

# Nursing Students' Understanding of Palliative Care in Palestine

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Palliative care is a method of preventing and alleviating suffering for patients who have been diagnosed with terminal diseases by early detection, accurate assessments, and pain and symptom management. Patients and their families can then mitigate related physical, psychological, and spiritual challenges and thus will have a better quality of life. This article reports a study that evaluated undergraduate nursing students' knowledge of and attitude and self-efficacy toward palliative and end-of-life care in Palestine. A descriptive, cross-sectional design was used among a convenience sample of 449 undergraduate nursing students at the end of their second, third, and fourth years. The results of this research revealed that nursing students had low levels of knowledge about palliative care and low self-efficacy toward end-of-life care. The majority of students reported a positive disposition toward the provision of end-of-life care. The most important predictors of knowledge, attitudes, and self-efficacy were age, having attended a seminar/lecture on the issue, experiencing death while providing care, and having experienced a death in the family or close friends. Furthermore, elevated levels of knowledge were significantly associated with higher level of attitude ( $P < .001$ ) about palliative care. **Key words:** *education, end-of-life care, nursing students, palliative care*

**T**HE FOCUS of palliative care (PC) is making patients as comfortable as possible as they approach end of life.<sup>1</sup> PC is intended to

enhance the quality of patients in those who have life-limiting illnesses or severe medical conditions, as well as to lessen their suffering. PC standards must be improved considering rising mortality and aging rates around the world.<sup>2</sup>

Caring is the core of the nursing profession and is at the heart of uniqueness of nursing, and PC exemplifies this.<sup>3</sup> PC is a way of solving problems related to life-limiting illnesses by decreasing the suffering of patients, recognizing physical and psychological problems they experience, and managing pain and discomfort as early as possible. It is, therefore, a method for fostering the best quality of life possible and promoting the mental and social well-being of patients.<sup>4</sup> Every year, over 40 million individuals require PC worldwide, yet only 14% of those receive it.<sup>5</sup>

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Nursing students must have the necessary education, training, knowledge, vision, and attitude associated with PC to effectively handle terminal patients.<sup>1</sup> In addition, they need to be properly educated and trained in many aspects of PC including pain and symptom management and mental and emotional support for not only patients but also their families.<sup>6,7</sup>

Nurses are considered the first point of care, evaluation, and identification of patients' suffering in the health care system.<sup>8</sup> Compared with all other health care workers, they also spend the most time with their patients.<sup>9</sup> Nursing is viewed as the cornerstone of PC because the nurse is the primary person at the bedside and is responsible for coordinating the patient's care and thus plays a vital role in PC. Therefore, to achieve the desired outcomes of PC and management, nurses must be well prepared, trained, and educated on all aspects of PC.<sup>10</sup>

Previous studies have underlined the need for more PC training opportunities in university education.<sup>11-13</sup> Structured training that integrates both theory and practice, in particular, appears to enhance mindsets about PC.<sup>14,15</sup> Thus, inadequate PC training and education for nursing students will put the caliber of the care delivered to those with terminal diseases in jeopardy.<sup>16</sup>

Nursing education is thus a crucial component in ensuring nurses are able to provide effective and long-term PC.<sup>17</sup> It is paramount to deliver rigorous training and courses to nursing students to enhance their knowledge and skills, allowing them to deliver excellent care to patients as they approach the end of their life.<sup>18</sup>

End-of-life (EoL) self-efficacy is the belief that one can deliver excellent EoL care (also known as perceived competence). Self-efficacy is vital, as employing nurses who see themselves as unfit to deliver care for a dying patient or refuse to do so will likely result in poor clinical outcomes and staff fatigue.<sup>19</sup> According to Adesina and colleagues,<sup>15</sup> 63% of nursing students in their third year in Australia had low self-efficacy and did not

report feeling equipped to provide care for terminally ill patients. More alarming, a quarter of nurses working in oncology said they were not fully equipped to deliver effective EoL care in their practice.<sup>20</sup> Even nurses with years of practice reported limits in the perception of their capacity to offer effective PC, although professional exposure and experience have been demonstrated to be connected with self-efficacy.<sup>20</sup>

Worldwide, nursing school curricula do not provide adequate training and education regarding the concepts of PC. The experience, beliefs, knowledge, and training of nurses all play an important role in improving staff attitudes toward PC.<sup>21</sup>

Among Palestinian undergraduate nursing students, the overall knowledge, self-efficacy, and attitudes regarding PC and hospice care are still unclear. Therefore, it is necessary to evaluate these aspects to gain a better understanding of the challenges that limit their ability to deliver high-quality PC. This will then inform the formation of educational programs that are suitable for Palestinians from various social and cultural backgrounds. The aim of the current study is thus to evaluate students' knowledge levels and self-efficacy about PC and attitudes on EoL care in an undergraduate nursing program at Arab American University, Palestine. Furthermore, this study will assess the association between certain traits and sociodemographic factors among nurses and their knowledge, attitudes, and self-efficacy toward PC.

## METHODS

We conducted a cross-sectional survey with nursing students in their undergraduate studies upon the completion of their second, third, and fourth years of study at Arab American University, Palestine, to achieve the aim of the study. First-year students were not included as they had only completed general courses in biology and medicine in their first year.

The study was ethically approved by the Faculty of Nursing at Arab American

University, Palestine. We informed the nursing students that participation was completely voluntary and anonymous, and no penalty would be imposed for nonparticipation and were promised that the information collected would be kept private. In addition, all eligible volunteers were made aware of the study goal. The study was conducted in May and June 2021. The questionnaire took 20 to 25 minutes to complete.

### Data collecting tool

The researchers collected data utilizing a self-administered questionnaire, which was developed from a review of previous literature and was divided into 4 parts:

- *Part 1 (demographic data)*. It consisted of 7 items (students' age, gender, academic year, whether they had attended a seminar or lecture on PC, and having experienced the death of a patient or provided EoL while in a clinical setting or in the family).
- *Part 2*. The Frommelt Attitude Toward the Care of the Dying Scale Form B (FATCOD-B) was used to evaluate Palestinian undergraduate nursing students' views on the caring for dying patients and their families.<sup>22</sup> "The FATCOD-B is a self-report questionnaire consisting of 30 randomly arranged items. Half of the statements are positive, and half are negative. Items were rated on a 5-point Likert-type scale ranging from 1 to 5, where 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, 5 = strongly agree." Each statement in the questionnaire included a rating system for participants to report the degree to which they agreed or disagreed with it. Total scores can range from 30 to 150 and the higher the score, the more positive the attitudes. In the English version, the FATCOD-B internal consistency was represented by a value of 0.89.<sup>23</sup>
- *Part 3*. The Palliative Care Self-Efficacy Scale<sup>24</sup> measures the respondent's perception of providing PC; it has "two subscales including psychosocial support (6 items, items 1-6) and symptom management (6 items, items 7-12)." The scale features a

grading system of 4 points, with 1 indicating "need further basic instruction," 2 indicating "confident to complete with close supervision," 3 indicating "confident to complete with minimal consultation," and 4 indicating "confident to complete independently." Participants thus rate their self-confidence in their capacity to carry out each PC task. Cronbach's  $\alpha$  values for psychosocial assistance and symptom management were 0.90 and 0.74, respectively.<sup>25</sup>

- *Part 4*. Ross et al<sup>26</sup> developed the Palliative Care Quiz for Nursing (PCQN), which is a frequently used and well-validated test for measuring knowledge about PC. The PCQN-C includes a total of 20 classification items divided into 3 subscales. "Palliative care philosophy (4 items), pain and symptom management (13 items), and psychosocial and spiritual care (3 items)." For every element, participants answered "true," "false," or "don't know." Correct answers are allotted 1 point, while wrong and "don't know" answers receive 0 point. Total scores can range from 0 (indicating the least knowledge) to 20 (indicating the most knowledge). In the original English version, the internal consistency reliability was 0.78.<sup>27</sup>

### Statistical analysis

Analysis of data collected was completed via the SPSS statistical software package. Descriptive statistical analysis in the form of frequencies and percentages was presented in tables and figures. Also, multivariate linear regression for predictors of the PCQN, FATCOD, and self-efficacy was used, with statistical significance set at  $P < .05$ .

## RESULTS

### Sociodemographic characteristic

In total, 540 online surveys were distributed among participants via the university platform and 449 students finished the survey with a response rate of 83%. As shown

**Table 1.** Distribution of Participants’ Sociodemographic Characteristic

Variable	Mean (Standard Deviation)	n (%)
Age	20.2 (1.78)	
Gender		
Male		167 (37.1)
Female		283 (62.9)
Educational level		
Second year		185 (41.1)
Third year		142 (31.6)
Fourth year		123 (27.3)
“Attended seminar/lecture on palliative care in the past?”		
Yes		247 (54.9)
No		203 (45.1)
“Received education on end-of-life care during undergraduate studies?”		
Yes		217 (48.2)
No		233 (51.8)
“Experienced death of patient during clinical placement?”		
Yes		208 (46.2)
No		242 (53.8)
“Experienced death of family member /friend in the past?”		
Yes		193 (42.9)
No		257 (57.1)

in Table 1, the findings indicated that the average age of nursing students was 20.2 (SD = 1.78) years. With regard to gender, 62.9% of participants were female. Over half of the students (54.9%) stated that they had attended a lecture or a seminar about PC in the past, while less than half (48.2%) stated that they received training about EoL care during their undergraduate studies. Moreover, less than

half of the students (46.2%) reported experiencing the death of a patient in a clinical or professional setting, and an even smaller percentage (42.9%) reported that they had experienced the death of a relative or friend in the past.

**Students’ attitude on EoL care**

The mean FATCOD score ranged between 96 and 125.7,\* as seen in Table 2. In general, students’ attitude toward EoL care tends to be positive, with a trend toward agreeing with specific care being used in the care for terminally ill patients using PC guidelines and involving families or networks of support in the plan for care. Some students did report discomfort with care, particularly when it came to their own care of a terminal patient. For example, 75.9% of students “would be upset when the dying person I was caring for gave up hope of getting better” and 67.9% had negative attitude toward some PC principles agreeing that “family members who stay close to a dying person often interfere with the professionals’ job with the patient.” The majority of students (82.0%) had positive attitudes on the idea that it is worth learning about nursing care for dying patients. On the other hand, when speaking about their willingness to be appointed to the care of a terminal patient, 58.6% would not want to do so.

**Students’ self-efficacy and EoL care**

The mean self-efficacy score for students was 54.75 out of 100 (standard deviation = 22.74), indicating low levels of self-efficacy with wide variety. The median score was 50 out of 100, ranging from 25 to 100 out of 100. Table 3 includes students’ responses concerning their self-efficacy in the provision of EoL care and shows a general need for further basic instruction, with the smallest percentages

\*Based on the tool of the study, we have 30 questions ranked from 1 to 5 and the minimum (1 × 30 = 30 ) to maximum (5 × 30 = 150) score, so the lowest score was 3.2 (3.2 × 30 = 96) and the highest score 4.19 (4.19 × 30 = 125.7).

**Table 2.** Distribution of Students' Responses to Attitude Statements About End-of-Life Care

Statement	Mean (Standard Deviation)	D/SD n (%)	U n (%)	A/SA n (%)
1. "Giving nursing care to the dying person is a worthwhile learning experience."	4.15 (1.087)	43 (9.6)	38 (8.5)	368 (82.0)
2. "Death is not the worst thing that can happen to a person."	3.58 (1.39)	101 (22.5)	53 (11.8)	295 (65.7)
3. "I would be uncomfortable talking about impending death with the dying person."	3.96 (1.073)	44 (9.8)	68 (15.1)	337 (75.1)
4. "Nursing care for the patient's family should continue throughout the period of grief and bereavement."	4.02 (1.029)	37 (8.2)	64 (14.3)	348 (77.5)
5. "I would not want to be assigned to care for a dying person."	3.53 (1.308)	102 (22.7)	84 (18.7)	263 (58.6)
6. "The nurse should not be the one to talk about death with the dying person."	3.68 (1.143)	70 (15.6)	107 (23.8)	272 (60.0)
7. "The length of time required to give nursing care to a dying person would frustrate me"	3.57 (1.255)	96 (21.4)	92 (20.5)	261 (58.1)
8. "I would be upset when the dying person I was caring for gave up hope of getting better."	3.99 (1.056)	45 (10.0)	63 (14.0)	341 (75.9)
9. "It is difficult to form a close relationship with the family of a dying person."	3.54 (1.182)	85 (18.9)	115 (25.6)	249 (55.5)
10. "There are times when death is welcomed by the dying person."	3.84 (1.072)	53 (11.8)	74 (16.5)	322 (71.7)
11. "When a patient asks, Nurse am I dying?, I think it is best to change the subject to something cheerful."	3.83 (1.121)	58 (12.9)	86 (19.2)	305 (67.9)
12. "The family should be involved in the physical care of the dying person."	4.00 (1.032)	38 (8.5)	73 (16.3)	338 (75.3)
13. "I would hope the person I'm caring for dies when I am not present."	3.56 (1.284)	92 (20.5)	92 (20.5)	265 (59.0)
14. "I am afraid to become friends with a dying person"	3.71 (1.196)	75 (16.7)	86 (19.2)	288 (64.1)
15. "I would feel like running away when the person actually died."	3.49 (1.257)	102 (22.7)	102 (22.7)	245 (54.6)
16. "Families need emotional support to accept the behavior changes of the dying person."	4.09 (1.051)	37 (8.2)	61 (13.6)	351 (78.2)
17. "As a patient nears death, the nurse should withdraw from his/her involvement with the patient"	3.20 (1.427)	147 (32.7)	95 (21.2)	207 (46.10)
18. "Families should be concerned about helping their dying member make the best of his/her remaining life"	4.04 (1.090)	41 (9.1)	68 (15.1)	340 (75.7)

*(continues)*

**Table 2.** Distribution of Students' Responses to Attitude Statements About End-of-Life Care (Continued)

Statement	Mean (Standard Deviation)	D/SD n (%)	U n (%)	A/SA n (%)
19. "The dying person should not be allowed to make decisions about his/her physical care."	3.52 (1.236)	85 (18.9)	119 (26.5)	245 (54.6)
20. "Families should maintain as normal an environment as possible for their dying member."	4.19 (0.975)	26 (5.8)	61 (13.6)	362 (80.6)
21. "It is beneficial for the dying person to verbalize his/or feelings."	4.18 (0.916)	19 (94.2)	68 (15.1)	362 (80.6)
22. "Nursing care should extend to the family of the dying person."	3.91 (1.047)	37 (8.2)	97 (21.6)	315 (70.2)
23. "Nurses should permit dying persons to have flexible visiting schedules."	3.91 (1.080)	48 (10.7)	85 (18.9)	316 (70.4)
24. "The dying person and his/her family should be the in-charge decision makers."	3.89 (1.062)	36 (8.0)	103 (22.9)	310 (69.0)
25. "Addiction to pain relieving medication should not be a nursing concern when dealing with a dying person."	3.67 (1.217)	77 (17.1)	98 (21.8)	274 (61.0)
26. "I would be uncomfortable if I entered the room of a terminally ill person and found him/her crying."	3.84 (1.151)	62 (13.8)	82 (18.3)	305 (67.9)
27. "Dying persons should be given honest answers about their condition."	3.86 (1.079)	48 (10.7)	95 (21.2)	306 (68.2)
28. "Educating families about death and dying is not a nursing responsibility."	3.42 (1.290)	124 (27.6)	94 (20.9)	231 (51.4)
29. "Family members who stay close to a dying person often interfere with the professionals' job with the patient."	3.85 (1.098)	51 (11.4)	93 (20.7)	305 (67.9)
30. "It is possible for nurses to help patients prepare for death."	3.86 (1.086)	54 (12.0)	80 (17.8)	315 (70.2)

Abbreviations: A, agree; D, disagree; SA, strongly agree; SD, strongly disagree; U, uncertain.

falling within the category of being confident with minimal consultation.

For example, 39.6% of students reported they needed further basic instructions regarding responding to patients' inquiries into the details of the dying process, while 34.2% reported that they needed close supervision when offering the patient or their family support when they are distressed. Moreover,

32.4% reported they needed close supervision when examining various clinical and nonclinical settings, like hospital, home, or family, while only 15.6% stated they were confident with minimal supervision when answering questions about the effects of medications and only 18.9% reported they were fully confident responding to and managing terminal delirium.

**Table 3.** Distribution of Students' Responds to Self-Efficacy Scale About End-of-Life Care<sup>a</sup>

Statement	A n (%)	B n (%)	C n (%)	D n (%)
1. "Answering patients' questions about the dying process"	178 (39.6)	139 (30.9)	64 (14.2)	69 (15.3)
2. "Supporting the patient or family member when they become upset"	124 (27.6)	154 (34.2)	75 (16.7)	97 (21.6)
3. Informing people of the support services available"	140 (31.1)	142 (31.6)	78 (17.3)	90 (20.0)
4. "Discussing different environmental options (eg, hospital, home, family)"	136 (30.2)	146 (32.4)	87 (19.3)	81 (18.0)
5. "Discussing patient's wishes for after their death"	167 (37.1)	135 (30.0)	69 (15.3)	79 (17.6)
6. "Answering queries about the effects of certain medications"	148 (32.9)	151 (33.6)	70 (15.6)	81 (18.0)
7. "Reacting to reports of pain from the patient"	160 (35.6)	146 (32.4)	63 (14.0)	81 (18.0)
8. "Reacting to and coping with terminal delirium"	148 (32.9)	160 (35.6)	57 (12.7)	85 (18.9)
9. "Reacting to and coping with terminal dyspnea (breathlessness)"	166 (36.9)	125 (27.8)	80 (17.8)	79 (17.6)
10. "Reacting to and coping with nausea/vomiting"	156 (34.7)	138 (30.7)	61 (13.6)	95 (21.1)
11. "Reacting to and coping with reports of constipation"	150 (33.3)	146 (32.4)	64 (14.2)	90 (20.0)
12. "Reacting to and coping with limited patient decision-making capacity"	166 (36.9)	129 (28.7)	67 (14.9)	88 (19.6)

<sup>a</sup>A = "need further basic instructions," B = "confident to perform with close supervision/coaching," C = "confident to perform with minimal consultant," and D = "confident to perform independently."

### Knowledge about palliative care

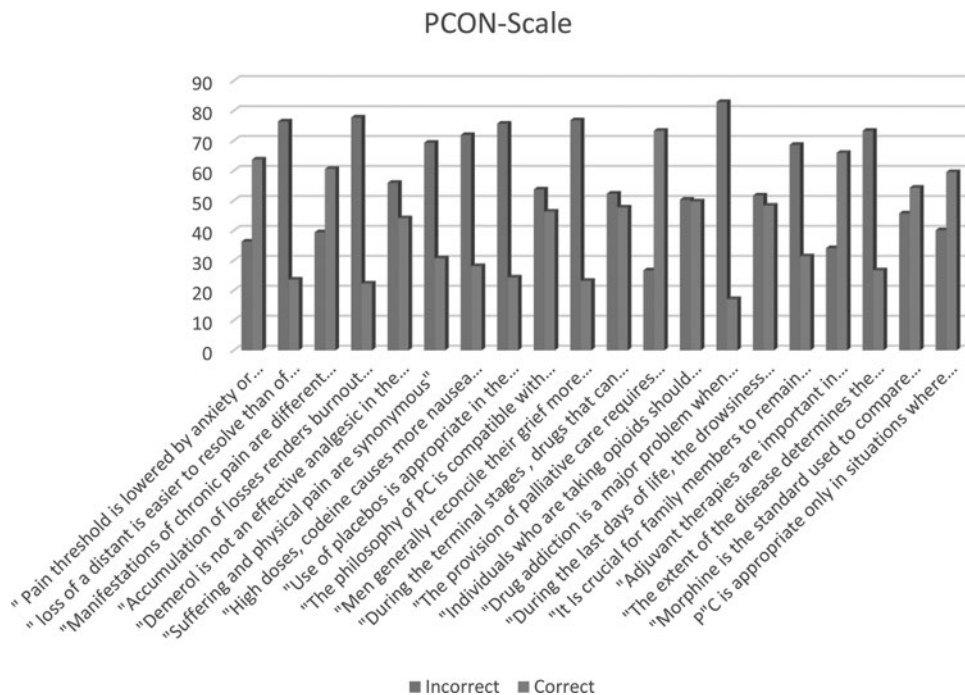
More than half of the students (65%) were lacking knowledge regarding PC, while only 34.4% demonstrated good knowledge levels and 1.8% had fair knowledge. As shown in the Figure, the knowledge level regarding PC among students can be considered weak, as most statements were answered correctly by less than the acceptable cutoff point of 75%.

### Predictors of students' knowledge, attitudes, and self-efficacy

As shown in Table 4, the study found that the strongest statistical predictors of higher levels of knowledge of PC and EoL care were the variables of age ( $P < .05$ ), having attended a seminar/lecture ( $P < .001$ ), and experiencing death while in clinical placement ( $P < .001$ ). Having attended a seminar/lecture

( $P < .001$ ) was the only strong predictor of a positive mindset about palliative and EoL care. Attending a seminar/lecture ( $P < .001$ ), experiencing death while in clinical placement ( $P < .001$ ), and the experience of death within the family ( $P < .05$ ) were the strongest predictors for high levels of confidence and self-efficacy toward palliative and EoL care. Thus, students who attended a lecture and received an education about palliative and EoL care and those who had professional exposure to death either at a clinical placement and/or of a relative or friend had significantly better knowledge, positive attitudes, and more self-efficacy toward PC than those who had not ( $P < .001$ ).

Lastly, Table 5 shows that the association between students' knowledge and their self-efficacy is weak and positive, which means that an increased level of knowledge is



**Figure.** Distribution of students' answers regarding level of knowledge about palliative care.

associated with increased self-efficacy (correlation = 0.041). Moreover, there is a very weak negative nonsignificant relationship between attitudes and self-efficacy ( $P = .377$ ), which means that increasing levels of positive attitudes are associated with decreased levels of self-efficacy (correlation =  $-0.042$ ). Conversely, a better level of knowledge was significantly associated with a more positive attitude ( $P < .001$ ) in a moderate way (correlation = 0.355).

**DISCUSSION**

Our results offered an overview of knowledge, attitudes, and self-efficacy regarding PC and EoL care among Palestinian nursing students. Despite low levels of knowledge about PC and low self-efficacy toward EoL care, the results indicated that our students had mostly affirmative mindsets when it comes to EoL care. The most important predictors of knowledge, attitudes, and self-efficacy were age, having attended a seminar/lecture on PC,

experiencing death while in clinical placement, and having had dealt with the dying process within the family.

The analysis showed that participant students had a positive mindset toward both death and the process leading up to it, but they required more knowledge and self-efficacy in PC and EoL care. Zhou et al<sup>28</sup> also found that nursing students reported a positive view toward death and general PC, but lacked knowledge and self-efficacy in PC. Oncology nurses in Vietnam, according to Nguyen et al,<sup>29</sup> had positive attitudes regarding EoL care but lacked knowledge and self-competence in PC.

The data also revealed that the majority of participants in the survey reported a positive disposition toward providing support and care for patients with terminal diagnoses, with our students' average attitude scores being slightly higher than another set of Palestinian nursing students,<sup>11</sup> Iranian students,<sup>30</sup> and Chinese nursing students.<sup>12</sup> That level, however, is significantly less than studies



**Table 4.** Multivariate Linear Regression of the PCQN, FATCOD, and Self-Efficacy

Predictor Variable	PCQN/Knowledge About Palliative Care				FATCOD				Self-Efficacy			
	<i>b</i>	SE	<i>B</i>	<i>t</i>	<i>b</i>	SE	<i>B</i>	<i>t</i>	<i>b</i>	SE	<i>B</i>	<i>t</i>
Gender	0.017	0.015	0.052	1.148	0.016	0.038	0.020	0.424	-0.014	0.066	-0.009	-0.208
Age	0.010	0.004	0.121	2.472 <sup>a</sup>	0.012	0.011	0.059	1.170	0.013	0.018	0.034	0.693
Level of education	-0.010	0.010	-0.054	-1.062	0.011	0.025	0.022	0.418	0.017	0.043	0.020	0.393
Received education	0.025	0.018	0.078	1.347	0.026	0.047	0.033	0.563	0.111	0.081	0.078	1.367
Attended seminar/lecture	0.063	0.018	0.201	3.471 <sup>b</sup>	0.145	0.047	0.182	3.085 <sup>b</sup>	0.236	0.081	0.166	2.906 <sup>b</sup>
Experienced death: clinical placement	0.045	0.015	0.144	2.952 <sup>b</sup>	0.097	0.039	0.123	2.470	0.269	0.068	0.190	3.953 <sup>b</sup>
Experienced death of family	0.019	0.015	0.059	1.239	0.055	0.039	0.069	1.424	0.138	0.067	0.097	2.066 <sup>a</sup>
Model statistics	<i>R</i> = 0.359 <i>R</i> <sup>2</sup> = 0.129 Adjusted <i>R</i> <sup>2</sup> = 0.115				<i>R</i> = 0.305 <i>R</i> <sup>2</sup> = 0.093 Adjusted <i>R</i> <sup>2</sup> = 0.078				<i>R</i> = 0.384 <i>R</i> <sup>2</sup> = 0.148 Adjusted <i>R</i> <sup>2</sup> = 0.134			

Abbreviations: FATCOD, Frommelt Attitude Toward the Care of the Dying Scale; PCQN, Palliative Care Quiz for Nursing.

<sup>a</sup>*P* < .05.

<sup>b</sup>*P* < .001.

**Table 5.** Relationship Between Students' Level of Knowledge and Attitude and Self-Efficacy

Independent Variable	Dependent Variable	Self-Efficacy	Attitude	Knowledge
Self-efficacy	Pearson correlation	1	-0.042	0.041
	Significance (2-tailed)		.377	.387
Attitude	Pearson correlation	-0.042	1	0.355
	Significance (2-tailed)	.377		<.001
Knowledge	Pearson correlation	0.041	0.355	1
	Significance (2-tailed)	.387	<.001	

carried out among nursing students in the United States,<sup>31</sup> Greece,<sup>32</sup> and Sweden.<sup>1</sup> According to Abu-El-Noor and Abu-El-Noor,<sup>11</sup> Turkey and Arab countries, such as Palestine, have common cultural and religious beliefs, which could explain why Turkish nursing students scored similarly to those in Palestine.

Other countries including the United States and Sweden may have a lengthy history and longstanding policies of integrating PC in nursing schools, which could be one explanation of those elevated scores in attitudes toward EoL care. As a result, those nursing students are able to access adequate PC training.<sup>28</sup> According to Hensch et al,<sup>1</sup> all 6 Swedish university studied provided training and courses on PC for nursing students, though variations in the theory of PC education existed among those universities.

Students who received a lecture about PC or education about EoL in their undergraduate studies had significantly higher levels of positive attitudes toward PC, according to our findings. This is in line with the results of other studies, which found that students who participated in an educational program or who provided information about support and care for terminal patients had more positive attitudes toward PC.<sup>1,9</sup>

Furthermore, Gillan et al<sup>33</sup> noted in their analysis of the literature that nursing schools do not give appropriate education linked to the care of both dying patients and their families; this may explain why nurses are unable to provide such care.

Our study revealed that there was no statistically significant difference in students' attitudes toward PC based on their age, gen-

der, or level of education but attitudes were significantly more positive among students who attended a seminar/lecture about EoL care. This finding is inconsistent with Laporte et al<sup>34</sup> and Dimoula et al,<sup>32</sup> who found that older age and advanced academic year had a positive association.

In addition, as previously mentioned, earlier research conducted in the United States has revealed that registered nurses have better attitudes than nursing students and disparities between the 2 groups could also be due to a lack of experience.<sup>35</sup>

In our sample, students who reported caring for a dying patient in a clinical setting and/or who had experienced the death of a family member or friend had significantly higher level of knowledge and self-competence regarding EoL care and also had significantly better attitudes. Our findings are consistent with previous studies, which revealed that nursing students' attitudes regarding PC can be significantly influenced if they have experienced the death of a patient or a family member.<sup>36-38</sup> These results suggest that EoL and PC should be a part of the academic education process and that nursing students should participate in role plays and scenarios during their education enabling them to create more positive attitudes regarding this issue in the clinical setting. Adesina et al<sup>13</sup> revealed that students reported that their knowledge of EoL care was mostly derived from previous personal experience with terminally ill patients. On the other hand, several studies found that caring for dying patients did not predict attitudes about EoL care.<sup>1,39</sup> Other studies found

that older age appears to be a good predictor of nursing students' attitudes toward EoL ability.<sup>38,40</sup>

In general, gender did not appear to be a major predictor of nursing students' attitudes toward caring for dying patients and their families. Our findings in this area are similar to those of earlier studies on undergraduate nursing students.<sup>11,28,32,41-43</sup> However, 2 previous studies have found that female nursing students demonstrated more knowledge and had more positive attitudes than male nursing students, a fact that is difficult to explain.<sup>23,32</sup>

In terms of general PC knowledge, nursing students in our study had a PC knowledge deficit, with a mean score that was similar to the relatively low levels seen in previous Jordanian and Palestinian research studies.<sup>27,43</sup> This score was slightly lower than the mean score of Canadian,<sup>44</sup> Chinese,<sup>28</sup> and Greek<sup>32</sup> students but greater than the results of Saudi Arabian nursing students.<sup>21</sup> This could be explained by the lack of PC teaching in those nursing programs.<sup>21,32</sup>

There was no significant variation in knowledge levels among students based on their gender or educational level in our sample, but there was significant variation with age. This could be due to a combination of professional and life experiences, mental maturity, and age-related information absorption.<sup>32</sup>

In our sample, nursing students who had attended a lecture/seminar about PC or EoL care in their undergraduate studies had better levels of knowledge. This is similar to Aboshaiqah's<sup>21</sup> study, which showed that those who had taken a PC course in nursing schools had knowledge scores that were much higher than those who had not. Previous studies revealed that PC courses in nursing programs have a favorable impact on students' PC knowledge.<sup>21,31,45</sup>

Our students who had experienced death during clinical placement or the death of a relative or friend had significantly higher levels of knowledge about PC than those did not. These findings contrast with Zhou et al,<sup>28</sup> who found that experience with death, whether in the family or while on placement, did not

significantly predict knowledge levels. Moreover, neither professional experience nor experiencing a patient's death while on placement was significant indicators of students' knowledge or attitudes according to Dimoula et al.<sup>32</sup>

Concerning self-efficacy toward EoL care, our students showed a general need for further basic instruction, with the smallest percentage of the sample being confident with minimal consultation. We found no variations in self-efficacy levels with gender, age, or level of education; however, Max and MacKenzie<sup>46</sup> discovered a significant association between age and self-efficacy, implying that older students have a higher level of self-efficacy. Students who attended a lecture on PC, received EoL education during their undergraduate studies, and experienced death during clinical placement had significantly higher self-efficacy levels.

Higher levels of knowledge were found to be substantially associated with a better attitude toward caring for the dying in this study. Inconsistent with this finding, Zhou et al<sup>28</sup> used the PCQN and the FATCOD and found no significant association between knowledge and attitudes toward caring for the dying and self-efficacy. However, our findings are consistent with those of Dimoula et al,<sup>32</sup> who found a low positive association between knowledge and attitudes regarding caring for the dying. It thus follows that palliative education in nursing schools is a crucial element of preparing nursing students for EoL care and is perhaps the most important influencing factor on their attitudes about dying people.<sup>33</sup>

However, we discovered that higher levels of knowledge are linked to higher levels of self-efficacy in PC though the result was statistically insignificant. This finding is consistent with Zhou et al,<sup>28</sup> who observed that student self-efficacy was positively affected by students' level of knowledge. Yet, in our results there was a very weak negative link between attitudes and self-efficacy, which contradicts Max and MacKenzie,<sup>46</sup> who showed that higher student attitude scores had a positive impact on self-efficacy.

## CONCLUSION

The results of the current study revealed that while undergraduate nursing students have positive attitudes toward death and EoL care, they have low levels of knowledge and self-efficacy when it comes to PC. This could be linked to nursing programs that do not provide enough PC education. The study emphasizes the need for enhancing and incorporating PC education into undergraduate nursing curricula and further strengthening them through postgraduate education and in-service training.

This will assist in ensuring that nurses have the necessary information, skills, and attitudes to deliver palliative and EoL care. As a

result, the health system will be better able to deliver effective palliative and EoL care to patients approaching death and their families, thus enhancing the quality and outcomes of care. Nevertheless, the conclusions of the current study may not apply to all nursing students in Palestine because it was conducted in one university.

Future research studies are needed in this area to fully illuminate the practical issues that arise in clinical settings and to inform the adoption of a PC-based delivery paradigm. The findings suggest that future training should focus on strengthening not only nursing students' knowledge of PC, but also their self-efficacy.

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