

# Effectiveness of a palliative care course on attitude of nursing students towards care of dying patients: an Indian perspective

## Abstract

**Background & aim:** The attitude of nursing students towards the care of dying patients is a crucial aspect of their education and professional development. This attitude can significantly impact the quality of care provided to patients at the end of life. Inclusion of palliative care and end-of-life care in the nursing curriculum positively influences students' attitudes. The aim of this study was to examine nursing students' attitudes towards care of dying patients before and after a course in palliative care.

**Methods:** This study was an evaluative, quantitative, cross-sectional study in which participants (n=102) were selected via random sampling. The Frommelt Attitude Toward Care of Dying Scale (FATCOD) was used to assess nursing students' attitudes during their education. Nursing students enrolled in a mandatory palliative course in the nursing programme at Rajiv Gandhi University of Health Sciences (RGUHS) were the samples. Ethics approval was obtained from Institution Review Board. Data from FATCOD was analyzed using descriptive and analytical statistics.

**Results:** The participants' age ranged from 16 to 31 years, with an average age of  $19.84 \pm 2.540$  years. Moreover, most respondents (92.2%) identified as female. Approximately half (52.9%) reported no prior exposure to information on end-of-life care, and the majority (81.4%) had not attended any seminars, workshops, or conferences on the topic. The results indicated that participants' attitude notably enhanced following the palliative care course ( $M = 107.89$ ,  $SD = 11.913$ ), compared to their baseline ( $M = 100.80$ ,  $SD = 10.435$ ),  $t(101) = 4.903$ ,  $p < 0.001$ . There is no significant difference in attitude between females ( $M = 108.96$ ,  $SD = 12.157$ ) and males ( $M = 101.25$ ,  $SD = 6.228$ ),  $t(100) = -1.768$ ,  $P = .080$ . Similarly, individuals with prior awareness ( $M = 110.38$ ,  $SD = 13.417$ ) did not demonstrate a significantly higher attitude than those without ( $M = 106.56$ ,  $SD = 10.229$ ),  $t(100) = 1.622$ ,  $P = .108$ . Similarly, prior exposure to palliative care neither increased ( $M = 108.00$ ,  $SD = 12.649$ ) nor decreased ( $M = 108.43$ ,  $SD = 11.879$ ) respondents' attitudes significantly,  $t(100) = -.142$ ,  $p = .887$ . Age of the respondents and the attitude were not significantly correlated,  $r(105) = .041$ ,  $p = .686$ .

**Conclusions:** This study aimed to test the effectiveness of a Palliative Care course in enhancing the attitudes of nursing students towards care of dying patients. The finding of this study will help serve as baseline data for policy makers and programmers to develop comprehensive course on attitude towards dying patients among the University nursing students.

**Keywords:** palliative care, attitude, death, dying, nursing students

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## Introduction

With the growing aging population, the increasing number of elderly individuals, and the rising cancer survival rate, palliative care is becoming a global public health issue. Undergraduate nursing students, as a crucial element for the sustainable development of the nursing field, must have adequate knowledge and positive attitudes towards palliative care. Their preparedness in this area will directly impact the quality of care provided to dying patients in the future. Globally, nursing education, including palliative care, varies significantly in both length and content. Many nursing students are not adequately prepared to encounter death and care for end-of-life patients as newly qualified nurses. Almost all nurses will eventually care for patients at the end of life, and for many nursing students, it will be their first experience with death. Therefore, it is crucial to provide education on the complexities of end-of-life care. Research indicates that there have been few studies on palliative care in developing countries. This study aims to examine nursing students'

attitudes toward caring for dying patients before and after a course in palliative care.

To evaluate the impact of EOL educational interventions on nurses and nursing students' attitudes towards death and the care of dying patients. Five electronic databases (PubMed, Embase, CINAHL, PsycINFO, and ProQuest Dissertations & Theses Global) were searched for English language studies up to November 2020. The results revealed EOL educational interventions significantly improved attitudes toward death and the care of dying patients at post-intervention.<sup>1</sup> A study investigated the impact of training on first-year nursing students' attitudes toward death and caring for dying patients. An experimental model was used with 81 first-year nursing students. Data were collected using the Death Attitude Profile-Revised and the Frommelt Attitude toward Care of the Dying Scale. The differences between pre- and post-training attitudes were statistically significant, indicating that the training effectively improved students' attitudes toward both death and caring for dying patients.<sup>2</sup>

The pretest–post-test quasi-experimental study examined the impact of an educational intervention on nursing students' compassion levels and their attitudes toward death and caring for dying patients. Data were gathered using the Death Attitude Profile-Revised (DAP-R), the Frommelt Attitude Toward Care of the Dying (FATCOD) Scale, and the Compassion Scale (CS). DAP-R Scores improved after the intervention. FATCOD Post-test scores were higher than pretest scores, but the difference was statistically insignificant. Participants had high CS scores initially, with a slight increase post-intervention.<sup>3</sup> The study involved 55 nursing students who practiced in a pediatric oncology clinic as part of their Child Health and Diseases Nursing Course. Data were collected using the “Nursing Student Information Form,” “Turkish Death Anxiety Scale (TDAS),” and the “Assessment Scale of Attitudes toward Principles About Dying with Dignity (ASAPDD).” Mean age: 21.69±2.10 years. 29.1% had witnessed the death of a child patient. 16.4% had witnessed the death of a child with cancer. Mean TDAS score: 39.20±15.61. Mean ASAPDD score: 49.01 ± 9.05. Nursing students had moderate levels of death anxiety and a high attitude toward principles of dying with dignity. Death anxiety did not influence attitudes toward dying with dignity. The study concluded that support from lecturers was crucial in helping students manage death anxiety and embrace principles of dying with dignity.<sup>4</sup>

A descriptive correlational study surveyed 187 undergraduate nursing students at the end of their third year of education from a university in China. The study used the Chinese versions of the Palliative Care Quiz for Nursing, the Death Attitude Profile-Revised, the Frommelt Attitude toward Care of the Dying Scale, and the Palliative Care Self-Efficacy Scale to measure the students' knowledge, attitudes, and self-efficacy related to palliative care. Most nursing students had favorable attitudes towards death and caring for the dying. Students exhibited a low level of knowledge and self-efficacy regarding palliative care. The findings suggest a need to integrate palliative care education into the nursing curriculum. Special attention should be given to teaching psychosocial and spiritual care. Preparing students to psychologically cope with the challenges associated with the process of a patient's dying is crucial.<sup>5</sup> A study aimed to explore the meaning of death for nursing students and their attitudes towards the principles of dignified death. Conducted with nursing students at a state university in Turkey, the study utilized the Personal Information Form, the Personal Meanings of Death Scale (PMDS), and the Assessment Scale of Attitudes toward the Principles of Dying with Dignity (ASAPDD) for data collection. A positive but low-level significant relationship was found between students' age and their scores on the PMDS subdimensions and ASAPDD. The results indicated that students generally had positive perceptions of death and embraced the principles of dignified death. Furthermore, an increase in students' perceptions of death was found to positively influence their adoption of dignified death principles.<sup>6</sup>

Nursing students often lack the proper training to handle the emotional and mental aspects of end-of-life care, despite their interest in saving and helping people. Many are not exposed to the potentially stressful situations related to caring for dying patients during their education. Previous research indicates that simulations are effective in reinforcing classroom topics for nursing students. The death and dying training simulation will increase nursing students' level of empathy. The death and dying training simulation will enhance nursing students' attitudes towards caregiving. Empathy and fear of death will significantly predict nursing students' attitudes towards caregiving.<sup>7</sup> Ensuring nursing students have adequate knowledge about palliative care and positive attitudes towards death and dying

is essential for effectively preparing them to care for patients with life-limiting illnesses. In Greece, the level of nursing students' knowledge and attitudes towards palliative and end-of-life care is not well-documented. A descriptive, cross-sectional survey was conducted using questionnaires. 529 second, third, and fourth-year nursing students from two university faculties participated (response rate = 87.6%). Mean scores on the Palliative Care Quiz for Nursing (PCQN) revealed low levels of knowledge. Students' knowledge about pain/symptom management and psychosocial/spiritual care was particularly insufficient. Mean scores on the Frommelt Attitudes towards Care of the Dying (FATCOD) indicated generally positive, liberal, and supportive attitudes towards end-of-life care. 60% of respondents were keen to care for a dying person and their family. Less positive attitudes were noted in relation to student comfort with the care of a dying person and imminent death.<sup>8</sup>

A study aimed to determine the relationship between nursing students' attitudes towards death and dying patients and their empathic tendencies. It employed a descriptive and correlational design and included 176 students. A positive significant relationship was found between the Frommelt Attitude toward Care of the Dying (FATCOD) scores and the Empathic Tendency Scale (ETS) scores. A 1-point increase in the ETS score led to a 0.502-point increase in the FATCOD score. The study suggests that empathic tendencies positively influence nursing students' attitudes towards caring for dying patients.<sup>9</sup> International literature highlights that nursing students often feel unprepared to handle end-of-life care, citing inadequacies in their curricula. Recent studies show conflicting findings regarding nursing students' attitudes towards caring for dying patients. This study aimed to explore Italian nursing students' attitudes towards end-of-life care. Multicenter cross-sectional study with 1193 nursing students from bachelor's degree courses in four universities in the Lazio Region was undertaken. Differences between mean scores were compared using t-tests or ANOVA. Associations between scores and participant characteristics were evaluated using generalized linear regression. Mean FATCOD-B-I score was 115.3 (SD = 9.1). Higher scores were significantly associated with training in palliative care ( $p < 0.0001$ ) and experience with terminally ill patients ( $p < 0.0001$ ). However, the challenges faced by students were students showed more negative attitudes when patients lost hope of recovery and when family members interfered with healthcare professionals' work. Uncertainties existed around knowledge of opioid drugs, decision-making, concepts of death and dying, mourning management, and relational aspects of patient care. It was concluded that Italian nursing students have more positive attitudes towards care of dying patients compared to students in most other countries. They view caring for terminal patients as a formative and useful experience but feel inadequately prepared in practice.<sup>10</sup>

A descriptive and cross-sectional survey involving 1200 Chinese undergraduate nursing students utilized stratified sampling. The study measured knowledge and attitudes towards palliative care using the revised Palliative Care Quiz for Nursing (PCQN) and a self-designed questionnaire. The mean PCQN score was 16.10 ± 5.04, indicating limited knowledge among participants. A minority (19.8%) expressed interest in pursuing palliative care as a career. Significant factors influencing knowledge and attitudes included school, grade, gender, birthplace, and religious beliefs ( $P < 0.01$ ). Logistic regression highlighted that experiences like discussing death or caring for dying family members significantly impacted attitudes ( $P < 0.05$ ). Overall, the study underscored the need for enhanced end-of-life care education among Chinese nursing students.<sup>11</sup>

In a descriptive study conducted at a Swedish university, 73 nursing students participated in a pre-post assessment of attitudes towards care of dying patients before and after a mandatory palliative care course. The Frommelt Attitude toward Care of Dying Scale (FATCOD) and qualitative open-ended questions were used for data collection. Results indicated a statistically significant positive shift in students attitudes post-course, particularly among those with initially lower scores. Qualitative analysis revealed that the course enhanced knowledge, deepened understanding, and increased confidence in providing end-of-life care. The study suggests that integrating palliative care courses into nursing education, with interactive learning methods like group reflection and simulation training, is crucial for improving students readiness to care for dying patients and their families.<sup>12</sup> A cross-sectional survey assessed the attitudes of 300 Jordanian student nurses towards caring for dying patients using Frommelt Attitude Toward Care of the Dying Form B (FATCOD-B). Most participants were female (72%) and in their second year of nursing studies (40.3%). The overall mean FATCOD-B score was 95.8 out of 150 (SD 8.7), indicating generally low attitudes towards caring for dying patients among the students.<sup>13</sup>

### Objectives of the study

To examine nursing students attitudes towards care of dying patients before and after a course in palliative care.

**Design:** An evaluative study with a pre and post design.

**Instrument:** The Frommelt Attitude toward Care of Dying Scale (FATCOD) was used to assess nursing students’ attitudes during their education. The FATCOD scale consists of 30 items rated on a 5-point Likert scale, assessing attitudes towards caring for dying patients. It includes 15 positively worded statements (items 1, 2, 4, 10, 12, 16, 18, 20, 21, 22, 23, 24, 25, 27, and 30) and 15 negatively worded statements (items 3, 5, 6, 7, 8, 9, 11, 13, 14, 15, 17, 19, 26, 28, and 29). Responses range from “strongly disagree” to “strongly agree,” with scores of 1 to 5 for positive items and reverse scoring for negative items. Total scores range from 30 to 150, where higher scores reflect more positive attitudes towards caring for dying patients. Additionally, sociodemographic data such as gender, age, education level, religious beliefs, and previous experience with terminally ill patients are collected. The tool demonstrates good reliability, indicated by a Cronbach’s alpha coefficient of 0.83. Data from FATCOD was analyzed using descriptive and analytical statistics.

**Settings & participants:** Nursing students enrolled in a mandatory palliative course in the nursing programme at Rajiv Gandhi University of Health University (RGUHS). This study was carried out for the selected period of April 1, 2024- June 30, 2024.

**Methods:** A total of 102 students had enrolled in the mandatory Palliative Care course. All participated in the pre and post-test. Ethics approval was obtained from the Institution Review Board and consent was obtained from all participants.

### Results

Table 1 provides an overview of the demographic characteristics of the participants. Their ages ranged from 16 to 31 years, with an average age of 19.84 ± 2.540 years. The data illustrates that the majority (88.2%) were between the ages of 16 and 20. Moreover, most respondents (92.2%) identified as female. Approximately half (52.9%) reported no prior exposure to information on end-of-life care, and the majority (81.4%) had not attended any seminars, workshops, or conferences on the topic (Table 1).

**Table 1** Sociodemographic characteristics of the respondents

Variables	Frequency (n=102)	Percentage (100%)	
Age (in years)	16-20	90	88.2
	21-25	7	6.9
	>25	5	4.9
Gender	Male	8	7.8
	Female	94	92.2
Have you heard/ read about End-of-Life Care?	Yes	48	47.1
	No	54	52.9
Have you participated in any seminar/ workshop or Conferences on End-of-Life care?	Yes	19	18.6
	No	83	81.4

### Normality test

Establishing the spread of attitudes before and after was crucial for selecting the right statistical approach. Consequently, a Shapiro-Wilk test was conducted, indicating no signs of non-normality in either the pre-test (W = 0.981, p-value = 0.144) or post-test (W = 0.992, p-value = 0.811). Given these results, a parametric test was chosen. Additionally, mean values along with standard deviations were utilized to describe the attitude (Table 2).

Table 3 indicates that participants’ attitude notably enhanced following the palliative care course (M = 107.89, SD = 11.913), compared to their baseline (M = 100.80, SD = 10.435), t (101) = 4.903, p < 0.001.

Table 4 illustrates that there is no significant difference in attitude between females (M = 108.96, SD = 12.157) and males (M = 101.25, SD = 6.228), t (100) = -1.768, P=.080. Similarly, individuals with prior awareness (M = 110.38, SD = 13.417) did not demonstrate a significantly higher attitude than those without (M = 106.56, SD = 10.229), t (100) = 1.622, P=.108. Similarly, prior exposure to palliative care neither increased (M = 108.00, SD = 12.649) nor decreased (M = 108.43, SD = 11.879) respondents’ attitudes significantly, t (100) = -.142, p=.887.

**Correlation:** Age of the respondents and the attitude were not significantly correlated, r (105) = .041, p = .686. (Figure1).

**Table 2** Attitude towards end-of-life care

Test	N	Minimum	Maximum	Mean	Std. Deviation
Before	102	77	129	100.8	10.435
After	102	82	130	108.35	11.963

**Table 3** Effectiveness of course in palliative care

	N	Mean	Std. Deviation	t	p
Before	102	100.8	10.435	4.903	<.001
After	107	108.35	11.963		

## Discussion

Caring for dying persons is an essential element of the nursing role, and therefore preparing nursing students to care for dying patients is an important function in their education. This study investigated the attitudes of undergraduate nursing students concerning death and caring for dying patients and predictors of caring for dying patients. The results of the current study indicated a positive attitude towards caring for dying patients. The ages of the nursing students in the current study ranged from 16 to 31 years, with an average age of  $19.84 \pm 2.481$  years; the majority (88.8%) were between the ages of 16 and 20 years. These findings are inconsistent with those of earlier investigations about demographics in interest among or involvement with the subject of End-of-Life Care education and research by Zahran et al.<sup>14</sup> where the age ranged from 18-50 years, and the mean age was 21.0 years (SD = 4.1), and 50% were between the ages of 20–22 years. The majority were above 40 years in a study.<sup>14,15</sup> Most respondents (88.8%) in the present study were identified as female students. A dissimilar finding was identified in a study by Zahran et al. 2021, 47.2% (N = 262) were male, while 52.8% (N = 293) were females.<sup>14</sup> Studies have shown that participants in end-of-life care research are often younger, female populations or students. This could be for several reasons, including the more significant relevance or exposure to this subject across these demographic groups or differences in healthcare utilization and experiences that influence views on end-of-life care. However, the diversity of participants in this study with respect to age, education and gender role provided an opportunity to explore experiences and attitudes to end-of-life care conversations and decision-making from a range of perspectives. Approximately half (45.8%) reported no prior exposure to information on end-of-life care, and the majority (81.3%) had not attended any seminars, workshops, or conferences on the topic.

**Table 4** Demographic variables vs attitude

Variable	N	Attitude Mean	Std.Deviation	t	p
Gender				-	
Male	8	101.3	6.228	1.768	0.08
Female	94	109	12.157		
Awareness					
Yes	48	110.4	13.417	1.622	0.108
No	54	106.6	10.299		
Training					
Yes	19	108	12.649	-0.142	0.887
No	83	108.4	11.879		



**Figure 1** Attitude towards end-of-life care.

Table 3 indicates that participants' attitudes notably enhanced following the palliative care course (M = 107.89, SD = 11.913), compared to their baseline (M = 100.80, SD = 10.435),  $t(101) = 4.903$ ,  $p < 0.001$ . The current study shows that the nursing students who have taken the palliative care course demonstrate a more positive attitude in the post-test. This indicates that the intervention in palliative care was effective in enhancing the attitude of the nursing students. A Meta-analysis found that end-of-life educational interventions were effective in improving attitude toward death and care of dying patients among nurses and nursing students at post-intervention. Subgroup analyses revealed that; both nurses and nursing students showed similar attitude improvements, online educational courses are feasible, and attitudes towards death may require a longer intervention of more than 2 months to have an improvement.<sup>1</sup> According to a pretest-post-test quasi-experimental study, an educational intervention improves nursing students' compassion and their attitude toward death as well as in the care of the dying.<sup>3</sup>

A descriptive, cross-sectional, questionnaire-based survey comprised of 529 undergraduate nursing students from the country's two University Faculties revealed Mean total FATCOD scores indicated positive, liberal and supportive attitudes towards end-of-life care, with 60% of respondents keen to undertake the care of a dying person and their family. It is mainly in relation to student comfort with the care of a dying person and his/her imminent death that they noted less positive attitudes.<sup>8</sup> The measures of student attitudes towards death were 146.43 (16.741) and 152.75 (15.132) for pre and post-training, and Student attitudes towards caring for dying patients were found to be 103.02 (7.655) during the period of pretraining and 111.02 (10.359) during the post training period.<sup>2</sup> This implies that educational initiatives may serve to heighten cultural awareness, sensitivity, and competence for healthcare providers in end-of-life care of diverse populations.

Partial correspondence of the results of this study with previously published reports is observed. Some studies showed that students of nursing disciplines have positive attitudes towards dying patients.<sup>1-3,6,14</sup> This result is consistent with findings of a meta-analysis of 26 studies that included 9749 nursing students conducted in European countries such as Italy, Spain, the United Kingdom, Switzerland, Sweden, and Greece (n=6), and Asian countries including China, Palestine, Saudi Arabia, Jordan, Turkey, Indonesia, and Mongolia (n=20). The meta-analysis revealed that an overwhelmingly positive attitude was identified among the nursing students towards the end-of-life care. This may be because these students understood death better following broad education on end-of-life and dying, possibly stimulating the liberal attitudes towards dying and care at end of life.<sup>16</sup>

Others reported that students of nursing disciplines have a negative to neutral attitude towards caring for dying patients.<sup>10,15</sup> Nursing students had different adverse feelings and developed both negative and positive coping strategies with such feelings; students received professional and personal growth during caring for dying patients.<sup>17</sup> The attitude of nursing students towards caring for the families of dying patients was positive in this study. This indicates that care for the family of a dying patient impacts the attitude of students concerning end-of-life care. Nursing students are aware that families of dying patients need support. A review of qualitative studies describing nursing students' experiences when caring for dying patients and their families through meta-analysis found that the nursing students advocated for more caring for patients' families.<sup>17</sup>

On the other hand, the nursing students had training in hospital settings and probably encountered problems of death and dying, which may have also influenced their attitudes. Table 4 illustrates that

female ( $M = 108.33$ ,  $SD = 12.154$ ) exhibit a more positive attitude compared to males ( $M = 100.42$ ,  $SD = 6.052$ ),  $t(105) = -2.335$ ,  $P = .020$ . Conversely, individuals with prior awareness ( $M = 110.10$ ,  $SD = 13.414$ ) did not demonstrate a significantly higher attitude than those without ( $M = 106.02$ ,  $SD = 10.228$ ),  $t(105) = 1.785$ ,  $P = .077$ . Similarly, prior exposure to palliative care neither increased ( $M = 107.45$ ,  $SD = 12.555$ ) nor decreased ( $M = 107.99$ ,  $SD = 11.834$ ) respondents' attitudes significantly,  $t(105) = -.181$ ,  $p = .856$ .

In the current study, students' attitudes toward caring for dying people did relate to students' gender. The analysis of the relationship between gender and the attitude of nursing students towards the care of dying showed that there was more of a positive attitude among females compared to males. Such consistency was found in earlier studies where female students had a positive attitude towards caring for the dying in general.<sup>5,18</sup> The finding was inconsistent with studies reporting neutral attitudes between females and attitudes concerning the care of dying people.<sup>14,17</sup> However, studies involving nursing students portrayed that females had a higher degree of fear of death as compared to males.<sup>5,12,18</sup> Also, studies also predicted gender as an important predictor for a more positive attitude towards dying patients.<sup>14</sup> Other studies showed no significant differences in nursing students' attitudes towards the care of dying patients based on the student's gender.<sup>19</sup> This can also be explained from a feminist perspective as women are more compassionate to the dying patient and try harder to help.

Also, a study showed that there was statistically significant association existed among age ( $P = .048$ ;  $P = .049$ ) and nursing experience,  $P = .000$ ;  $P = .000$  with nurses' attitudes toward death and caring for terminally ill patients, and the total score on the FATCOD and DAP-R respectively. A significant correlation also existed between nurses' attitudes toward death and caring for dying patients,  $P = .002$ , and it was found that with age, registered nurses with more experience exhibited better attitudes toward death and caring for dying patients.<sup>5</sup> This finding indicates that sociodemographic determinants such as gender might be significant in structuring the way persons think and feel about end-of-life care as well. A similar finding was reported by a few research studies. Where in Nursing, students had positive attitudes towards caring for dying patients that were influenced by university type, academic level and gender.<sup>14</sup> Qualitative research has detailed that personal values, family dynamics, religious or spiritual beliefs, and prior healthcare encounters are critical components to the construction of end-of-life care preferences of individuals. They suggest that, as healthcare systems work to deliver end-of-life care that is more just and patient-oriented, attention to such demographic, social, and cultural factors that influence how people feel about death is essential.

The other important reasons that would affect students' behaviour about caring for dying patients and their attitudes towards death rather than gender can be their age, religiosity, culture, education about palliative care and previous experiences in dealing with dying patients. The method of teaching and training calls for a cross-cutting understanding of the death and dying phenomenon altogether rather than coverage of the concepts through various courses, as it can be noted from the curricula of universities. Also, inadequate nursing training would impact the disposition towards care of dying individuals. Prior work has shown that even short educational interventions can improve the cultural awareness, sensitivity, and competence of health professionals providing end-of-life care to culturally diverse patient populations. Given that the population is ageing and the need for well-trained palliative and hospice care is soaring, institutions throughout

the healthcare industry will be particularly well-served by putting other measures in place to develop more culturally responsive end-of-life educational initiatives.

**Correlation:** The age of the respondents and the attitude were not significantly correlated,  $r(105) = .021$ ,  $p = .828$ . An inconsistent report was determined in a descriptive study that the students' age had a positive and low-level significant relationship with the scores for the subdimensions of the Personal Meanings of Death Scale (PMDS) and the Principles of Dying with Dignity (ASAPDD). Positive perceptions of death were found to have been held by the students, and the principles of dignified death were adopted. 6 Dissimilar findings were given by Mastroianni 2021 where the mean score of FATCOD-B-I was 115.3 ( $SD = 9.1$ ). Higher scores were significantly associated with training in palliative care,  $p < 0.0001$ , and experience with terminally ill patients;  $p < 0.0001$ . Students manifested more negative attitudes, as expressed by items 1 and 17 when they perceived patients losing hope of recovering, item 2 and patient's family members interfering with health professionals' work.<sup>10</sup> Also, negative attitudes were reported by Jordanian nursing students.<sup>13</sup> Another study by Jiang et al. 2019 showed that knowledge and school, grade, gender, birthplace, and religious beliefs have statistically significant impacts ( $P < 0.01$ ) on the attitude of nursing students toward end-of-life care.<sup>11</sup>

However, the studies highlight the need to address systemic barriers to end-of-life care access and utilization. Policy changes, community outreach, and strategic partnerships can help ensure that all individuals, regardless of their background, are empowered to make informed decisions about their care at the end of life.<sup>7,9</sup> Thus, the research findings emphasize the complexities inherent in end-of-life care education and training. Rather than relying on a one-size-fits-all approach, healthcare institutions must carefully consider the multitude of factors that shape individual perspectives and experiences. By doing so, they can develop more effective, culturally responsive interventions that foster open, empathetic communication and facilitate shared decision-making at the end of life. The present study provides valuable insights related to curriculum development and education based on the attitudes and knowledge regarding the death and dying of nursing students. According to the results, many students commencing their nursing training have a positive attitude towards the end-of-life care, and this impacts their ability to provide compassionate, holistic care to dying patients and their families. This also suggests a need for specific coursework, clinical portions of education, and additional Training so that students develop competence and feel more comfortable discussing sensitive end-of-life issues. Finally, the demographic diversity of participant populations in terms of age, gender, educational level and other factors suggests that teaching methods about death and dying also will clearly have to be student specific. Strategies that acknowledge, attend to and meet the specific interests, needs and learning styles of distinct student subgroups may work best to achieve the knowledge base, skills and sensitivity necessary to provide high-quality end-of-life care.

Notably, the studies reveal that even without formal training, a sizeable number of nursing students have a favourable attitude towards palliative and end-of-life care. This intrinsic motivation and compassion can serve as a strong foundation for educational initiatives, which should aim to build upon students' innate desire to provide comfort and support to dying patients and their families. By addressing the barriers to end-of-life discussions and equipping nursing students with the necessary knowledge and skills, educational institutions can play a crucial role in shaping a healthcare workforce that is better prepared to navigate the complexities of death and dying.

Thus, the addition of some educational courses at nursing faculties and the development of continuing educational programs at hospitals along with experiences with terminal patients enhance the positive attitudes toward caring for dying patients by nurses and make the journey from novice to expert nurse a worthwhile one. Also, the incorporation of elements of death, dying, and end-of-life care in all the theoretical and practical components of nursing will influence the quality of care provided at the last stage of a person's life. Concomitantly, we need to promote system-level actions to reduce systemic impediments to end-of-life care access and use. To make choices true for all people no matter their background - better public policy choices, community development, and stronger coalitions must come into play to equip every individual with the tools they need to guide their own care as life nears death. The research results reported in this paper give important information about the attitudes and perceptions of nursing students and health practitioners concerning end-of-life care. Some studies demonstrate the altruistic desire and motivation that is typically found in nursing students as good predictors for educational interventions. But simply making people aware of end-of-life care options may not be enough to move the needle of popular attitudes and beliefs, according to the researchers. Rather, a broader appreciation for end-of-life care's cultural, social, and psychological determinants is needed.

## Conclusion

Our findings suggest that structured courses on palliative care can be incorporated as a mandatory part of undergraduate nursing curricula. It is a matter of bringing special emphasis on areas like patient-health professional communication, misconceptions and biases towards death and dying, and comfort in caring for the dying so that student nurses are prepared to psychologically handle the sensitive and challenging process of death and dying. In summary, across the literature, the research note various complex concerns for both health care providers, their patient, in relation to engaging in end of life discussions. Improving palliative and hospice care's quality and cultural responsiveness requires a multilayered approach. Policy changes, outreach, and collaborative partnerships can result in an evidence-based approach and better understanding to underpin informed decision-making irrespective of socio-demographic background at the appropriate time to the end of life. At the same time, resources invested in focused educational programs that expand healthcare teams' capacity for self-reflection, cultural humility, and effective communication can create a health system environment that is reliably responsive to the needs and preferences of patients and families transitioning to end-of-life care. Healthcare systems committed to implementing these interconnected, evidence-informed strategies can better address gaps and disparities blocking access to high-quality, person-centered end-of-life care. Gaining an appreciation for the multi-layered social, cultural, and emotional determinants that impact how people privately see things allows people in health care to begin to work collaboratively with end-of-life conversations in more empathic ways.

Structured courses in palliative care should be a core part of undergraduate nursing education. Specific focus areas should include patient-health professional communication, addressing misconceptions and biases towards death and dying, and increasing comfort in caring for the dying. This preparation is crucial for helping student nurses deal psychologically with the sensitive and challenging process of death and dying.<sup>9</sup> It is recommended to provide training sessions with simulation applications to better prepare nursing students for end-of-life care experiences.<sup>10</sup> Deeper integration of palliative care education

with practical training is needed. Enhanced education would help students better empathize with patients and manage the emotional aspects of end-of-life care. This study underscores the importance of comprehensive palliative care education to improve nursing students' preparedness and attitudes towards end-of-life care. To address this, the study recommends two approaches: conducting further research to better understand students' attitudes and potentially using mixed research methods and integrating end-of-life care courses into nursing curricula to enhance both knowledge and attitudes towards caring for dying patients. Further study is needed to determine nursing students' knowledge regarding care of the dying and the impact of education on that knowledge. A qualitative approach may give insight into the understanding of these attitudes.

## Declarations

Ethics approval was obtained from the Institution Review Board and consent was obtained from all participants.

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## Availability of data and materials

Available upon request by the 1st author (Dr. Esther Daniel)

## Transparency declaration

The lead author (Dr. Esther Daniel) affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

## Conflicts of interest

The author declared that there are no conflicts of interest.

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