative care to improve the quality of life of patients with life-threatening progressive or terminal illnesses (Hold, Blake, & Ward, 2015). Nursing education is a key element to prepare nurses to deliver good quality, lifelong palliative care (Ferrell, Malloy, Mazanec, & Virani, 2016). Nursing students must undergo comprehensive training and courses that include lessons designed to ensure that nurses have the knowledge and skills necessary to provide appropriate, high-quality care to seriously ill and dying patients (Zeinah, Al-Kindi, & Hassan, 2013). Educating nursing students on palliative care starting from the early stages of nursing education may help improve their capability to perform major palliative care tasks, including consulting patients and relatives on all outpatient and inpatient care options (e.g., inpatient hospice and palliative care unit); coordination and information of all those involved in the care and integration of voluntary services; creation of individualized treatment plans; development of crisis management abilities; provision of symptom relief through medication, devices, and other measures; and provision of psychosocial support to patients and relatives (Alshammary et al., 2014).

The significance of palliative care for patients with fatal illnesses indicates the necessity of educating and training Saudi Arabian nursing students to improve patient care quality and nursing practices. However, the lack of understanding and adequate knowledge of palliative care remains one of the foremost problems in palliative care improvement. In Saudi Arabia, determining whether nursing students receive adequate training and education on palliative care during their academic and prepractice years is difficult (Hold et al., 2015).
The aim of this study was to investigate the predictors of palliative care knowledge among nursing students in Saudi Arabia.

Methods

Design, Samples, and Settings

This descriptive, cross-sectional study used a convenience sample of 409 nursing students from one public and one private academic institutions in Riyadh, Saudi Arabia. The two educational institutions were selected because of their large number of registered nursing students. The total population was 582 nursing students (public university = 363, private university = 219). Using the total population of the nursing students in the two universities, the researcher calculated the sample size using a Survey Monkey sample size calculator (https://www.surveymonkey.com/mp/sample-size-calculator/). A sample size of 232 nursing students was determined to be necessary to achieve a 95% confidence interval and 5% margin of error. To ensure the maximum sample size was obtained, 500 questionnaires were distributed. Of these questionnaires, 409 surveys were completed and retrieved, giving a response rate of 81.8%.

The inclusion criteria were as follows: (a) registered in the regular Bachelor of Science in Nursing program at one of the two institutions; (b) in the second, third, fourth, or internship year; and (c) full-time student. Students in the first year were excluded because they are still taking preparatory classes, taking general courses, and not sufficiently exposed to nursing courses. In addition, those students who were under the direct supervision of the researcher were excluded from the study.

Measurement

A survey approach was used to gather data. A two-part survey questionnaire was utilized to gather data about the demographic profile of the participants and to assess their knowledge of palliative care. The first part consisted of questions that were constructed by the researcher to obtain data on demographic characteristics, which included year of study (second, third, fourth, and internship year), gender, whether they had received educational sessions on palliative care in the last 5 years outside the university (yes/no), and whether a palliative care course had been given in their nursing program (yes/no).

The second part of the questionnaire was the Palliative Care Quiz for Nursing (PCQN; Ross, McDonald, & McGuinness, 1996), which is based on the Canadian Palliative Care Curriculum. The tool is composed of 20 questions, and the three possible responses included “true,” “false,” or “don’t know.” Scores were obtained by summing the number of correct answers, with a range of total possible scores from 0 to 20, with higher scores corresponding to higher levels of palliative care knowledge. The PCQN measures the three theoretical dimensions of “philosophy and principles of palliative care” using four items (possible scores = 0–4), “pain and symptoms management” using 13 items (possible scores = 0–13), and “psychosocial and spiritual care” using three items (possible scores = 0–3). The authors of the original scale reported the validity of the tool, with an acceptable alpha of .78 and a correlation coefficient (r) of .56 on a test-retest confirming its reliability (Ross et al., 1996). Although this tool was originally developed to assess the palliative care knowledge of practicing nurses, previous studies have used it to quantify palliative care knowledge among populations of nursing students (Al Qadire, 2014; Khraisat, Hamdan, & Ghazzawwi, 2017; Pope, 2013). The English version of the tool was utilized in this study, because English is the medium of instruction and the mode of communication used at both of the target universities. The reliability of the PCQN in the current sample was tested using the Kuder and Richardson Formula 20. The computed alpha was .70, which indicated an adequate internal consistency of the tool in the present sample.

Data Collection Procedure

Data collection was performed from November to December 2017 by the researcher. Before data were collected, the researcher visited both of the universities to coordinate and formulate plans for recruitment and data collection. Recruitment was carried out 2 weeks before the scheduled data collection, and the students were approached during their free time. Posters regarding the study were placed in strategic places in the universities. The researcher coordinated with the instructors of each class to take 25 minutes of their time at the end of their lectures. The instructors were then asked to leave the room during the entire data collection period. The students were provided adequate information about the study. After signing the informed consent form, the students were handed the questionnaire and given 15–20 minutes to complete. After the allotted time, the researcher collected the questionnaires. The answered questionnaires were kept in a locked cabinet until the data collection period had ended.

Ethical Considerations

The research protocol was reviewed and approved by the institutional review board of King Saud University College of Medicine (Project No. E-17-2633). Permission to conduct the study was given by the deans of the colleges of nursing of the two universities. The researcher provided the students with necessary information about the study, their rights (e.g., voluntary participation, right to withdraw before completing the questionnaire, and right of confidentiality), and their expected responsibilities as participants. Adequate time was provided to the students to ask questions about the study. Written informed consent was provided by the students to confirm their voluntary participation. Students were asked to not write anything that would identify them in the questionnaire. To protect the students from possible coercion or undue influence, students of the researcher were excluded from participation, data were collected while the instructors were not present, confidentiality was assured, and students
were informed that their class performance would not be affected by their decision to participate or not.

**Data Analysis**

Statistical tests were conducted using SPSS Version 22.0 (IBM, Armonk, NY, USA). The demographic characteristics of the participants were fully described using descriptive statistics. The palliative care knowledge of the participants was shown in terms of means, standard deviations, frequency counts, and percentages. One-way analysis of variance with Tukey’s honestly significant difference tests and t tests were performed to examine the associations between the participants’ demographic variables and their knowledge, with the predictors of palliative care knowledge identified using standard multiple linear regression.

**Results**

As shown in Table 1, most participants were enrolled in the public university (55.3%), were female (69.4%), had participated in nonuniversity sessions on palliative care during the last 5 years (58.2%), and were not able to attend a palliative care course at their nursing school (65.5%). A high proportion of the participants were registered in the fourth year of their nursing program (33.7%), with 26.7% registered in their second year and 19.8% registered, respectively, in their third year and internship year.

**Palliative Care Knowledge**

The mean score for palliative care knowledge was 5.23 (SD = 3.24), with scores ranging from 0 to 12, indicating a generally poor knowledge of palliative care. Only 40 participants (9.8%) answered at least 50% of the questions correctly, whereas 90.2% obtained scores lower than 10. Table 2 shows the percentage of correct and incorrect answers achieved by the participants for each item. The range of correct responses for each item was 8.6%–54.0%. Item 4, “Adjuvant therapies are important in managing pain,” yielded the highest number of correct responses (54.0%) and was the only item that was answered correctly by more than 50% of the participants. Item 13, “The use of placebos is appropriate in the treatment of some types of pain,” received the lowest percentage of correct answers (8.6%), followed by Item 5, “It is crucial for family members to remain at the bedside until death” (12.7%). In terms of the three theoretical dimensions, most of the items in the “pain and symptoms management” dimension received a higher frequency of correct responses than the items in the dimensions of “philosophy and principles of palliative care” and “psychological and spiritual care.” The “philosophy and principles of palliative care” dimension earned a mean score of 0.79 (SD = 0.72, range = 0–3), whereas the dimensions “pain and symptoms management” and “psychosocial and spiritual care” received mean scores of 3.39 (SD = 2.62, range = 0–10) and 0.54 (SD = 0.77, range = 0–3), respectively. Thus, the participants lacked palliative care knowledge in the realms of palliative care principles and philosophy, management of pain and other symptoms, and psychosocial and spiritual care.

Table 3 summarizes the association between participant demographic characteristics and palliative care knowledge. The participants enrolled in the private university had significantly higher scores than their peers enrolled in the public university (t = 5.62, p < .001). Moreover, those in their fourth year had significantly lower scores than those in their second year (F = 3.48, p = .016). Those who had received nonuniversity educational sessions on palliative care during the last 5 years (t = −5.06, p < .001) and those who had attended a palliative care course at their nursing school (t = −5.23, p < .001) showed significantly higher palliative care knowledge than their peers who had not. Thus, these findings suggest that all of the examined demographic characteristics, with the exception of gender, were significantly associated with level of palliative care knowledge.

**Predictors of Palliative Care Knowledge Among the Participants**

The PCQN scores were entered into a regression model, with demographic characteristics designated as the predictor variables. The regression model was statistically significant, F(7, 401) = 12.64, p < .001, accounting for approximately 16.6% of the variance in palliative care knowledge (R^2 = .181, adjusted R^2 = .166). In Table 4, type of university, year of study, attending a nonuniversity educational session on palliative care during the last 5 years, and attending a university palliative care course are all identified as significant predictors of palliative care knowledge. The scores of the public university
participants were 1.31 points ($t = -4.16, p < .001, 95\% \text{CI } [-1.92, -0.69]$) lower than those studying at the private university. The mean knowledge score for fourth-year nursing students was 1.77 points lower than the mean score for second-year nursing students ($t = -4.30, p < .001, 95\% \text{CI } [-2.58, -0.96]$). Furthermore, the mean knowledge scores for those who had attended a nonuniversity palliative care educational session during the last 5 years ($t = 3.20, p < .001, 95\% \text{CI } [0.50, 2.09]$) and those who had attended a university palliative care course ($t = 3.34, p < .001, 95\% \text{CI } [0.53, 2.06]$) earned an average of 1.29 points more than their peers who had not.

### Discussion

This study assessed palliative care knowledge among nursing students enrolled in private and public universities in Saudi Arabia. The mean PCQN score of participants was 5.23, and only 9.8% of the participants answered more than 50% of the questions correctly. This result suggests that the palliative care knowledge of Saudi Arabian nursing students is inadequate. Previous studies conducted in other countries report similarly low knowledge among nursing students, although the mean score in this study was even lower than in those previous studies (Al Qadire, 2014; Karkada, Nayak, & Malathi, 2011). The mean score reported for nursing students in the southeastern United States was 12.19 ($SD = 2.58$; Pope, 2013). Furthermore, the present results indicate considerable misconceptions regarding palliative care. For example, 91.4% thought that placebos were appropriate for the treatment of some types of pain, and 87.3% believed that family members should remain at the bedside until a patient’s death. The findings of the study also revealed that the participants had very low knowledge of the three theoretical dimensions of palliative care that are measured by the PCQN. Knowledge of palliative care philosophy and principles as well as of psychological and spiritual care were observed to be poorer compared with the dimension of pain and symptom management.

The low scores reported in this study may be associated with the inadequate curricular content related to palliative care at the two targeted universities. Although the curricular

### Table 2.

| Item                                                                 | Correct Answer | Incorrect Answer |
|----------------------------------------------------------------------|----------------|------------------|
| Philosophy and principles of palliative care                          | $n$ | $\%$ | $n$ | $\%$ |
| 1. Palliative care is only appropriate in situations where there is evidence of a downward trajectory or deterioration. (F) | 73 | 17.8 | 336 | 82.2 |
| 9. The provision of palliative care requires emotional detachment. (F) | 79 | 19.3 | 330 | 80.7 |
| 12. The philosophy of palliative care is compatible with that of aggressive treatment. (T) | 123 | 30.1 | 286 | 69.9 |
| 17. The accumulation of losses makes burnout inevitable for those who work in palliative care. (F) | 50 | 12.2 | 359 | 87.8 |
| Pain and symptoms management                                          | $n$ | $\%$ | $n$ | $\%$ |
| 2. Morphine is the standard used to compare the analgesic effect of other opioids. (T) | 151 | 36.9 | 258 | 63.1 |
| 3. The extent of the disease determines the method of pain treatment. (F) | 74 | 18.1 | 335 | 81.9 |
| 4. Adjunct therapies are important in managing pain. (T)              | 221 | 54.0 | 188 | 46.0 |
| 6. During the last days of life, drowsiness associated with electrolyte imbalance may decrease the need for sedation. (T) | 137 | 33.5 | 272 | 66.5 |
| 7. Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain. (F) | 77 | 18.8 | 332 | 81.2 |
| 8. Individuals who are taking opioids should also follow a bowel regime (laxative treatment). (T) | 139 | 34.0 | 270 | 66.0 |
| 10. During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for the treatment of severe dyspnea. (T) | 147 | 35.9 | 262 | 64.1 |
| 13. The use of placebos is appropriate in the treatment of some types of pain. (F) | 35 | 8.6 | 374 | 91.4 |
| 14. High-dose codeine causes more nausea and vomiting than morphine. (T) | 147 | 35.9 | 262 | 64.1 |
| 15. Suffering and physical pain are identical. (F)                   | 83 | 20.3 | 326 | 79.7 |
| 16. Demerol (pethidine) is not an effective analgesic for the control of chronic pain. (T) | 87 | 21.3 | 322 | 78.7 |
| 18. Manifestations of chronic pain are different from those of acute pain. (T) | 165 | 40.3 | 244 | 59.7 |
| 19. The use of placebos is appropriate in the treatment of some types of pain. (F) | 35 | 8.6 | 374 | 91.4 |
| 20. Pain threshold is lowered by fatigue or anxiety. (T)             | 130 | 31.8 | 279 | 68.2 |
| Psychosocial and spiritual care                                       | $n$ | $\%$ | $n$ | $\%$ |
| 5. It is crucial for family members to remain at the bedside until death occurs. (F) | 52 | 12.7 | 357 | 87.3 |
| 11. Men generally reconcile their grief more quickly than women. (F) | 88 | 21.5 | 321 | 78.5 |
| 19. The loss of a distant relationship is easier to resolve than the loss of one that is close or intimate. (F) | 80 | 19.6 | 329 | 80.4 |

Note. The T (True) or F (False) at the end of each item is the correct answer in that item.
content of the two universities was not examined in this study, 65.5% of the participants reported not having received formal palliative care training from their nursing school. The literature supports the essentiality of palliative care nursing education in improving the knowledge, practice, and attitudes of nurses regarding palliative care (Al Qadire, 2014; Gillan, van der Riet, & Jeong, 2014). However, nursing students continue to feel unprepared to deal with issues related to death and dying because they receive inadequate related education. This phenomenon is supported by a literature review conducted by Gillan et al. (2014), who found insufficient end-of-life content in nursing books and deficient palliative care content in undergraduate nursing curricula. Furthermore, the poor knowledge of the participants regarding palliative care philosophy and principles support the need to improve the curricular content of palliative care courses in nursing education. Basic principles of palliative care such as defining the concept, the objectives and essence of palliative care, and the philosophical underpinnings of palliative care should be reinforced in curricula. Notably, the study also revealed poor knowledge in the psychosocial and spiritual care dimension of palliative care. This finding may relate to cultural considerations. For instance, more than three fourths of the participants believed that family members should remain at the bedside until patient death. This misconception may be rooted in the close family ties that are typical in Saudi culture and society as well as the Saudi belief that caring for a dying family member is the responsibility of the family (Aljawi & Harford, 2012). Moreover, despite being a religious and spiritual country, several studies have reported poor spiritual care competencies for Saudi nursing students. Similar studies have reported that the incompetence of nursing students in this area is related to the inadequacy of curricular contents focusing on spirituality in relation to health and spiritual nursing care (Cruz, Alshammari, Alotaibi, & Colet, 2017; Cruz, Alshammari, & Colet, 2017). Hence, spiritual care should be included in the nursing curriculum in the country, either integrated into existing courses such as the Fundamentals of Nursing or added as a separate course dealing specifically with this topic. In addition, the poor level of palliative care knowledge may relate to the underdevelopment and unpopularity of palliative care in Saudi Arabia, where palliative care is given less emphasis than other nursing specializations. Despite the advancements in palliative care introduced in the country, further efforts are still required to achieve the optimal level of palliative care. Increased awareness among public and health professionals and support from the authorities are

### TABLE 3.
**Association Between the Demographic Profile and Palliative Care Knowledge of Participants (N = 409)**

| Demographic | M (SD) | t/F | p     |
|-------------|--------|-----|-------|
| Type of university | | | |
| Private | 6.17 (2.77) | 5.62 | <.001*** |
| Public | 4.46 (3.39) | | |
| Year of study* | | | |
| Second | 5.88 (3.14) | F = 3.48 | .016* |
| Third | 5.01 (3.07) | | |
| Fourth | 4.64 (3.62) | | |
| Internship | 5.57 (2.66) | | |
| Gender | | | |
| Female | 5.30 (3.20) | 0.64 | .521 |
| Male | 5.07 (3.35) | | |
| Received a nonuniversity educational session on palliative care during the last 5 years | | | |
| No | 4.30 (3.10) | −5.06 | <.001*** |
| Yes | 5.90 (3.18) | | |
| Attended a palliative care course at your nursing school | | | |
| No | 4.64 (3.02) | −5.23 | <.001*** |
| Yes | 6.35 (3.37) | | |

*Second year versus fourth year (p = .014).

*p < .05. **p < .001.

**TABLE 4.
**Predictors of Palliative Care Knowledge Among the Participants (N = 409)**

| Predictor Variable | B | SE b | β | t | p     | 95% CI       |
|--------------------|---|------|---|---|-------|-------------|
| Type of university | −1.31 | 0.32 | −0.20 | −4.16 | <.001*** | [−1.92, −0.69] |
| Year of study (reference group = second) | | | | | | |
| Third | −0.12 | 0.45 | −0.01 | −0.26 | .796 | [−1.00, 0.76] |
| Fourth | −1.77 | 0.41 | −0.26 | −4.30 | <.001*** | [−2.58, −0.96] |
| Internship | −0.08 | 0.45 | −0.01 | −0.18 | .856 | [−0.97, 0.81] |
| Gender | 0.26 | 0.32 | 0.04 | 0.80 | .424 | [−0.38, 0.90] |
| Received a nonuniversity educational session on palliative care during the last 5 years | 1.29 | 0.40 | 0.20 | 3.20 | .001** | [0.50, 2.09] |
| Attended a palliative care course at your nursing school | 1.29 | 0.39 | 0.19 | 3.34 | .001** | [0.53, 2.06] |

**p < .01. ***p < .001.**
necessary to fully maximize the palliative care specialty in the country (Zeinah et al., 2013). Moreover, investment and improvement of education among healthcare professionals regarding palliative care remains a great challenge that requires immediate action (Alshammary et al., 2014).

The knowledge of palliative care among the nursing students in this study was associated with and predicted by several demographic characteristics. The levels of palliative knowledge among the private university nursing students, second-year nursing students, those who had received non-university educational sessions on palliative care during the past 5 years, and those who had attended a palliative care course in their nursing school were all significantly higher than those of their peers. These demographic characteristics significantly predicted the level of palliative care knowledge among the participants. The higher level of knowledge among the participants who were enrolled in the private university may relate to differences in the content of the nursing curriculum between the two universities. The percentages of the participants who had received nonuniversity palliative care training during the last 5 years (66.1% vs. 51.8%) and who had taken a palliative care course at their nursing school (39.3% vs. 30.5%) were higher among the private university students than the public university students. Although this variation may also explain the difference, this finding could not be compared with results of other studies because of the lack of studies comparing the palliative care knowledge between private and public university students. However, this result has important implications for nursing education in Saudi Arabia and worldwide. Nursing education in Saudi Arabia should have unified curricular contents to address the needs of the nursing students in the country, regardless of university type.

The levels of knowledge of the participants who were in their second year were higher than those of the participants in their fourth year. This finding differs from previous findings showing that the palliative care knowledge of nursing students steadily increases as they progress through their nursing program (Al Qadire, 2014). This difference may be attributed to the integration of palliative care concepts into the course on Fundamentals of Nursing, which is currently taken by second-year students. The information regarding this concept, as partially discussed in the Fundamentals of Nursing, is still fresh among these students. Spiritual care, a part of palliative care, is also integrated and taught in Arabic and Islamic courses, which are part of the preparatory years and the second year of the nursing program (Cruz, Alshammari, Alotaibi, et al., 2017; Cruz, Alshammari, & Colet, 2017).

The levels of knowledge among the nursing students who had received a nonuniversity palliative care educational session during the past 5 years and those who had attended a palliative care course at the university were higher than those of the students without similar experiences. The impacts of palliative care training programs on the knowledge, attitudes, beliefs, and practices of nurses and other healthcare professionals have been studied previously. For instance, a multicenter study on bedside nurses in intensive care units initially implemented and evaluated a palliative care professional development program, reporting that the palliative care skills of nurses who undergo this training were improved and that their ability to identify palliative care needs and to create plans to address such needs was enhanced (Anderson et al., 2017). Another study that examined the effects of a palliative care training program on physiotherapists reported significant improvements in palliative care knowledge, attitudes, beliefs, and practices (Kumar, Jim, & Sisodia, 2011). Considering the importance of palliative care courses in the nursing program, Dobbins (2011) and Kirkpatrick et al. (2017) showed the positive impact of these courses on students’ palliative care knowledge. Palliative care education is a critical factor in preparing nursing students for end-of-life care, which may be the most important aspect of nursing students’ attitudes toward caring for the dying (Gillan et al., 2014). Nursing undergraduate training should incorporate considerable amounts of both didactic and clinical contents on palliative care to ensure that nursing students are properly prepared (Barrere, Durkin, & LaCoursiere, 2008). Thus, nursing faculty members have a unique opportunity and valuable contribution to enhance the provision of care among patients with serious illnesses and their families by giving effective education that ensures the development of students’ palliative care competencies (Ferrell et al., 2016).

Limitations

This study has several limitations, which should be considered when interpreting the results. The study was conducted only in two universities that were located in the central region of Saudi Arabia. Moreover, the use of convenience sampling may affect the generalizability of findings. The curriculum content and the type of educational and training program that the students attended were not thoroughly elucidated in the study. Future studies should consider examining these variables in detail to explain their influence on student knowledge.

Conclusions and Implications

The study provides significant information on the palliative care knowledge of nursing students in Saudi Arabia. The students manifested levels of palliative care knowledge that were significantly lower than the levels reported in previous studies of this issue around the world. Being enrolled in a private university, being in the second year of a nursing program, attending nonuniversity palliative care educational sessions, and attending a university palliative care course in the nursing program were all identified as significant predictors of increased levels of palliative care knowledge.

The findings may be used as a basis for establishing educational policies and interventions to enhance palliative care education among nursing students and to ensure the quality of palliative care in Saudi Arabia and elsewhere. Several recommendations to improve nursing education in Saudi Arabia and in other countries follow. First, nursing education must provide a nursing curriculum with adequate palliative care
content to properly prepare nursing students for their future roles. Second, palliative care nursing must be integrated into the nursing curriculum and must emphasize the different dimensions of palliative care such as palliative care philosophy and principles, pain and symptom management, and psychosocial and spiritual care. Moreover, cultural and religious considerations affecting the provision of palliative care should be emphasized in palliative care courses to avoid misconceptions.

Third, nursing institutions in Saudi Arabia should adopt uniform curricular content on palliative care to address the knowledge gap between nursing students studying at private and public universities. Fourth, spiritual care nursing should be integrated into the nursing curriculum in Saudi Arabia. Fifth, additional learning opportunities such as palliative care training and seminars should be provided to students to strengthen their palliative care knowledge and competencies. Sixth, palliative care concepts should be reinforced in the clinical area to fill in the gap between classroom and clinical learning and to ensure the continuous learning of the students as they progress in their nursing program.

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Address correspondence to: Ahmad E. ABOSHAIQAH, College of Nursing, King Saud University, P.O. Box 642, 2nd Floor Building 24, Al Daryah, Riyadh City 11421, Saudi Arabia. Tel: +966 503154993; E-mail: aaboshaiqahksu@gmail.com
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