

Original article

## Palliative Care Knowledge, Attitude, and Practice of Nursing Students at Colleges of Nursing, Praboromarajchanok Institute

Received: June 21, 2020;

Accepted: December 9, 2020;

Published: December 15, 2020

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### Abstract

**Objectives:** This descriptive study aimed to describe and to test the palliative care knowledge, attitude, and practice (KAP) of 3<sup>rd</sup> year (junior) and 4<sup>th</sup> year (senior) nursing students at the College of Nursing, Praboromarajchanok Institute. **Methods:** A regional cluster and proportional-to-size sampling technique was applied to select 299 junior and senior students from the College of Nursing, Praboromarajchanok Institute. Data were collected by questionnaires administered to students. The test reliability of the questionnaires measuring palliative care KAP among students was acceptable (Knowledge: Kuder-Richardson-20 (KR-20) statistic = 0.75; Attitude: Cronbach's alpha = 0.79; Practice: Cronbach's alpha = 0.93). MANOVA was used to test whether mean scores of knowledge, attitude, and practice of palliative care among nursing students was different based on variations in the amount of palliative care classes taken and prior experience providing palliative care. **Results:** 61 % of respondents were seniors. 61 % of the respondents never attended a class or training on palliative care previously. 62 % had prior experience delivering palliative care to patients. The students had low mean scores for knowledge about palliative care among both 3<sup>rd</sup> year and 4<sup>th</sup> year students. Nursing students had high mean scores for attitude for palliative care, which demonstrated having positive attitudes about delivering palliative care. 3<sup>rd</sup> year and 4<sup>th</sup> year students also had high mean scores for practice on delivering palliative care, showing that they had experience providing palliative care for a relatively high number of patients with a wide range of different illnesses and conditions. Moreover, mean score on knowledge, attitude, and practice on delivering palliative care of 4<sup>th</sup> year students were higher than those of 3<sup>rd</sup> year students deliver. Mean scores on knowledge, attitude, and practice on delivering palliative care among respondents who had previous experience with providing palliative care were higher than those who had no prior experience providing palliative care. The only statistically significant difference in mean knowledge score was among nursing students who have different levels of experience de on palliative care ( $F=5.73$ ,  $df=1$ ,  $p=.018$ ). **Conclusions:** Education, training, and experience on palliative care should be given to nursing students to increase their KAP on palliative care, particularly knowledge.

**Keywords:** Knowledge, attitude, practice, palliative care, nursing students

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## นิพนธ์ต้นฉบับ

## ความรู้ ทัศนคติ และพฤติกรรมการดูแลผู้ป่วยในระยะประคับประคองของนักศึกษา

### พยาบาลศาสตร์ สถาบันพระมาราชชนก

Received: June 21, 2020;

Accepted: December 9, 2020;

Published: December 15, 2020

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### บทคัดย่อ

การศึกษาเชิงพรรณนานี้มีวัตถุประสงค์เพื่อศึกษาความรู้ ทัศนคติ และพฤติกรรมการดูแลผู้ป่วยในระยะประคับประคองของนักศึกษาพยาบาลศาสตร์ สถาบันพระมาราชชนก กลุ่มตัวอย่างเป็นนักศึกษาพยาบาลศาสตร์บัณฑิตชั้นปีที่ 3 และ 4 จำนวน 299 คน ที่ทำการสุ่มแบบพื้นที่ตามสัดส่วนของจำนวนนักศึกษา เก็บข้อมูลโดยใช้แบบวัดความรู้ ทัศนคติ และพฤติกรรมการดูแลผู้ป่วยในระยะประคับประคองที่มีค่า KR-20 ของแบบวัดความรู้เท่ากับ 0.75 ส่วน Cronbach's alpha ของแบบวัดทัศนคติและพฤติกรรมเท่ากับ 0.79, 0.93 ทดสอบความแตกต่างโดยใช้สถิติ MANOVA

ผลการศึกษาพบว่ากลุ่มตัวอย่างร้อยละ 61 เป็นนักศึกษาชั้นปีที่ 4 ร้อยละ 61 มีประสบการณ์ในการรับการอบรมในดูแลผู้ป่วยในระยะประคับประคอง และ ร้อยละ 62 มีประสบการณ์ในการดูแลผู้ป่วยในระยะประคับประคอง ค่าเฉลี่ยของคะแนนความรู้ ทัศนคติ และพฤติกรรมการดูแลผู้ป่วยในระยะประคับประคองอยู่ในระดับปานกลาง โดย นักศึกษาพยาบาลศาสตร์ชั้นปีที่ 4 มีค่าคะแนนเฉลี่ยสูงกว่านักศึกษาพยาบาลศาสตร์ชั้นปีที่ 3 และนักศึกษาพยาบาลศาสตร์ที่มีประสบการณ์ในการดูแลผู้ป่วยในระยะประคับประคอง มีค่าคะแนนเฉลี่ยสูงกว่านักศึกษาที่ไม่มีประสบการณ์ เมื่อทดสอบด้วยสถิติพบร่วมนักศึกษา ที่มีประสบการณ์จะมีค่าคะแนนเฉลี่ยของความรู้ด้านการดูแลผู้ป่วยในระยะประคับประคองแตกต่างจากผู้ที่ไม่มีประสบการณ์อย่างมีนัยสำคัญทางสถิติ ( $F=5.73$ ,  $df=1$ ,  $p=0.018$ ) ดังนั้นควรจัดการอบรมหรือจัดหลักสูตรเพื่อส่งเสริมให้นักศึกษาพยาบาลศาสตร์บัณฑิตมีความรู้ ทัศนคติและพฤติกรรมในการดูแลผู้ป่วยในระยะประคับประคอง

**คำสำคัญ:** ความรู้ ทัศนคติ พฤติกรรม การดูแลในระยะประคับประคอง นักศึกษาพยาบาล

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## Introduction

When the populations are getting older and live longer, they are sicker with non-communicable diseases (NCDs). Therefore, patterns of health care should be adjusted to cope with the emergence of rising NCDs and an aging society. Due to these changes, there is a growing need for nurses that can provide palliative care to the dying and end-stage patients to promote patients' quality of life until the end of life. Palliative care not only increases the quality of life of the patients, but also decreases the number of patients admitted in the hospital as well as cost of treatment [World Health Organization (WHO), 2019]. Worldwide, WHO estimated that each year about 40 million people needed palliative care and 78% of them were living in developing and underdeveloped countries. Among people needing the palliative care only 14% received such care. The causes of deficit in care include no suitable policy and health care system established to specially provide the palliative care, not enough training for and unawareness of palliative care of health care professionals, and strictly regulation on access to opioids leading to the patients being unable to receive opioid drugs when necessary, as well as no international standard for proper access for the opioids (WHO, 2019).

In the past 10 years, the palliative care in Thailand has moderately progressed; there are now policies and clinical practice guidelines in most provincial and university hospitals as well as in community. However, the care is not continuously and qualitatively provided to the patients and families, compared to the developed countries. As a result, in 2015, the Ministry of Public Health launched a palliative care policy in that nationwide palliative care should be provided in 300 community hospitals. In addition, 30,000 palliative care teams should be prepared and trained (Hfocus, 2016). Following this policy, some hospitals have created specific inpatient palliative care units. There are also a few dedicated hospice care facilities. Dying patients at home receive better palliative care from palliative care teams. There are more palliative care teams trained to provide care to the patients, both in the hospital and at home (Sirisoongnern, J., Phimphisutiphong, M, Phakdeekul, W, 2018).

Providing palliative care to the patients either at hospital or at home requires health care teams that have knowledge and ability in palliative care. Nurses play important roles in the health care team. In the last five years, nurses in Thailand have been trained both in short and long term courses in palliative care. Several studies have explored the level of knowledge, attitude, and practice among nurses in Thailand. Rongmuang, Nakchattree, and Thongphet (2018) found that nurses from 7 provinces in upper southern region of Thailand have a moderate level of knowledge on palliative care and end-of-life care. Moreover, these nurses displayed high mean scores for positive attitudes toward on palliative care and end-of-life care. However, they had only moderate level of practice on palliative and end-of-life care, which meant they had limited experience on delivering palliative care and end-of-life care to patients. In addition, knowledge on palliative care was positively correlated with positive attitude towards palliative care patients ( $r = 0.216$ ,  $p < 0.001$ ). Positive attitude towards palliative care patients was positively correlated with adequate practice of palliative care ( $r = 0.272$ ,  $p < 0.001$ ). The findings from a different study revealed that new registered nurses in southern Thailand had a moderate level of overall knowledge in caring for patients at the end of (Akarathanarak, T. Kongsuwan, W. & Matchim, Y, 2014). Another study by Keawtong,

Rawiworakul, Kalampakorn, and Kerdmongkol (2017) revealed that factors influencing providing palliative care to patients in community nurses working at primary care units included: methods of work in the community, policy of the organization, training, condition of equipment, and co-worker relationships.

Nursing students who will be future nurses should also have adequate palliative care knowledge, positive attitude, and skills. They should also be educated and trained for the palliative care, so that they can competently provide palliative care to the patients and families. Up until now, there are some studies done in other countries, but not in Thailand, to investigate the knowledge, attitude, and practice of nursing students (Hazazneh, et al., 2015; Karkada, Nayak, & Malathi, 2011; Shea, Grossman, Wallace, 2010). These studies have investigated how knowledge, attitude, and practice on palliative care of nurses and students are related to educational background, palliative care training and experience, and other demographic factors such as age and types of patient unit. A study in 341 Ethiopian nurses working at four showed that only 30 % of nurses had a good level of knowledge and 2/3 of nurses had a good attitude towards palliative care. The study also revealed that nurses working at medical and surgical units and having more training experience on palliative care were positively correlated with knowledge on palliative care. More palliative care experience, higher level of nursing education, and working at medical units were positively correlated with attitude on palliative care (Kassa, H., Murugan, R., Zewdu, F., Hailu, M., & Woldeyohannes, D, 2014). Similar to this study, an earlier study by Ross, McDonald, and McGumness (1996) showed that 3<sup>rd</sup> and 4<sup>th</sup> year nursing students had a higher level of palliative care knowledge than did practical nurses and 1<sup>st</sup> and 2<sup>nd</sup> year nursing students. In addition, the nurses and nursing students who indicated receiving training on palliative care had a higher level of palliative care knowledge than did the ones without training. However, Al Qadire (2014) found that most nursing students did not have enough knowledge on palliative care. However, senior students had a higher level of palliative care knowledge than junior students. In the studies conducted among nurses in Jordan (Abu Hasheesh, M. O., Al-Sayed AboZeid, S., Goda El-Said, S., Alhujaili, A. D., 2013) and in New York (Lange, M., Thom, B., Kline, N. F., 2008), researchers found that older and more experienced nurses had a more positive attitude than younger and less experienced ones. Similarly, the junior nursing students had a more positive attitude on palliative care than freshmen students. Students with prior experience in providing care to the dying, dead patients, or end stage relatives had a better attitude than did the ones without such previous experiences (Grubb, 2016).

To our knowledge, most studies among Thai nursing students up to now have been conducted to assess knowledge and attitudes on palliative care. However, there have been very few studies on palliative care practice. As of the current date, there has been no formal education and training on palliative care for nursing students at all Boromarajonani Colleges of Nursing under the auspice of Praboromarajchanok Institute, Ministry of Public Health, which produces around 50 % of Thai nurses (Singweratham, N & Kantabanlang, Y, 2017). At some nursing colleges, however, there may be a lecture on this topic that is included in the teaching of nursing care for persons with chronic health problems such as cancer. Therefore, it is necessary to assess knowledge, attitude, and practice on palliative care of nursing students at Boromarajonani Colleges of Nursing.

Consequently, the results of this study can be used for a development of a future palliative care course for nursing students.

### Objectives

The objectives of this study include:

1. To assess the level of knowledge of palliative care, attitude towards providing palliative care, and experience delivering on palliative care among nursing students.
2. To test if there are differences in the mean scores for knowledge, attitude, and palliative care among nursing students who have different levels of previous instruction on palliative care and of experience delivering on palliative care.

### Hypotheses

This study attempted to test hypotheses: that there will be a significant difference of nursing students' knowledge, attitude, and practice on palliative care for nursing students who are different in terms of amount of previous classes taken about palliative care and levels of experience with delivering palliative care to patients.

### Research Methodology

A cross-sectional, correlational survey study was conducted among junior and senior nursing students from selected nursing colleges under the Ministry of Public Health.

### Sample and setting

The study population included third- and fourth- year nursing students from 30 nursing colleges under the auspice of Praboromajachanok Institute, Ministry of Public Health, in Thailand. At the time of the study, one college did not have third- and fourth- year nursing students.

The statistical program G\*Power were applied to calculate the appropriate sample size. The MANOVA test was used to test the hypothesis. The following conditions were set: effect size = 0.05, alpha = 0.05, power = 0.80, number of groups = 2, and response variables = 3, sample size = 222. We considered a 35% response rate. Based on G\*Power calculations, the total desired sample size was 299.

A regional cluster and proportional-to-size sampling technique was applied. A total of 29 colleges was categorized into 1 of 5 regions (South, Central, North, Northeast, and East) under the Ministry of Public Health of Thailand. Then samples were proportional to size of the student population of the region were randomly selected. Of 299 selected samples, 43 students were from 2 colleges in the South, 112 students were from 5 colleges in the Central, 19 students were from 1 college in the East, 65 students from 3 colleges in the North, and 60 students from 3 colleges in the Northeast.

### Questionnaires

Data were collected by using a validated questionnaire. The questionnaire had four parts including: Part 1: Demographic data; Part 2: Palliative care knowledge; Part 3: Attitude about palliative care; and Part 4: Practice delivering palliative care. The palliative care knowledge, attitude, and practice (KAP) questionnaire was based on a questionnaire developed by Hanprasitkam and colleagues (2011). We received permission from Hanprasitkam and colleagues to use this questionnaire in our study. The original questionnaire was developed from a review of literature,

and validated by three experts. Our research team had adapted the questionnaire for appropriate use with nursing students in this study. A copy of (or excerpts from) the questionnaire's four parts are included in the Supplemental Material.

The reliability and validity of the questionnaire was tested among 30 nursing students (15 juniors and 15 seniors) in a pilot study. The results from the reliability and validity testing are included with the descriptions of each questionnaire section: **Part 1:** The demographic portion asked participants to provide their gender, year level of nursing study, hours of previous palliative care class and training, the number of dying and end stage patients to whom the students had previously provided palliative care to, and level of experience in providing palliative care to the patients. **Part 2:** Palliative care knowledge scale. This scale was composed of 24 questions asking the respondents about the knowledge on palliative care. Responses included true, false, or not sure. Of these 24 questions, 5 questions asked about principles of palliative care, 12 questions assessed the knowledge on symptom management, and 7 questions were on psychosocial and spiritual care. A correct answer was equal to 1 point, whereas an incorrect or not sure response was equal to 0 points. Possible scores ranged from 0-24. We categorized a score of 20-24 (>80% correct) was classified as a high level of knowledge; the score 15-19 (61-80 % correct) was a moderate level of knowledge; and score < 15 (< 60% correct) as a low level of knowledge. The reliability of knowledge scale was acceptable (KR-20=0.75). **Part 3:** Palliative care attitude scale. This scale assessed the feelings, beliefs, and perspectives about palliative care of nursing students. It contained 25 questions in 5-point Likert scale format, in which 1= strongly disagree and 5 = strongly agree. The questions included both negative and positive attitude statements. The scores from negative statements were converted to the positive scale before summing all scores from both negative and positive statements together. Possible scores could range from 25-125, in which the score of 93-125 meant having a high level of attitude on palliative care; 60-92 having a moderate level; and  $\leq 59$  having a low level of attitude. Cronbach's Alpha was 0.79 and **Part 4:** Palliative care practice scale. For the practice portion, a higher score signifies that a student has provided palliative care to a higher number of patients and that these patients may have had a wider variety of different diseases or causes of sickness. This scale had 28 items in 4-point Likert scale format, in which ranged from "never practiced" (1 point) to "often practiced" (4 points). Possible scores could range from 28 to 112. A score of 85-112 was classified as having a high level of practice; 57-84 as having a moderate level;  $\leq 56$  as having a low level of practice. When tested among 30 nurses, Part 4 of the questionnaire's reliability acceptable (Cronbach's alpha = 0.93).

#### ***Data collection***

After the researchers received an approval from college's research ethics committee, a package of questionnaire copies was mailed to each selected college. In the package, there was a letter soliciting the college director for a permission to collect data among junior and senior nursing students, copies of questionnaires in individual envelopes, and a letter informing an involved person how to distribute and collect the questionnaires. In each envelope, there were a copy of questionnaire and a letter enabling participants in the research study to provide informed consent before taking part in the research study.

### ***Data analysis***

Data were checked and cleaned for recording errors. We calculated descriptive statistics (means, percentages), mean differences, and correlations between different variables using the SPSS program (Released Year 2017. Version 24.0. Chicago, SPSS, Inc.). We used a significance level of less than 0.05 for type 1 error (alpha), and two-tailed testing was applied.

Multiple analysis of variances (MANOVA) was used to test the null hypothesis that there was no difference in knowledge, attitude, and practice scores obtained via participant questionnaires by groups classified by different levels of past palliative class experience and prior experience delivering palliative care. Independent variables were different levels of previous palliative class instruction and levels of experience providing palliative care to patients. Dependent variables were knowledge, attitude, and practice (KAP) on palliative care. The Box's M test was not significant ( $p > 0.05$ ) indicating the assumption of equal covariance matrices for the dependent variables was met. Statistical significance ( $p < 0.001$ ) meant the correlation between the two dependent variables was sufficient. Results for Levene's test for knowledge, attitude, practices were not significant ( $f = 1.75$ ,  $p = 0.16$ ;  $f = 1.05$ ,  $p = 0.37$ ;  $f = 1.282$ ,  $p = 0.28$ , respectively). These results indicated that the homogeneity of variance assumption were met for KAP variables.

### ***Ethical consideration***

This study was approved by the research ethics committee of Boromarajonani College of Nursing, Surat Thani. The approval number is 2016/06. Along with the questionnaire, the participants signed informed consent forms that explained the risks and benefits of voluntarily participating in the study. Completing and returning the questionnaires indicated that participants agreed to take part in the study.

### **Results**

Of 406 distributed questionnaires, 299 (73%) were completed and returned. Of 299 students, who returned the questionnaire, 118 (39.50%) were juniors and 181 (60.50%) were seniors. We found that around 61 % of the respondents never attended a class or training on palliative care previously. Of those that had attended a previous palliative care class or training, such training lasted from 1 hour to 8 hours, with an average of 3.39 hours. About 66 % of respondents had experience in providing palliative care to the dying and to the end stage patients, with an average of 1.34 patients (Min-Max = 1-7 cases).

As presented on Table 1, both year 3 and year 4 students had low mean scores for knowledge of palliative care. However, mean scores for attitude towards palliative care and practice of palliative care were high. Moreover, mean scores for palliative care knowledge, attitude, and practice for year 4 students than for year 3 students.

Mean scores on palliative care knowledge, attitude, and practice were higher for respondents with previous experience providing palliative care compared to those with no prior experience providing palliative care (Table 2). As shown in Table 3, there was a statistically significant difference in knowledge scores among nursing students who have different levels of experiences delivering on palliative care ( $F = 5.73$ ,  $p = 0.018$ ). However, there were no differences in knowledge scores among students from different years of study ( $F = 0.168$ ,  $p = 0.682$ ). Moreover, there was no interaction effect

between year of study and amount of experience delivering on palliative care. This means that the association between mean score for knowledge and year of study did not differ based on level of experience delivering on palliative care, for example ( $F=0.147$ ,  $p=0.702$ ). As shown in Table 4, there was not a statistically significant difference in attitude scores based on year of study or level of experience providing palliative care ( $F= 2.16$ ,  $p= 0.143$ ;  $F= .873$ ,  $p= 0.351$  respectively) and no interaction between year of study and experience delivering on palliative care ( $F= 1.41$ ,  $p= 0.236$ ). Similarly, there were not a statistically significant difference in practice score among different year of study and varying levels of experience delivering on palliative care ( $F= 1.966$ ,  $p= 0.162$ ;  $F= 0.892$ ,  $p=0.346$ , respectively), and no interaction between year and experience delivering on palliative care ( $F= 1.483$ ,  $p= 0.225$ ) (Table 5). We interpreted our findings to mean that no matter what year of nursing students were; students had similar scores for knowledge of, attitude on palliative care and experience delivering on palliative care.

**Table 1** Mean scores and standard deviations of knowledge, attitude, and practice (KAP) on palliative care among nursing students

KAP on palliative care	Year 3 (n=115)		Year 4 (n=180)	
	Mean	SD	Mean	SD
Knowledge on palliative care (score from 0-24)	14.44	2.58	14.99	2.22
Attitude on palliative care (score from 25-125)	97.33	10.37	97.38	9.12
Practice on palliative care (score from 28-112)	96.15	9.75	97.76	9.66

**Table 2** Mean scores and standard deviations of knowledge, attitude, and practice (KAP) on palliative care among nursing students who have (yes) and do not have prior experience providing palliative care (no)

KAP on palliative care	Yes (n=115)		No (n=180)	
	Mean	SD	Mean	SD
Knowledge on palliative care (score from 0-24)	14.88	2.48	14.70	2.31
Attitude on palliative care (score from 25-125)	99.96	8.48	95.73	9.95
Practice on palliative care (score from 28-112)	98.19	9.47	96.30	9.82

**Table 3** MANOVA results for mean knowledge scores on palliative care among nursing students who have different year of study (“year”) and of different levels of prior experience delivering palliative care (“experienced”)

Source	Sum of Squares	df	Mean Square	F	p	Partial $\eta^2$
Intercept	1897132.20	1	1897132.20	8388.42	0.000	0.991
year	13.97	1	13.97	0.168	0.682	0.001
experienced	475.16	1	475.16	5.73	0.018	0.027
year * experienced	12.21	1	12.21	0.147	0.702	0.001
Error	17258.45	208	82.97			

**Table 4** MANOVA results for mean attitude scores on palliative care among nursing students who have different year of study (“year”) and of different levels of prior experience delivering palliative care (“experienced”)

Source	Sum of Squares	df	Mean Square	F	p	Partial $\eta^2$
Intercept	44332.11	1	44332.11	8388.42	0.000	0.976
year	11.41	1	11.41	2.16	0.143	0.010
experienced	4.61	1	4.61	0.873	0.351	0.004
year * experienced	7.46	1	7.47	1.41	0.236	0.007
Error	1099.26	208	5.29			

**Table 5** MANOVA results for mean practices on palliative care among nursing students who have different year of study (“year”) and of different levels of prior experience delivering palliative care (“experienced”)

Source	Sum of Squares	df	Mean Square	F	p	Partial $\eta^2$
Intercept	1867523.58	1	1867523.58	20039.345	0.000	0.990
year	183.248	1	183.248	1.966	0.162	0.009
experienced	83.148	1	83.148	0.892	0.346	0.004
year * experienced	138.204	1	138.204	1.483	0.225	0.007
Error	19384.112	208	93.193			

## Discussion

Our first study objective was to assess the level of knowledge, attitude, and practice on palliative care of nursing students. Regarding this objective, the students’ mean score of knowledge were at low level for both year 3 and year 4. This finding is similar to those in many other studies, in which ursing students and nurses have rather low level of knowledge in palliative care (Karkada,

S., Nayak, B.S., & Malathi., 2011; Shea, J. Grossman, S. Wallace, Lange, J., 2010; Kassa, H., Murugan, R., Zewdu, F., Hailu, M., & Woldeyohannes, D., 2014; Ayed, A. Sayej, S., Harazneh, L. Fashafsheh, I., & Eqta, F., 2015, Prem, V. et al. (2012) and positive attitude towards palliative care (Karkada, S., Nayak, B.S., & Malathi., 2011).

In our study, 61% of respondents were seniors, 61% of the respondents never attended a class or training on palliative care, but 62% had palliative care experience. Even though a majority of senior and junior nursing students had previous experiences providing palliative care, a majority of them had never attended the palliative care class or training. This finding is due to the fact that the a current Bachelor of Nursing Science program at nursing colleges under the auspice of Praboromarajchanok Institute, Ministry of Public Health does not include a specific topic or course specifically focused only on palliative care. Some nursing instructor mentioned that some instructors may include the topic of palliative care in a class lecture on nursing care for patients with cancer.

Our second study objective was to test for differences in mean score of knowledge, attitude, and practice of palliative care among nursing students who have different levels of palliative care class and different levels of prior experience delivering palliative care.

Attitude scores were at high level and practice scores were at high level for both year 3 and year 4 students. Moreover, mean scores on knowledge, attitude, and practice were higher for year 4 students than for year 3 students. Mean scores on knowledge, attitude, and practice of palliative care among respondents who have prior experience providing palliative care were higher than those who had no prior experience providing palliative care. Similar to our findings, a study of nurses in Palestine also showed that nurses with previous experience and training on palliative care had higher level of knowledge of palliative care than did the nurses without experience and training (Ayed, A. Sayej, S., Harazneh, L. Fashafsheh, I., & Eqta, F., 2015).

We only found statistically significant differences for mean knowledge scores among nursing students who have different levels of prior experience delivering palliative care ( $F=5.73$ ,  $df = 1$ ,  $p=.018$ ). Our finding was similar to the results in many others studies that showed that those with higher level of nursing studies have a higher level of knowledge, attitude, and/or practice on palliative care (Ross, M., McDonald, B. & McGumness, J., 1996; Al Qadire M., 2014.); Grubb, C., Arthur. (2016).

The lack of differences in mean scores for attitude and practice in our study among students at different years of study may be due to the fact that most 3<sup>rd</sup> and 4<sup>th</sup> year nursing students (61%) received no previous education and training on the topic of palliative care. For those nursing students who received education and training (39%), they only received an average of 1.29 hours of education and training. This amount of education and training may not have been enough to increase competencies to provide palliative care among nursing students. The findings in this study were similar to' findings in other studies which have shown that class or training experience and experience can increase attitude and practice skills on palliative care of nurses and students (Akarathanarak, T., Kongsuwan, W., &Matchin, Y., 2014).

Providing more hands-on experience with palliative care to nursing students can increase their knowledge of palliative care, improve their attitudes about care at the end of life, and enable nurses to have fewer reservations about providing nursing care to dying patients (Kwekkeboom, K.

L. Vahl, C., MS, Eland, J. , 2005). As mentioned earlier, the current curriculum for the Bachelor of Nursing Science program at the Colleges of Nursing, Praboromarajchanok Institute do not include a specific course or subject related to palliative care. However, palliative care is included in a course about the nursing care of persons with health problems. Also, nursing students do practicum in providing care for end of life people in a practicum course about nursing care of persons with health problem. Thus, students will have some experiences in providing palliative care. In order to enhance and improve the knowledge, attitude, and practice in providing palliative care among nursing students, we recommend that there should be changes in the current nursing curriculum.

The nursing curriculum from other countries can teach us lots of lessons about improving the palliative training for nurses. For example, according to American Association Colleges of Nursing (AACN) and City of Hope, the education and training on palliative care in End-of-Life Nursing Education Consortium (ELNEC) includes 8 learning modules involving 1) introduction to palliative care, 2) pain management, 3) symptom management, 4) ethical issues, 5) culture and spiritual aspects, 6) communication, 7) care for loss, grief, and bereavement, and 8) care in final hour Ferrell, B., Malloy, P., Virani, R, 2015). In providing palliative care to the patients, American nursing students should possess 17 competencies, aimed in ELNEC American Association of Colleges of Nursing. CARES (2018), the education and training should last at least 2 hours for each module.

### Limitations

We conducted a cross sectional study and relied on a self-reported survey that may result in response bias. For example, participants may be look for answers from other sources of information in order to answer the knowledge session of questionnaire, instead of relying on their own understanding of palliative care. To avoid such errors, another type of questionnaire could be developed. For example, instead of a multiple-choice questionnaire, participants could be asked to provide a short answer response to a scenario about the end-of-life situation in hospital and/or in a community setting.

### Conclusion and implication for nursing education and practice

This study found that nursing students had low scores for knowledge of palliative care, but moderate scores for attitude and practice of practice of palliative care. These findings suggest students had limited instructional time to learn about palliative care in a classroom setting. Thus, more education, training, and hands-on experience on palliative care should be given to nursing students to improve their knowledge, attitude, and practice (KAP) of palliative care, particularly knowledge. In order to increase KAP on palliative care or palliative care competencies of nursing students, additional curriculum should be developed and provided to all nursing students.

The curriculum developers should pay attention on increasing various different competencies of nursing students. For example, one of 17 PC competencies for American nursing students outlined that students should be able to assess, plan, and treat patients' physical, psychological, social and spiritual needs to improve quality of life for patients with serious illness and their families. The contents of teaching should also line with current evidence-based practice. For instance, in the topic of providing care to promote dignified dying, students should be taught

how to provide care that maintains dignity and privacy, establishes trust, manages pain, establishes rapport, and manages dyspnea (Doorenbos, et, al., 2013).

In addition, in the real practice of palliative care, the care delivered to patients is from a multidisciplinary team. Therefore, in the curriculum, if it is possible in preparing nursing students for their knowledge, attitude, and practice, the students should be assigned to learn and practice with other disciplines such as with medical, pharmacy, and social worker students. The curriculum components should contain didactic modules, working days with palliative care patients, critical reflective writing assignment, and interdisciplinary care management experience (Hermann, C., Head, B.A., Black, K., Singleton, K., 2016).

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