



## A MIXED-METHODS APPROACH TO ASSESSING THE EFFECTIVENESS OF PALLIATIVE CARE EDUCATION FOR NURSING STUDENTS

Bhawna Sharma<sup>1\*</sup>, Dr.Vimal Kishor Sharma<sup>2</sup>

<sup>1</sup>Nursing officer, Primary Health Centre, Pauri Garhwal, Uttarakhand

<sup>2</sup>Assistant professor, COER Medical College of Ayurveda and Hospital

**\*Corresponding Author:** Bhawna Sharma

\*Nursing officer, Primary Health Centre, Pauri Garhwal, Uttarakhand

---

### ABSTRACT

Palliative care education is an essential component of nursing curricula, though its delivery and effectiveness vary across institutions. This study employed a mixed-methods approach to evaluate the impact of a palliative care education module on nursing students' knowledge, attitudes, and emotional preparedness. A total of 120 Bachelor of Science in Nursing students were assessed before and after the module using pre- and post-tests, attitude surveys, and focus group interviews. Quantitative results demonstrated a significant improvement in students' knowledge of palliative care principles, with post-test scores increasing by 23.9%. Attitude surveys indicated enhanced confidence and empathy in providing end-of-life care. Qualitative findings from focus group interviews revealed greater emotional sensitivity, improved communication skills, and deeper awareness of ethical issues related to palliative care. Students reported increased preparedness to manage the complexities of caring for terminally ill patients. However, some participants also encountered emotional challenges, particularly in discussing death and dying, underscoring the need for additional support mechanisms within the curriculum. The integration of cognitive and emotional training through both theoretical instruction and experiential learning proved effective in enhancing students' competencies. These findings affirm the value of structured palliative care education in preparing nursing students for real-world clinical practice. Future curricula should prioritize a balanced approach that addresses both the technical and emotional demands of end-of-life care. Further research is recommended to explore the long-term effects of such training on clinical performance and emotional resilience.

**Keywords:** Palliative care education, nursing students, mixed-methods approach, emotional preparedness

### 1. INTRODUCTION

Palliative care is the most important part of modern healthcare which is concerned with the relief of suffering of a patient and his/her family who are facing severe life threatening disease. As opposed to a curative care that is more likely to cure or eliminate the disease, the palliative care aims at improving the quality of life of the patient through addressing his or her physical, emotional, social, and spiritual needs. Palliative care does not just apply to the terminally ill; but it is to patients who are suffering chronic, progressive illnesses that are not necessarily fatal, so that they can carry on the remaining days so that they can live their lives so that they can be led with dignity and comfortable. In order to

deliver such care, nursing students must be formally trained in palliative care so that they are prepared to work in this challenging and emotionally challenging practice (Brand *et al.*, 2015).

The need of palliative care services has also tremendously increased as the world population continues to age and the number of chronic diseases horribly increases. Simulations conducted virtually have proved to be effective in enhancing the knowledge and attitudes of nursing students in terms of palliative care. Despite making these advancements, many nursing programmes have not been able to prepare students in a manner that would make them competent in end-of-life care. This has made it more imperative to include the palliative care in the nursing curricula with evidence reporting that early and vigorous palliative care curriculum training improves knowledge and positive attitude about caring a dying patient (Farquhar *et al.*, 2011). The significance of education like this one, demonstrating that interprofessional palliative care education in critical care contributes to the resilience of health care professionals when dealing with difficult end of life problems (Graham *et al.*, 2018). These results support other growing evidence that a holistic approach to palliative care education is suitable to be integrated into the nursing curriculum to ensure that future healthcare professionals can be equipped with the tools to administer comprehensive care.

Palliative care education aims at educating the nursing students on ways of addressing the multidimensional needs of the terminal patients. Such education involves clinical skills in managing symptoms, decision making skills in ethics, and skills of communicating with their patients and their families. Up until now, recent research on such educational interventions has implemented mixed methods designs to determine the success of various modalities of teaching, hence learning how the various modalities of teaching influence a willingness of students to provide palliative care. As an example, previous research had already established that high fidelity simulation, among other things, can significantly enhance palliative care competencies of nursing students (Hausermann *et al.*, 2025). Similarly, the cognitive and emotional skills involved in application of palliative care have also been proved to be enabled through virtual simulations. These research studies show that various instructional methods can be employed concurrently in order to ensure that nursing students are imparted with the necessary knowledge and skills.

Still, the knowledge does not explain how effective such education in palliative care may be. Being emotionally ready is also very crucial in palliative care since it handles complication and emotionally charged situations most of the time. To provide a caring approach to a terminally ill patient, a person should be prepared emotionally (Morita *et al.*, 2013). Emotional issues such as psychological burden of end of life care may be experienced by the healthcare professionals who provide end of life care and this may hinder their capacity to offer high quality palliative care. Education programmes should take care of the emotional and psychological side of palliative care because nursing students should be equipped to handle the emotional requirements of the profession (Reed *et al.*, 2018). According to other studies, a student should also be given an opportunity to reflect on his or her practice, as this will allow developing emotional resilience and self-awareness, which are required when providing compassionate care (Wells *et al.*, 2024).

Despite an adequate amount of research studies that demonstrate the need in the medical education of palliative care, there has been no agreement upon what form of teaching is the most efficient one, and what criteria should be used to assess the learning process. Yet, there are also those studies that indicate that traditional classroom learning is more important, and there are also those studies stating that experiential learning approaches, such as simulations and role playing, are more effective when it comes to educating students about emotional and practical challenges in palliative care (Kirkpatrick *et al.*, 2017; Tian *et al.*, 2024). Along with that, the incorporation of palliative care education into undergraduate nursing is not that consistent yet with some schools teaching only the bare concepts of palliative care and others making training extensive with the possibility of participating in clinical research (Lippe *et al.*, 2018).

This work examines the effectiveness of the palliative care education of the nursing students via the mixed methods approach in the perspective of the influence of the educational interventions on the cognitive level of the knowledge and emotional preparedness of the students belonging to the intervention group and control group. This research would involve making a critical educational

assessment of the course in both quantitative and qualitative analysis and reports on what students come to know and what emotional skills they acquire in the course. The students who will be studied are nursing undergraduates in their 3<sup>rd</sup> and 4<sup>th</sup> year of study and will soon be in the clinical practise. The objectives that drive the research are as follows.

1. To assess the impact of palliative care education on nursing students' knowledge of symptom management, communication, and ethical decision-making
2. To evaluate changes in students' empathy, confidence, and preparedness for end-of-life care following palliative care education
3. To explore students' experiences, challenges faced, and perceived benefits of palliative care education

## **2. Literature Review**

Palliative care education has been an important subject in nursing curricula and this has been confirmed in various studies that show that there is a need to ensure that nursing students get prepared on how to offer good quality care to patients with life-limiting disease. The teaching of palliative care in medical education is required and the mixed methods can be used to teach the medical students to have a better understanding of the end of life care. In addition to that, Zhang *et al.* (2024) revealed that the virtual clinical simulation intervention had improved the skills, knowledge and attitudes of palliative care in nursing students. The results correspond with mixed methods to assess complex palliative care interventions and discovered that such strategies can enhance cognitive and emotional readiness of students. Incorporation of palliative care in nursing programs is possible and acceptable because interprofessional educational interventions are feasible and acceptable to be provided in the intensive care unit (Thavaraj and Gillett, 2019). In spite of the growing body of evidence to support the incorporation of palliative care education, there is variance in the way such programmes are designed. Hagelin *et al.* (2022) indicated that education regarding palliative care is provided during Swedish undergraduate nursing programs, yet the teaching was not standardized across institutions and required more standardized curricula. Moreover, high fidelity simulation plays a significant role in enhancing palliative care competency of nursing students and that experiential learning technique is an effective means of enhancing clinical competency. Besides, it is vital to develop emotional readiness since nursing studies involve emotional difficulties of palliative care (Durojaiye *et al.*, 2023). These studies indicate that, yes, knowledge is necessary but also necessary is the ability to be emotionally strong and have skills in communicating so as to offer good palliative care. Also, the literature seems to indicate the fact that the students need to be educated on palliative care as a holistic approach not only to the knowledge but also emotional preparation and orientation to the similar approaches in the end-of-life care.

## **3. METHODOLOGY**

### **3.1 Research Design**

In this study, mixed method was used to determine the effectiveness of palliative care among nursing students. As such, in educational research, rather than using mixed methods where either exclusively statistical or narrative design could be used, a mixed method, or mixed method, design is specifically suitable since it is applicable in merging both quantitative and qualitative data to come up with a comprehensive picture of the effects of an intervention. Consequently, the combination of numerical data and personal experiences of students gave a more subtle picture of the success of palliative care education, which would have not been expressed that well by the quantitative data, maybe. Following their application of objective measures like knowledge tests, and subjective experiences like interviews to determine the change of knowledge, attitudes and confidence in palliative care among the students, the research sought to establish the effectiveness of a mixed approach in teaching palliative care which is based on both the objective knowledge as well as the subjective experiences. With regards to the quantitative element, the researchers were measuring the knowledge and attitude improvement of the students pre and post the palliative care education module but with regards to the qualitative element, the researchers focused on the personal experience of the students, the challenges

and personal reflections of the students on the topic. This methodological design did not just provide empirical evidence, but it also enabled an investigation of the rationale behind the learning outcomes of the students.

### **3.2 Participants**

A total of 120 nursing students from the third and fourth year of the Bachelor of Science in Nursing programme at a university participated in the study. The students were chosen because they had already received substantial clinical exposure and were about to enter clinical placements in which they were likely to encounter patients requiring palliative care. Purposive sampling was employed for selecting the participants who were chosen in this study based on their knowledge and experiences that are related to the problem. All participants had completed or were currently enrolled in the palliative care education module in their nursing curriculum and were therefore suitable candidates for the study. In these health professions, it is a required module, discussing significant palliative care features such as pain management, symptom control, communication strategies for providing information on end-of-life care, and ethical implications of palliative care. The study did not control for the participants' demographics, such as age, gender, and prior exposure to palliative care education, as the main focus was on the intervention's overall effectiveness among a heterogeneous group of nursing students.

### **3.3 Data Collection Methods**

The quantitative and qualitative data collection methods were employed so that to have a comprehensive overview of the efficiency of the palliative care education module. The quantitative data were obtained by using pre and post-tests to assess the level of knowledge and attitude of the students towards the concept of palliative care. The pre-test was conducted to determine the current level of knowledge and attitude of the students as a baseline and the post-test was administered to determine any change in the knowledge and attitude of the students as the course module ended. The pre and post tests were multiple choice and true/false questions with a broad scope of subjects in the principles of palliative care, pain management, communication strategies, ethical issues and cultural aspects of end-of-life care. The researchers contrasted the pre and post test results so as to determine how much knowledge has improved and whether the attitude towards the learning has changed due to the direct effect of the educational intervention.

A focus group interview was also used as a form of qualitative data collection, to their view of their education in palliative care, in order to obtain their thought, feeling and experiences. Ten focus group interviews were conducted between eight and 12 students. The interview was semi structured whereby the interviewer had a group of open ended questions to help them discuss the subject and be able to express their perceptions towards the educational module, how it will be relevant to their clinico practise and how it will change their personal attitudes to palliative care. Some of the key questions that were posed to people included: What aspects of palliative care are you now most confident of? What has this module done to alter your thoughts about palliative care? What has proved not so easy to learn in relation to palliative care? Using such questions, one would be to come up with elaborate answers and reflections regarding the learning experience that the students have. The students were also requested to share their thinking of how empathy towards sick patients with terminal illnesses was transformed by the education. The interviews were therefore audio-taped and a word-to-word transcript of the same was taken.

### **3.4 Data Analysis**

The data gathered using the two methods, the quantitative and qualitative methods, were analysed using appropriate methods so as to come up with meaningful conclusions regarding the effectiveness of the palliative care education. Descriptive statistics were calculated on the pre- and post-test scores with the quantitative data in order to analyse the results of the education intervention on the students based on their pre- and post-test scores. The gains in knowledge were measured through the calculation of mean scores, standard deviations and the differences in scores. Subsequently, paired t-

tests were done to determine whether the differences between the pre and post-tests were statistically significant, in which case it could be said that the education made a measurable difference in the knowledge and attitudes of the students towards palliative care. These tests made it possible to measure the impact of the educational module on the knowledge of the students in the primary concepts of palliative care.

Thematic analysis was used to analyse the data provided by the focus group interviews to give qualitative data. The rationale behind the adoption of this approach is that it assists in finding general themes and patterns in the information, which allows getting a better understanding of the experiences of the students. Thematic analysis involved several steps which entailed transcribing of the audiotapes, re-reading and rereading of the transcripts to familiarize with the data. Secondly, data coding was carried out through the extraction of key phrases or concepts that were pertinent to the research questions. Once the codes had been developed, they were then grouped in themes that revealed the common ideas and patterns in the interviews. Lastly, the experiences of the students in this type of interprofessional education were analyzed in the first and second practicum; the themes derived were of the stronger empathy with the patients with terminal illness, the better knowledge of the principles of palliative care and the difficulty of coping with emotional and ethical issues in end-of-life care. It has been performing the analysis by using python. Integration of these approaches made it simpler to cross-check cheque and authenticate the results between quantitative and qualitative results to provide a fuller perspective of whether the palliative care education module was effective or not.

### 3.5 Integration of Data

The combination of the quantitative and qualitative data gave a better understanding of the effect of the educational intervention on nursing students. The study was able to present a more complete picture of the educational outcomes by analysing the pre- and post-test results and the themes from the focus group interviews. Quantitative results showed large and significant improvements in students' knowledge and attitudes, and qualitative data gave rich context as to how and why these changes did occur. It will be easier to link the students' enhanced empathy with their increased knowledge and confidence in being able to provide palliative care and they concluded that the educational intervention not only improved their knowledge but also their empathic and professional development.

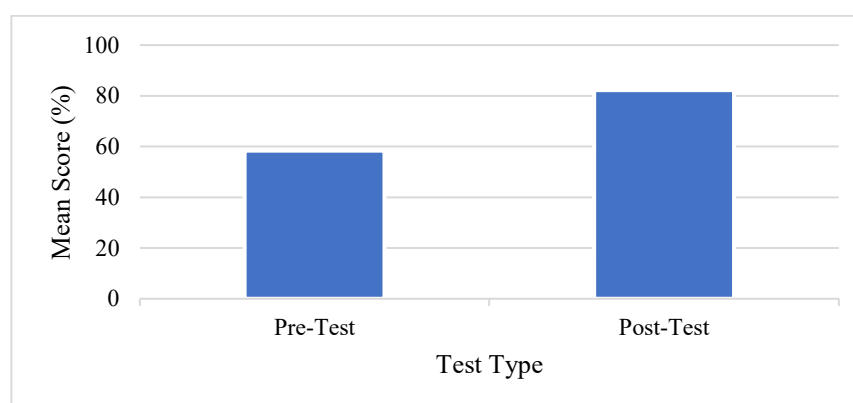
## 4. RESULTS

### 4.1 Quantitative Results

Based on the pre and post-tests that entailed attitude surveys, the knowledge and attitudes of the students towards palliative care improved significantly. The data of the pre and post-test scores showed that students understood the most important concepts of palliative care much better. The table 1 summarises the average score improvements of all the participants in the pre and post test assessment. As figure 1 indicates, the mean pre-test score was 58.4% (SD = 8.5). The post test mark on the education module was 82.3 percent with a low standard deviation of 6.3 percent after the palliative care module had been completed.

**Table 1: Pre- and Post-Test Results on Palliative Care Knowledge**

Test Type	Mean Score (%)	Standard Deviation (%)	N
Pre-Test	58.4	8.5	120
Post-Test	82.3	6.3	120

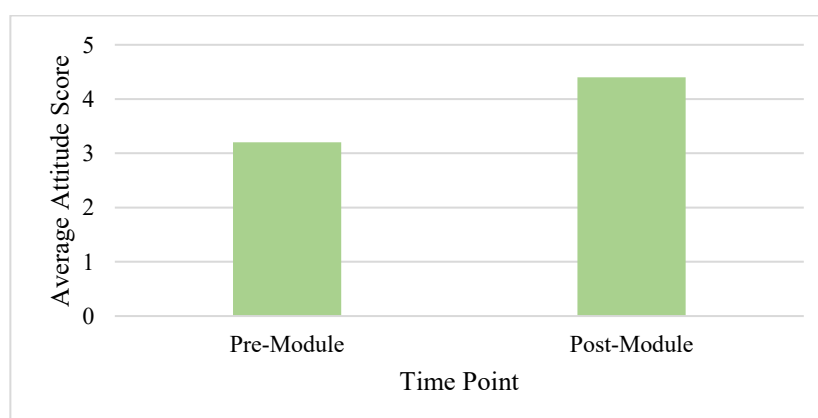


**Figure 1: Pre- and Post-Test Results on Palliative Care Knowledge**

The findings reveal that there is a very positive change in the knowledge of palliative care as far as the education group students are concerned. The difference in the score was calculated and found to be statistically significant ( $p < 0.01$ ), therefore, proving the use of educational intervention as an effective measure to enhance the knowledge of the principles of palliative care among students. The attitude surveys revealed, as well, that students changed their attitude towards palliative care positively as a result of the module. Before the education module, students scored moderately on a measure of empathy and confidence when it comes to offering end of life care. Even though there was no change in the average attitude score following the module, the students indicated a higher sense of confidence and empathy towards patients with life limiting conditions. Figure 2 shows the attitude surveys that demonstrate the change in the attitudes toward palliative care of students. The x-axis will be the average attitude score (1 to 5, low confidence and empathy to high confidence and empathy). Means of pre-module and post-module were 3.2 and 4.4 respectively (Table 2). This is represented by a significant increase in the preparedness of students to provide palliative care to signify that pre mortem educational module also enhanced emotional preparedness of, as well as professional outlook towards, end of life care of students.

**Table 3: Comparison of Average Attitude Scores Before and After Palliative Care Module (N = 120)**

Time Point	Average Attitude Score	Interpretation
Pre-Module	3.2	Moderate empathy and confidence
Post-Module	4.4	High empathy and confidence



**Figure 1: Attitude Change Towards Palliative Care Before and After Education**

#### 4.2 Qualitative Results

Thematic analysis was used to analyse the focus group interview data and some of the key themes were identified in line with the experiences of students on palliative care education module. The results revealed that the students were far more acquainted with the notion of palliative care and

expressed their abilities to empathize with dying patients to a greater extent. Table 3 summarizes the results.

**Table 3: Key Themes from Focus Group Interviews**

Theme	Description
Increased Empathy	Students expressed a greater sense of compassion and understanding for patients with life-limiting illnesses.
Enhanced Understanding of Ethical Issues	Students reported a deeper comprehension of the ethical challenges faced in palliative care, including end-of-life decision-making.
Confidence in Communication	Many students felt more confident in discussing sensitive topics, such as death and dying, with patients and families.
Emotional Challenges	Some students discussed the emotional difficulties they encountered while learning about palliative care, especially in relation to patient suffering.

Table 3 shows that students grew emotionally and intellectually in their understanding of palliative care as revealed by the qualitative analysis. Increased Empathy was the most popular theme, as mentioned by a number of students who found the module humanised patient care. An additional theme that was mentioned frequently was the 'Enhanced Understanding of the Awards' in which the students commented that the course assisted them with their understanding of the complicated ethical issues that may arise while caring for a severely ill patient. As far as communication skills are concerned, the theme of "Confidence in Communication" showed that students were more confident to discuss difficult topics with patients and families. However, the theme 'Emotional Challenges' was that some found the emotional burden of the content difficult, particularly around the realities of terminal illness.

#### **4.3 Integration of Quantitative and Qualitative Results**

The situation was understood by integrating the quantitative data with the qualitative insights. The pre- and post-test results produced statistical evidence that indicated a significant improvement in students' knowledge of molecular biology. Qualitative data from the focus group interviews contributed more information to the emotional/experiential side of the educational intervention.

For instance, while the quantitative results showed for every question in palliative care principles, the improvement of students' knowledge was 23.9% on average, the qualitative results found that the increase of students' knowledge about palliative care principles led to an increase of students' empathy and communication skills significantly. The attitude surveys and the focus group discussions show that palliative care education improves students' confidence, and this is supported by the fact that students' cognitive understanding is not the only thing that improves but also their emotional and psychological readiness to deal with the challenges of end-of-life care. Additionally, qualitative data reports describe challenges involving emotions which show the module was effective in improving empathy and communication, but further intended mechanisms for providing support to support the emotional aspect of working with terminally ill patients may be required.

## **5. DISCUSSION**

This study results provide important information on the effectiveness of palliative care education in nursing programmes. The quantitative and qualitative data showed that students who received some palliative care education had an improved knowledge, improved attitudes and were better emotionally prepared to care for patients with life limiting illness. Through integration of both types of data we were able to have a comprehensive understanding of how palliative care education affects nursing students bringing quantitative attainment improvements and more deeply exploring how students experienced meaning. Furthermore, the quantitative results showed that in terms of the pre-and post-test scores, students had gained greater knowledge in the palliative care principles. Table 1 and Figure 1 show that the average score on the pre-test was 58.4% indicating the baseline knowledge of students before the start of the education module. After the intervention, the post-test average increased to

82.3%, or an increase of 23.9%. The improvement shown here is statistically significant (paired t test) and suggests that this palliative care education module had some meaningful effect on the students' cognition of the subject. This improved knowledge also demonstrates that the module effectively transmits vital material and illustrates that the educational system employed in the module improves students' understanding of key elements such as pain administration, communications approaches, and moral issues in palliative care (Carragher *et al.*, 2016).

The attitude surveys also showed that students' perceptions of palliative care changed. Table 2 and Figure 2 show that students' confidence and empathy towards end-of-life care increased significantly. A moderate level of empathy and confidence was indicated by the pre-module attitude score of 3.2 (on a scale of 1 to 5). In the post-module, the students' confidence and preparedness to provide palliative care increased as the post-module score increased (4.4). This change in positive attitude towards palliative care is consistent with previous studies on educational interventions and nursing students' attitudes and readiness to provide care to a patient with terminal illness (Lavelle *et al.*, 2013). As clearly shown in the graph, the module did help to improve students not only in knowledge but also emotionally, which is needed to provide compassionate and competent care in actual clinical settings. Additionally, qualitative data offered further depth to these findings by giving the students' lived experience of the palliative care education module. According to Table 3, several important themes were generated from the thematic analysis: involving increased empathy in the learner, enhanced understanding of ethical issues, and enhanced learner's confidence in communication. The module was reported by students to have helped them connect with the emotional aspects of caring for terminally ill patients. Although the focus group interviews often reported themes which related to a stronger sense of compassion and empathy from the participants. Students also shared how the module helped them see the patients more as a whole, and not just physical. They learned more about patient centered care.

It was also found that confidence in communication was another important theme. The education module was found to give students the tools and strategies to have difficult conversations with patients and their families about death and dying (Nilsson *et al.*, 2022). In particular, this increase in communication skills is important because effective communication is frequently identified as one of the most important elements of palliative care. These skills have been found to be a key indicator of readiness for clinical practice and are often used with little instruction on the job. Nonetheless, the emotional struggles the students consistently face cannot be ignored. Many students indicated growth in their emotional empathy, as well as some who discussed discomfort and unease with the emotional demands of palliative care. The finding suggests that nursing students need more emotional support and guidance when dealing with palliative care topics. The palliative care education module may need to add more coping strategies or peer support mechanisms in future iterations to assist the emotional aspects associated with being a care giver of terminally ill patients, which can be overwhelming.

## 6. LIMITATIONS

Although this study furnished valuable insights on a valuable topic, this study is not without limitations. The first weakness regards the fact that the sample of the study was taken from one institution, hence limiting the generalizability of the findings. However, the nursing students in this study may not represent the broader population of nursing students across different educational settings (Curriculum, teaching styles), and they may differ from the current nursing students in terms of characteristics in their respective programs. The inclusion of multiple institutions in future research would improve the external validity of the results. Second, although the sample size was 120 students, it was adequate for this study, but it may not be representative of all the diversity of experiences of students. More robust findings, allowing for the variability in responses, would be ensured with a larger sample size. The study also considered nursing students in their third and fourth year of study, as these students may have already been exposed to clinical environments and the acquired knowledge or attitudes may influence their baseline attitudes and knowledge. It may be beneficial to include students at different levels of their education to gain a more complete picture of the effectiveness of palliative care education. Furthermore, there is dependence on self-reported data from survey and

focus group interviews. These methods provide very good insight to students' attitudes and experience, but are subject to social desirability bias; students report answers that they think they should say or what the answer should be. To alleviate this, future studies might include such objective measures as instructors' or clinical supervisors' ratings on the applicability of palliative care knowledge in the real world. Finally, the study did not measure how much longer the knowledge and attitude effects of palliative care education lasted.

## 7. CONCLUSION

This study highlights the importance of palliative care education to the level of nursing student's knowledge, attitude and emotional preparedness in the end-of-life care provision. Results of the quantitative and qualitative analyses showed that students made a lot of progress in understanding palliative care concepts and had more positive attitudes in caring for terminally ill patients. Statistical analysis on the data confirmed that the education module indeed improved students' knowledge about the primary palliative care principles of pain management, ethical considerations, communication strategies, and other essential elements of palliative care that should be integrated into a patient's care. Moreover, by using both a survey and focus group discussion, the increase in attitude scores demonstrated students' heightened capability in fostering empathy as well as confidence in handling the emotional intricacies of palliative care. Focus group interviews on students gave a qualitative data have been used to give a deeper understanding of students' experiences. The overall impact of the education module was inclusive and mentioned themes of increased empathy, improved communication skills, boosted confidence in tackling ethical issues, and so on. In addition, students described emotional challenges in coming to terms with the realities of palliative care, but the module was effective in allowing them to work through these emotions and to be better prepared for clinical encounters in the real world. While these are positive outcomes, the study also shows the need for additional support for dealing with the emotional demands of palliative care education, and the need for larger, more diverse samples to create greater generalization of the findings. Future research improvements include the limitations for the study such as being a single institution and depending on self-reporting. This study concludes that ensuring that nursing students receive palliative care education prior to graduation has merit. Rather, it stresses on the necessity of formulating nursing students cognitively and emotionally for rendering a kind and patient centered care in an end-of-life scenario to raise the quality of the care provided to patients who are terminally ill.

## REFERENCES

1. Brand, A. H., Harrison, A., & Kumar, K. (2015). "It Was Definitely Very Different": An evaluation of palliative care teaching to medical students using a mixed methods approach. *Journal of palliative care*, 31(1), 21-28.
2. Zhang, L., Huang, Y. L., Wu, X. Q., Liu, C. Y., Zhang, X. L., Yang, X. Y., ... & Yang, M. F. (2024). The impact of virtual clinical simulation on nursing students' palliative care knowledge, ability, and attitudes: A mixed methods study. *Nurse Education Today*, 132, 106037.
3. Hagelin, C. L., Melin-Johansson, C., Ek, K., Henoch, I., Österlind, J., & Browall, M. (2022). Teaching about death and dying—A national mixed-methods survey of palliative care education provision in Swedish undergraduate nursing programmes. *Scandinavian journal of caring sciences*, 36(2), 545-557.
4. Farquhar, M. C., Ewing, G., & Booth, S. (2011). Using mixed methods to develop and evaluate complex interventions in palliative care research. *Palliative medicine*, 25(8), 748-757.
5. Graham, R., Lepage, C., Boitor, M., Petizian, S., Fillion, L., & Gélinas, C. (2018). Acceptability and feasibility of an interprofessional end-of-life/palliative care educational intervention in the intensive care unit: a mixed-methods study. *Intensive and Critical Care Nursing*, 48, 75-84.
6. Tian, X., Zheng, X., Peng, Y., Zhou, X., Huang, B., Xie, Y., & Xiao, W. (2024). The effects of hospice care education on first-year undergraduate nursing students in mainland China: A mixed-methods study. *Nurse Education Today*, 134, 106095.

7. Häusermann, S., Huber, E., Meichtry, A., Gautschi, F., Ris, I., & Deufert, D. (2025). Use of high-fidelity simulation in advancing palliative care skills in nursing students: A convergent mixed methods study. *Journal of Nursing Education and Practice*, 15(1).
8. Morita, T., Miyashita, M., Yamagishi, A., Akiyama, M., Akizuki, N., Hirai, K., ... & Eguchi, K. (2013). Effects of a programme of interventions on regional comprehensive palliative care for patients with cancer: a mixed-methods study. *The lancet oncology*, 14(7), 638-646.
9. Wells, G., Llewellyn, C., Hiersche, A., Minton, O., Barclay, D., & Wright, J. (2024). Care of the dying—medical student confidence and preparedness: mixed-methods simulation study. *BMJ supportive & palliative care*, 14(e2), e1968-e1975.
10. Reed, E., Todd, J., Lawton, S., Grant, R., Sadler, C., Berg, J., ... & Watson, M. (2018). A multi-professional educational intervention to improve and sustain respondents' confidence to deliver palliative care: A mixed-methods study. *Palliative Medicine*, 32(2), 571-580.
11. Kirkpatrick, A. J., Cantrell, M. A., & Smeltzer, S. C. (2017). Palliative care simulations in undergraduate nursing education: An integrative review. *Clinical Simulation in Nursing*, 13(9), 414-431.
12. Durojaiye, A., Ryan, R., & Doody, O. (2023). Student nurse education and preparation for palliative care: A scoping review. *Plos one*, 18(7), e0286678.
13. Lippe, M., Johnson, B., Mohr, S. B., & Kraemer, K. R. (2018). Palliative care educational interventions for prelicensure health-care students: an integrative review. *American Journal of Hospice and Palliative Medicine®*, 35(9), 1235-1244.
14. Nilsson, S., Gibson, J., Paterson, C., & Crookes, P. (2022). Evidence informed generalist palliative care content for undergraduate nursing curriculum: An integrative review. *Nurse Education in Practice*, 64, 103447.
15. Carragher, J., & McGaughey, J. (2016). The effectiveness of peer mentoring in promoting a positive transition to higher education for first-year undergraduate students: a mixed methods systematic review protocol. *Systematic reviews*, 5, 1-9.
16. Lavelle, E., Vuk, J., & Barber, C. (2013). Twelve tips for getting started using mixed methods in medical education research. *Medical Teacher*, 35(4), 272-276.
17. Thavaraj, A., & Gillett, K. (2019). Does post-registration palliative care education for nurses improve practice? A systematic review. *International Journal of Palliative Nursing*, 25(11), 552-564.