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Status and correlates of attitudes towards end-of-life care among nursing students

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ABSTRACT

Background & Aim: Palliative nursing is based on the ability of nursing students to use their accumulated experiences and knowledge; however, basic nursing education does not provide adequate knowledge and skills regarding palliative and end-of-life care. This study aimed to examine the relationship between knowledge of end-of-life care and attitudes toward dying people among nursing students.
Methods & Materials: Cross-sectional, descriptive-correlational design was used in this study. A total of 708 nursing students were recruited conveniently from nursing students in 11 nursing programs. Data was collected using an online self-administered questionnaire in relation to knowledge and attitudes regarding palliative care using the palliative care quiz for nursing and Frommelt Attitudes Toward Care of the Dying Scale Form B (FATCOD-B).
Results: Nursing students have a satisfactory level of knowledge about palliative care with a mean of 61.0% and 50% of them scoring 83% correct answers. Moreover, students also have a moderate to high mean score (102.7, SD= 11.2) on attitudes towards caring for dying patients, indicating positive attitudes. Positive correlation found between communication and family as caregiver subscales of attitudes with knowledge total score (r= .08, r= .20, p< .05; respectively). The significant difference was found in attitudes related to gender, type of university, and whether receiving training or education about palliative care at school (p< .05).
Conclusion: Attitudes of nursing students and improving the level of knowledge regarding end of life care should be a priority to nurse educators, and nursing schools need to integrate palliative and end-of-life care into nursing curricula across all levels.

Introduction

The principles of holistic care are the core element of nursing care. This has been reflected in many nursing practices and education aspects that emphasize the bio-psychosocial model. Palliative care and end-of-life care (EoLC) are, eventually, based on the philosophy of holistic person care that demonstrates a combination of disease with a focus on pain prevention and symptoms control that includes providing care pre and post-death care (1). Thus, palliative nursing is largely based on the ability of nurses to use their accumulated experiences and knowledge to ensure the quality of nursing care and improve healthcare outcomes. The notion that nurses should not prevent death as much as they should work to improve the quality of life of dying people and their families is a cornerstone in EoLC.

The literature showed that improved nursing care resulted in better healthcare outcomes for patients receiving palliative care

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(2). Nevertheless, palliative nursing is not being covered and addressed adequately in nursing curricula (3). EoLC is not a well-covered topic in nursing curricula which might influence their training outcomes and later their ability to provide quality of EoLC after graduation. Palliative and EoLC are considered in the advanced levels of nursing practicum at the master level, which may interfere with nursing students' ability to understand the needs of dying people and their families and later on quality of care after graduation or during training courses.

This would question the role of nursing education in preparing students at the undergraduate level to provide care to dying people. Generally, novice nurses will have to care of dying people in their initial professional life in nursing. Thus, nursing students need to be equipped with knowledge and skills that prepare them to be competently and safely practicing nursing care with dying patients as part of their palliative nursing care and later as registered nurses (1).

The literature showed evidence that nursing students are suffering anxiety and sadness when exposed to death incidence at practicums and training courses (4). On the other hand, studies reported that nursing students are not qualified to cope with death incidents, care for dying patients, and support grieving caregivers (5). This has supported previous studies where nursing students expressed their inadequate academic preparation, training, and knowledge regarding management and caring of dying and their families (6). Here, a significant indication is related to the influence of inadequate knowledge and training on caring of dying patients and their families on students' psychological well-being and their attitudes towards death and caring of dying people, which may influence their quality of nursing care. Worth saying that the EoLC in nursing education is addressed minimally, resulting in a lack of competency and poor nursing management skills of dying patients (7). A recent study has found that the consequences of less attention to EoLC in nursing curricula have resulted in negative attitudes toward caring for dying people among nursing students (8). Assuming that the vital role of nursing education is to address all needed nursing competencies and skills to ensure quality and safe nursing practice, the need to incorporate EoLC and caring of dying patients and their families into nursing curricula is becoming a core competency (9). Therefore, assessing nursing students' knowledge and attitudes toward caring for dying patients would enlighten nurse educators on areas of improvement in nursing curricula. While nursing students are not formally educated and informed about EoLC, they still have accumulated knowledge and learned skills throughout their clinical training. This would contribute to improving students' knowledge and attitudes; however, there is no way to ensure that students have received information that is reliable and accurate.

In Jordan, similar to other Arab and Muslim countries in the region and world, have special traditions and belief regarding death and dying (10). Nursing students who are required to integrate culture into their nursing training and practice later on are mandated to adhere to the Arabian culture of death and dying. Pre-post-death traditions and beliefs are not necessarily scientific and valid in terms of standards of nursing care; therefore, nursing students might be struggling to compromise between what they should and what the culture and traditions are proposing (11). To the authors' knowledge, and especially among the Arab culture, this topic has never been addressed regarding

nursing students' attitudes and knowledge regarding caring for dying patients. In short, the lack of curricular emphasis and influence of culture on nursing practice related to end-of-life care necessitate this study. This study examines the relationship between knowledge of end-of-life care and attitudes toward dying people among nursing students.

The specific aims of this study are to examine the status of knowledge and attitudes of nursing students toward end-of-life care. And test the relationship between knowledge and socio-demographic characteristics of students with their attitudes of nursing students toward end-of-life care.

Methods

This is a cross-sectional, descriptive-correlational study. Nursing students have collected data using self-administered questions regarding knowledge and attitudes towards caring for dying patients.

Data were collected from 11 nursing programs out of the 14 nursing programs provided in Jordan, public and private. Nursing students have been selected conveniently from the universities. Inclusion criteria included: completed the 2nd year to ensure that nursing students have completed at least one practicum course at the hospital. Students who have suffered the death of a family member or significant other and during the grieving phase has been excluded from the study due to overlap between their personal experiences and the aims of the three study. The sample size was estimated using the G* Power software based on a medium effect size of 0.25, an alpha level of 0.05, and a power level of 0.80. The required sample was at least 615 students. An additional 15 percent was added to account for potential missing data, yielding a final sample size of N= 708 nursing students in Jordanian universities.

Data collection started after ensuing ethical approval from the IRB of the University of Jordan University and approval from the targeted universities. Data has been collected during the COVID-19 pandemic from Sept to Dec 2020. The schools' clinical training facilitators have been an approach to act as liaisons and inform students about the study and its significance. In addition, announcements have been used to inform students through students' contact and communication platforms. This has been through the contact list of students who were the liaison person (school facilitator and contact persons) who have access to an email list of students at each school of nursing.

The role of the facilitators is to send the invitation letter through emails. In that invitation, a link is generated to transfer the students to the survey if they wish and are interested in participating. The online survey was used to collect the data. Those who expressed interest in participation have been advised to contact the research team for further information via the email address in the invitation letter. The students were also advised on how to turn the survey package online through ensuring pressing the save and send buttons. The first page was consenting to participate in the study, and once approved, the students were directed to the questionnaire page. The front page included information related to the purpose, significance, statements that ensure voluntary participation, anonymity, and confidentiality. An average of 15-minutes is needed to have the whole survey completed. Electronic data have been kept at PI's password-secured computer.

To achieve the purpose of the study, the following tools have been used:

1. The palliative care quiz for nursing (PCQN) has been used to assess the knowledge regarding palliative care (12). The PCQN is composed of 20 items

assessing knowledge regarding palliative care. The instrument focuses on the basic type of information necessary for entry to practice. Respondents are asked to make their answer on a 'false' (0) or 'don't know' (1) 'true' (2). The no and do not know answers collapsed later to (0), while the "yes" answers were recoded to 1. The interquartile range has been used to decide the cutoff point for the scale. The PCQN is considered suitable for undergraduate nursing students because it is easily administered and can be quickly completed by the participants. The validity and reliability of the PCQN instrument were shown to be good with Cronbach's alpha of .78 (12). In this study, Cronbach's alpha was also good with Cronbach's alpha of .76.

2. Frommelt Attitudes Toward Care of the Dying Scale Form B (FATCOD-B) has been used to assess attitude towards palliative care. FATCOD-B was developed by Frommelt (13) to detect nursing and medical students' attitudes towards palliative care and caring for dying patients. The FATCOD-B Instrument consists of 30 Likert-type items with five answer options ranging from 'strongly disagree' (1) to 'strongly agree' (5). The overall FATCOD-B attitude score ranges between 30 to 150, where the higher the score indicating the more positive attitudes. The FATCOD-B is divided into six subscales; Fear/Malaise Subscale, Communication Subscale, Relationship Subscale, Active Care Subscale, Care of The Family Subscale, and Family as Caring Subscale. The FATCOD-B showed very good validity and reliability with Cronbach's Alpha of .81 (14). In this study, Cronbach's alpha was also good with Cronbach's alpha of .73.

In addition, an author-demographics section has also been provided to collect data regarding age, gender, academic year, palliative care training, etc.

Descriptive statistics using central tendency (mean and median) and dispersion measures (standard deviation, range) to describe the variable of the study. Item analysis was conducted using percentages and frequencies per scale. T-test, Pearson correlation was used to test differences and associations between the socio-demographic and knowledge with attitudes total score and subscales. Alpha was set at .05.

Results

The sample consisted of 708 nursing students. The mean age of the participants was 22.1 years (SD= 3.29). The majority of the nursing students were females (n= 590, 83.3 %), single (n= 672, 94.9 %), at their 4th year (n= 496, 70.1 %), and the majority of students were at public universities (n= 486, 68.6 %). In relation to palliative care training, the findings showed that most nursing students had been exposed to terminology of palliative care training throughout their respective nursing program (n= 515, 72.7 %), but the majority of them did not take any specific palliative care courses (n =565, 79.9 %) or have particular education about palliative care (n= 448, 63.3 %) (Table 1).

Status of nursing students' knowledge of palliative care

Concerning nursing students' knowledge regarding palliative care, and the analysis indicated that most of the nursing students have a satisfactory level of knowledge mean score (Table 2). Of students, 66.1% had correct answers to all questions ranging from 36% to 93%. The analysis did show that 50% of the students had at least 63% of correct answers, while only 25% of them had 50% correct answers, and 75% had 83% correct answers or above, indicating a satisfactory level.

Item analysis showed that the lowest level of knowledge had been indicated in item

12, "The philosophy of palliative care is compatible with that of aggressive treatment" (36%) and item 10 "During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for severe dyspnea: with (40.5%). While the highest level of knowledge indicated with high, correct answers of item 3, "The extent of the disease determines the methods of pain management" (92.7 %), and item 18, "Manifestations of chronic pain are different from those of acute pain" (90.3%).

Table 1. Sample characteristics (N= 708)

Variable		N (%)	Mean (SD)
Age			22.13 (3.29)
Gender	Female	590 (83.3 %)	
	Male	118 (16.7%)	
Academic years	3rd year	212 (29.9 %)	
	4th year	496 (70.1 %)	
University sector	Public University	486 (68.6 %)	
	Private University	222 (31.4 %)	
Exposed to palliative care concepts	No	193 (27.3 %)	
	Yes	515 (72.7 %)	
Took palliative care course	No	565 (79.9 %)	
	Yes	143 (20.2 %)	
Educated about palliative care	No	448 (63.3 %)	
	Yes	260 (36.7 %)	

Table 2. Nursing students' knowledge regarding palliative care (N= 708)

Question	True answers N (%)
1. Palliative care is only appropriate in situations where there is evidence of irreversible deterioration	396 (55.9 %)
2. The analgesic effect of other opioid is measured against that of morphine	338 (47.7 %)
3. The extent of the disease determines the methods of pain management	656 (92.7 %)
4. Adjuvant therapies are important in managing pain	629 (88.8 %)
5. It is crucial for family members to remain at the bedside until death occurs	438 (61.9 %)
6. During the last days of life, drowsiness associated with electrolyte imbalance may decrease the need for sedation	420 (59.3 %)
7. Drug addiction is a major problem when morphine is used on a long-term basis.	592 (83.6 %)
8. Individuals who are taking opioid should also take regular medication to prevent constipation	552 (78 %)
9. Professional careers in palliative care must remain emotionally detached.	330 (46.6 %)
10. During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for severe dyspnea	287 (40.5%)
11. Men generally resolve their grief more quickly than women	397(56.1 %)
12. The philosophy of palliative care is compatible with that of aggressive treatment.	258 (36.4 %)
13. The use of placebos is appropriate in the treatment of some types of pain.	591 (83.5 %)
14. In high doses, codeine causes more nausea and vomiting than morphine.	318 (73.2 %)
15. Suffering and physical pain are synonymous	454 (64.1%)
16. Pethidine is not an effective analgesic for the control of chronic pain.	408 (57.6 %)
17. The cumulative effect of repeated losses inevitably leads to burnout for those who work in palliative care	468 (80.2 %)
18. Manifestations of chronic pain are different from those of acute pain.	639 (90.3 %)
19. The loss of a distant or difficult relationship is easier to resolve than the loss of one that is close or intimate	587 (82.9 %)
20. The pain threshold is lowered by fatigue or anxiety	303 (42.8 %)

Attitude towards palliative care and caring of dying patients

The overall attitude scores ranged from 85 to 129 with mean of 102.7 (SD= 11.2) out of the highest expected score of 150. The analysis also showed that 50% (interquartile range) of the students had scored from 94 to 133, indicating that, in general, the students had a moderate to a high level of attitudes towards death and care of dying patients. In other words, students demonstrated moderate to high levels of attitudes toward the death concept. The mean item score ranged from 2.17 (SD= 1.0) "Family members who stay close to a dying person often interfere with the professional's job with the patient" to 4.38 (SD= 1.1) "Families need emotional support to accept the behavior changes of the dying person."

The subscale analysis illustrated that the highest reported scales were Fear/Malaise Subscale (M= 29.0, SD= 4.3) followed by Communication Subscale (M= 21.4, SD= 2.5) and Relationship Subscale (M= 18.3, SD= 1.6). On the other hand, the lowest reported subscales were Family as Caring Subscale (M= 12.1, SD= 1.2) preceded by The Care of the Family Subscale (M= 12.9, SD= 1.3) and Active Care Subscale (M= 15.1, SD= 1.7). In relation to the individual item analysis, the results showed that the highest reported items were item # CTF 16, "Families need emotional support to accept the behavior changes of the dying person" (M= 4.38, SD= 1.12), followed by item # FC 18 "Families should be concerned about helping their dying member make the best of his/her remaining life" (M= 4.23, SD= 0.81) and item # RS 21 "It is beneficial for the dying person to verbalize his/her feelings" (M= 4.17, SD= 0.96). The lowest reported items were item # RS 29, "Family members who stay close to a dying person often interfere with the professional's job with the patient" (M= 2.17, SD= 1.03) preceded by item # FC 26 "I would be uncomfortable if I entered the room of a terminally ill person and found him/her crying" (M= 2.31, SD= 1.00) and item # FM 8 "I would be upset when the dying person I was caring forgave up hope of getting better" (M= 2.31, SD= 1.00) (Table 3).

Table 3. Nursing Students' attitude scores towards palliative care and caring of dying patients (N= 708)

Item	Subscale/Item	Subscale ranking	Item ranking	Mean	SD
	The total attitude scale scores			**10.27**	**11.2**
	Fears /Malaise Subscale	**1**		**29.03**	**4.28**
FM 1	Giving care to the dying person is a worthwhile experience.		10	3.88	1.05
FM 5	I would not want to care for a dying person.		13	3.71	1.08
FM 13	I would hope the person I'm caring for dies when I am not present		19	3.19	1.46
FM 7	The length of time required to care for a dying person would frustrate me.		21	2.84	1.23
FM15	I would feel like running away when the person died		22	2.82	1.27
FM 14	I am afraid to become friends with a dying person.		24	2.79	1.31
FM26	I would be uncomfortable if I entered the room of a terminally ill person and found him/her crying.		25	2.61	1.31
FM 3	I would be uncomfortable talking about impending death with the dying person		26	2.44	1.04
FM 8	I would be upset when the dying person I cared for forgave up hope of getting better.		27	2.31	1.00
	Communication subscale	**2**		**21.39**	**2.51**
CS 27	Dying persons should be given honest answers about their condition.		12	3.81	1.09
CS 28	Educating families about death and dying is not a nonfamily caregiver responsibility.		15	3.64	1.19

CS 11	When a patient asks, "Am I dying?" I think it is best to change the subject to something cheerful		16	3.55	1.31
CS 30	Nonfamily caregivers can help patients prepare for death.		17	3.50	1.13
CS 2	Death is not the worst thing that can happen to a person.		18	3.24	1.27
CS 6	The nonfamily caregivers should not be the one to talk about death with the dying person.		20	2.96	1.14
	Relationship subscale	**3**		**18.31**	**1.55**
RS 21	It is beneficial for the dying person to verbalize his/her feelings.		3	4.17	0.96
RS 17	As a patient nears death, the nonfamily caregiver should withdraw from his/her involvement with the patient.		11	3.88	1.03
RS 10	There are times when the dying person welcomes death.		14	3.69	0.94
RS 9	It is difficult to form a close relationship with the dying person		23	2.82	1.15
RS 29	Family members who stay close to a dying person often interfere with the professional's job with the patient.		29	2.17	1.03
	Active care subscale	**4**		**15.06**	**1.71**
AC 19	The dying person should not be allowed to make decisions about his/her physical care.		4	4.10	0.94
AC 24	The dying person and his/her family should be the in-charge decision-makers		5	4.07	0.93
AC 25	Addiction to pain-relieving medication should not be a concern when dealing with a dying person		7	4.04	0.87
AC 23	Caregivers should permit dying persons to have flexible visiting schedules.		8	4.03	0.91
	The care of the family subscale	**5**		**12.87**	**1.34**
CTF 16	Families need emotional support to accept the behavior changes of the dying person.		1	4.38	1.12
CTF 4	Caring for the patient's family should continue throughout the period of grief and bereavement.		6	4.05	0.91
CTF 22	Care should extend to the family of the dying person.		9	3.98	0.87
	Family as caring subscale	**6**		**12.09**	**1.22**
FC 18	Families should be concerned about helping their dying member make the best of his/her remaining life.		2	4.23	0.81
FC 12	The family should be involved in the physical care of the dying person.		10	3.94	1.22
FC 26	I would be uncomfortable if I entered the room of a terminally ill person and found him/her crying.		28	2.31	1.00

Relationship between attitudes and knowledge

Pearson correlation was used to test the correlation between attitudes total and subscales with knowledge total. The analysis showed that only communication and family as caregiver subscales had significant positive correlations with knowledge ($r = .08$, $r = .20$, $p < .05$; respectively). The results indicate that students with a higher level of knowledge are more likely to exhibit positive attitudes toward death and caring for dying patients than those who are not. However, the correlation magnitudes is low. This infers that knowledge has little influence on students' attitudes. On the other hand, the other subscales and the total attitude score

were not significantly correlated with the total knowledge score (p> .05).

Differences in attitudes toward caring for dying patients in relation to demographic characteristics

An independent–sample t-test was conducted to test the differences in attitudes toward dying patients in relation to demographic factors. The analysis revealed that there was a significant difference (*t*=3.140, *p*=0.002) in overall attitude score in which those students in the 3rd year have meant (M=104.7, SD= 12.6), which is larger than the mean for those students in the 4th year (M=101.8, SD= 10.5) (Table 4).

The results also illustrated that there was a significant difference (*t*= -3.49, *p*< 0.001) in overall attitude score between students who have been exposed to palliative care (M=103.6, SD= 9.2) compared to those who are not (M=100.3, SD= 11.8). Similarly, the statistics results illustrated that there was a significant difference (*t*= 5.45, *p*< 0.001). In overall attitude score, students who did not take palliative care course have meant (M=103.8, SD= 11.1), which is larger than the mean for those students who took palliative care course (M=98.2, SD= 10.5). Furthermore, the results illustrated that there was a significant difference (*t*= -16.119, *p*< 0.001). In overall attitude score, those students who have education about palliative care have meant (M=110.3, SD= 11.2), which is larger than the mean for those students who do not have education about palliative care (M=98.2, SD= 8.6).

Table 4. Differences in attitudes toward caring for dying patients in relation to demographic characteristics (N=708)

Dependent variable	Independent variable	N	M	SD	t*	P-value**
Total attitude	**Gender**				-1.39	0.164
	Male	118	101.34	16.24		
	Female	590	102.92	9.94		
	Academic year				3.140	0.002
	3rd year	212	104.67	12.16		
	4th year	496	101.79	10.49		
	University sector				0.145	0.884
	Governmental	486	102.70	11.83		
	Private	222	102.56	9.83		
	Exposure to palliative care				-3.49	0.001
	No	193	100.26	9.21		
	Yes	515	103.55	11.79		
	Palliative care course				5.45	0.001
	No	565	103.79	11.14		
	Yes	143	98.17	10.48		
	Education about palliative care				-16.119	0.001
	No	448	98.22	8.56		
	Yes	260	110.30	11.20		

* Equal variance assumed ** Significant at α = 0.05 (2-tailed)

Discussion

Nursing education today needs to be commensurate and respond to nurses needs in the practice area; therefore, struggling to fill the gap between nursing education and practice. This study came to address one of the issues that have been addressed as a priority need to nurse educators. We found that nursing students have a good level of knowledge regarding EoLC and also have positive attitudes toward palliative care components, including care of dying patients. Nevertheless, the results inferred that

although students do have good knowledge and positive attitudes, their responses should be at higher levels to indicate safety level of practice, and there should be a link between their level of knowledge and the standardized nursing practice. In other words, the satisfactory level of knowledge and positive attitudes of nursing students in this study might have been influenced with those who have heard or personally learnt about palliative and EoLC rather than being formally and professional educated about palliative care. Nursing education need to be linked with nursing practice competencies rather than only providing basic level of knowledge which has been reflected here in this study. This would speculate the accurateness and validity of information acquired by nursing students throughout training courses and personal gains might jeopardize quality of care provided. Safety practice and training are also other issues that might be directly influence using invalid information and resources, as well. Thus, it is expected that nursing students might have fair level of knowledge and primarily positive attitudes regarding palliative and EoLC aspects due to that fact that learning about this topic might have been integrated indirectly with other courses or by personal observation.

The results are in line with previous reports that nursing students have, generally, positive attitudes and good level of knowledge regarding palliative and EoLC (15-16). However, and while addressing domain of the attitudes, we found that nursing students had negative or unfavorable attitudes toward specific aspects of palliative care. Particularly, students had low scores on both "Family as Caring" and "Care of the Family" domains indicating that their knowledge and attitudes are emphasized in particular aspects rather than being comprehensive and encompassing all practice areas of palliative care. This support our aforementioned statement that nursing students have not drawn their perception from a professional and formal education and training, and rather, relied on their personal experiences throughout their studentship life.

Such speculation supported with differences that we have found in terms of differences in attitudes between 3rd and 4th year students. According to Virdun and colleagues (17), families have a crucial role in providing care for their patients especially those who suffering end-of-life conditions. In our study students have shown different perspective toward minimizing the family role which disagree with Virdun and colleagues' perspective. Interestingly, in Arabian culture, family members are highly connected and share responsibilities in managing healthcare needs for their members which also have not been addressed by the nursing students whom are Arabs. If a family member is going through life-threatening or life-ending conditions, other members often attend to the hospital and spend the final days with their dying patient **(**18). This is also well recognized in Arabian culture. Therefore, the results recommend that nursing educators should prepare their students to provide care for families and applying the principles of family-centered approaches in such scenarios rather than exclusively training students in patient centered approach.

Another important issue that we have found is related to the association between two domains only of attitudes with knowledge; the "communication" and "the family as caregiver domain." Further, we found that nursing students who have been exposed to the concepts of palliative care and those with some level of training regarding palliative care scored significantly higher than their counterparts in terms of knowledge and attitudes.

On the other hand, nursing students in their 4th year and those who took a course in palliative care have significantly less favorable attitudes than those students who did not take any course in palliative care. This would also question the quality of nursing education and how 4th year nursing students have been prepared to manage palliative care once graduated. These results are consistent with recent studies that addressed attitudes of nursing students toward EoLC (19-20). However, domains related to family care and family as a caregiver were the least positive ones. Other studies (19-20) found the least positive attitudes found in relation to student comfort with the care of a dying person and his/her imminent death. One possible explanation for such controversial reports could be related to reality shock that nursing students are confronted with and that are actually beyond their level of preparation that might contribute to students' negative attitudes. Berndtsson and colleagues (19) have also addressed the effect of the complexity of palliative care and its negative impact on nursing students' attitudes. This might also indicate the difference between nurses and nursing students in which years of experience and being exposed to patients with chronic and life devastating health problems might create more positive attitudes among nurses (21).

Furthermore, a previous report showed that nursing students are suffering a high level of anxiety, moral distress, and lack of competency skills to manage critical and stressful situations in clinical settings (22-23). The literature asserted that practicing nurses do lack knowledge and skills to manage stressful situations and are at risk of secondary traumatic effects due to stressful situations such as death incidents (24-26) which may contribute to acquiring more positive attitudes toward death and dying.

One limitation of this study is the lack of follow-up to assess and evaluate the impact of lack of knowledge and negative attitudes on the quality of care provided to dying patients and end-of-life care by nursing students.

Conclusion

Palliative care is one of the most important aspects of contemporary healthcare services and nursing. This study found that nursing students have a satisfactory level of knowledge and positive attitudes toward palliative care aspects and components. However, nursing students were not positive in all aspects of palliative care, and their level of knowledge was not up to the required standardized level. This may give implications to nurse educators who need to re-visit the current nursing curricula and ensure the adequacy of knowledge and training regarding palliative and EoLC. Nursing students need to be introduced to concepts and components of palliative care at earlier stages of nursing education and training. Communication, the role of the family in caring for their patient, and caring for family members are among the most important topics that nursing students need to be trained on and acquire the appropriate and most reliable information about. Furthermore, integrating concepts of palliative care into nursing courses requires attention to cultural and theoretical principles to ensure that nursing students have the competency and essential level of knowledge that could enable them to practice palliative and EoLC safely and ensure quality nursing care after graduation outcomes.

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Conflict of interest

The authors declare no conflict of interest related to the publication of this manuscript.

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