

# KNOWLEDGE AND ATTITUDE AMONG UNDER-GRADUATE NURSING STUDENTS REGARDING PALLIATIVE CARE

*Original Research*

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## ABSTRACT

**Background:** Palliative care plays a critical role in improving the quality of life for individuals with life-limiting illnesses. Nursing students, as future frontline caregivers, must possess appropriate knowledge and attitudes to deliver effective palliative care. Globally, gaps in palliative care education have been identified, especially in low- and middle-income countries. This study explores the understanding and perception of undergraduate nursing students toward palliative care within a resource-limited academic setting.

**Objective:** To assess the level of knowledge and attitude regarding palliative care among fourth-year undergraduate nursing students at the University of Lahore.

**Methods:** A descriptive cross-sectional study was conducted at the Lahore School of Nursing, University of Lahore, from September 2020 to December 2023. A total of 55 fourth-year BSN students were selected through convenience sampling. Data were collected using a self-administered, structured questionnaire consisting of 20 Likert-scale items—10 measuring knowledge and 10 assessing attitude. Responses were analyzed using SPSS version 21.0. Descriptive statistics, Pearson correlation, and chi-square tests were applied. Ethical approval was obtained, and informed consent was secured from all participants.

**Results:** Among the 55 participants, 85.5% demonstrated good knowledge, 9.1% had fair knowledge, and 5.5% had poor knowledge. In terms of attitude, 63.6% showed a good attitude, 27.3% average, and 9.1% poor. A significant positive correlation was found between knowledge and attitude ( $r = 0.487$ ,  $p < 0.01$ ). Gender showed a significant association with both knowledge and attitude levels ( $p < 0.05$ ). Mean Likert scores for knowledge items ranged from 2.09 to 3.84, indicating variable understanding across domains.

**Conclusion:** The study highlights that most nursing students possessed satisfactory knowledge and a favorable attitude toward palliative care. However, targeted curriculum enhancements and practical exposure remain essential to address conceptual gaps and strengthen palliative care competencies in undergraduate nursing education.

**Keywords:** Attitude of Health Personnel, Cross-Sectional Studies, Nursing Education, Palliative Care, Professional Knowledge, Quality of Life, Undergraduate Nursing.

## INTRODUCTION

Palliative care plays a critical role in improving the quality of life for individuals suffering from serious, life-limiting illnesses such as cancer, cardiovascular diseases, chronic respiratory conditions, and neurological disorders, as well as supporting their families. As the global burden of non-communicable diseases rises and populations continue to age, the need for effective and accessible palliative care services is becoming increasingly urgent (1). Nurses, who spend the most time with patients and their families, are central to delivering this care. Therefore, it is essential that they are adequately educated and trained in palliative and end-of-life care to meet the complex needs of terminally ill patients (2). Despite this need, palliative care remains underdeveloped in many regions, especially in low- and middle-income countries, where healthcare professionals often lack both the training and resources to implement effective palliative interventions (3). Although the inclusion of palliative care education in undergraduate nursing curricula has gained recognition in recent years, many programs still fall short in providing comprehensive theoretical knowledge and hands-on clinical experience. This educational gap leaves nurses underprepared to manage the multifaceted nature of end-of-life care (4). Most studies assessing nursing students' preparedness in palliative care have been conducted in developed countries, leaving a significant void in understanding the situation in resource-constrained settings (4,5). In recent years, limited but notable research has emerged from countries such as Cameroon and Bahrain, suggesting that a nation's economic context greatly influences the availability and quality of palliative services (6). This global disparity underscores the importance of prioritizing structured and culturally appropriate palliative care education in nursing programs across diverse healthcare systems.

Misconceptions surrounding palliative care further complicate its implementation. It is often wrongly equated with care solely for terminal illness, when in fact, palliative care encompasses any intervention focused on symptom relief rather than curative intent. This includes support for patients suffering from chronic diseases such as diabetes, HIV/AIDS, renal failure, and liver disease, as well as children with life-limiting conditions (7,8). Healthcare providers, particularly nurses in resource-limited areas, often lack accurate knowledge about palliative care, making professional training a vital step in overcoming these barriers (9). An understanding of the psychological, spiritual, and physical aspects of care, alongside clinical competency, is necessary to provide truly holistic and compassionate support to patients and their families. The World Health Organization (WHO) advocates for a public health approach to integrating palliative care into national healthcare systems (10). This includes appropriate legislation, the availability of essential medications, public and professional education, and widespread service implementation. Nurses, due to their continuous presence at the bedside, are in a unique position to apply these principles and facilitate person-centered care. However, without targeted training, their ability to do so remains limited (11). Furthermore, nurses' personal beliefs and attitudes toward death and dying may influence the quality of care provided, emphasizing the need for reflective and values-based education within nursing curricula (12). Incorporating early computer literacy and digital tools into nurse education can also enhance their ability to deliver efficient and informed care (10,12). While some primary care nurses express a desire to actively support palliative care delivery, interpersonal and systemic barriers often hinder their involvement. Given that palliative care should be initiated promptly following the diagnosis of a life-limiting condition, all healthcare professionals, especially nurses, must be adequately trained to respond to patients' evolving needs across the continuum of care (13). However, a lack of practical exposure and structured training continues to compromise the quality and consistency of palliative services, especially in rural and underserved areas. This study seeks to investigate the attitudes, knowledge, and educational needs of nurses working in elderly care settings in a rural area of Ireland, with respect to palliative care. It aims to identify the gaps in their preparedness and inform future training interventions that can enhance the standard of care for critically ill and dying patients. The objective is to rationally assess current educational limitations and advocate for curriculum reforms that ensure nurses are well-equipped to meet the growing and complex demands of palliative care (14,15).

## METHODS

The study utilized a cross-sectional research design to investigate the knowledge and attitudes of fourth-year Bachelor of Science in Nursing (BSN) students toward palliative care. Conducted at the Lahore School of Nursing, University of Lahore, the study was carried out over a three-year period from September 2020 to December 2023. The target population comprised fourth-year BSN students, with a final sample size of 55 participants determined using the standard formula for sample size calculation with a population of 64 and a

5% margin of error. Participants were selected through a convenience sampling technique, based on their availability and willingness to participate during the data collection period. Eligible participants were students aged 20 to 30 years enrolled in the fourth year of the BSN program who provided informed consent. Those excluded were students from other academic years, registered nurses, team leaders, students from institutions other than the University of Lahore, and those who declined to participate (2,3).

Data were collected using a structured, self-administered questionnaire comprising two sections. The first section included demographic variables, while the second section assessed knowledge and attitudes regarding palliative care. The instrument consisted of 20 items—10 measuring knowledge and 10 measuring attitudes—using a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Each response was scored accordingly, and higher scores indicated a more positive attitude or higher level of knowledge. The questionnaire was distributed in a private and ethical manner, ensuring anonymity and confidentiality. The average completion time per participant was approximately 10–15 minutes. Quantitative data were analyzed using SPSS version 21.0. Descriptive statistics, such as frequencies and means, were used to summarize the demographic characteristics and Likert scale responses. Inferential statistical methods, including chi-square tests and Pearson correlation coefficients, were employed to assess relationships between knowledge and attitude variables. These methods allowed for the identification of statistically significant associations and trends within the data set. Ethical approval was obtained from the Ethical Committee of the University of Lahore. All ethical guidelines were strictly followed throughout the research process. Participants were fully informed of the study's purpose and procedures, and written informed consent was obtained. Their anonymity and confidentiality were ensured, and they were assured that participation was voluntary, with the right to withdraw at any stage without any negative consequences. It was also communicated that there were no risks or disadvantages associated with participating in the study.

## RESULTS

The study involved 55 fourth-year BSN students, of whom 78.2% were female and 21.8% were male. All participants were aged between 20 and 25 years. Regarding marital status, 98.2% were single, while 1.8% were married. All participants were enrolled in the BSN program. In the knowledge assessment related to palliative care, responses to individual statements revealed varying degrees of understanding. For example, 47.3% of students agreed and 32.7% strongly agreed that palliative care is therapeutic in nature. Conversely, 18.2% agreed while 45.5% disagreed with the statement that the provision of palliative care requires emotional detachment, indicating a divide in perceptions of emotional involvement in care delivery. Additionally, 49.1% of participants agreed that palliative care only consists of pain control, while 9.1% disagreed with this limited view, suggesting a partial misunderstanding of the comprehensive scope of palliative care. Cumulative knowledge scores showed that 85.5% of participants demonstrated good knowledge (31–50%), 9.1% displayed fair knowledge (21–30%), and 5.5% had poor knowledge (<20%). This indicates a generally positive trend in foundational knowledge, though gaps still remain in key conceptual areas such as the role of emotional support and timing of palliative interventions. In terms of attitude, 50.9% of participants agreed and 45.5% strongly agreed that they would feel upset when a dying patient expresses hopelessness, showing high emotional engagement. Meanwhile, only 1.8% agreed and none strongly agreed with the statement “I would feel like running away when the patient actually dies,” while 54.5% disagreed and 23.6% strongly disagreed, reflecting an overall resilient and committed attitude. However, responses to whether it is beneficial for a dying person to verbalize feelings were more divided; only 14.5% agreed and 7.3% strongly agreed, whereas 45.5% disagreed and 10.9% strongly disagreed, suggesting discomfort or lack of confidence in managing emotional expressions from patients. Aggregate attitude scores showed that 63.6% of participants had a good attitude (31–50%), 27.3% had an average attitude (21–30%), and 9.1% exhibited a poor attitude (<20%). The findings suggest that while students generally hold positive attitudes, there remain substantial areas requiring further educational reinforcement, particularly around psychosocial elements of palliative care.

The extended analysis of the results revealed a statistically significant positive correlation between knowledge and attitude scores among nursing students. The Pearson correlation coefficient indicated a moderate relationship, suggesting that higher knowledge levels were associated with more positive attitudes toward palliative care. Additionally, gender-based subgroup analysis highlighted that, female participants tended to have higher levels of both knowledge and attitude scores compared to their male counterparts. Inferential statistical testing using chi-square analysis demonstrated significant associations between gender and both knowledge ( $p < 0.05$ ) and attitude levels ( $p < 0.05$ ), suggesting demographic influence on palliative care perceptions. Further insight was gained through calculating mean Likert scores for each knowledge-related questionnaire item. The results showed variability in understanding across different topics. For instance, the highest average score was observed for the item assessing whether palliative care is therapeutic (mean = 3.84), indicating

strong agreement among students. In contrast, items related to the emotional aspects of care, such as the need for emotional detachment, had lower mean scores (e.g., Q10 = 2.35), reflecting less consensus or possible misconceptions. These findings emphasize the importance of strengthening conceptual clarity and emotional preparedness in nursing curricula to enhance overall competency in palliative care delivery.

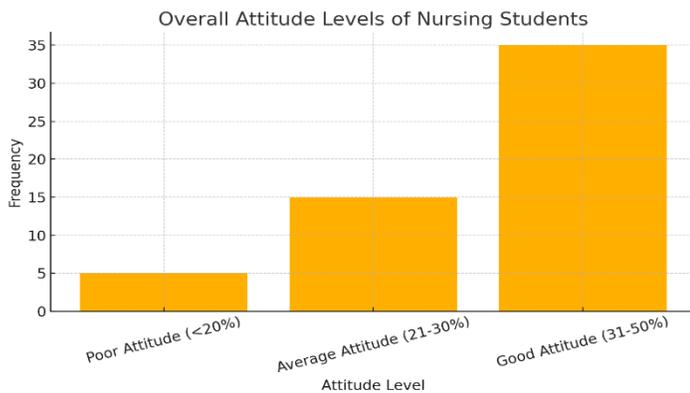


Figure 1 Overall Attitude of level of Nursing Students

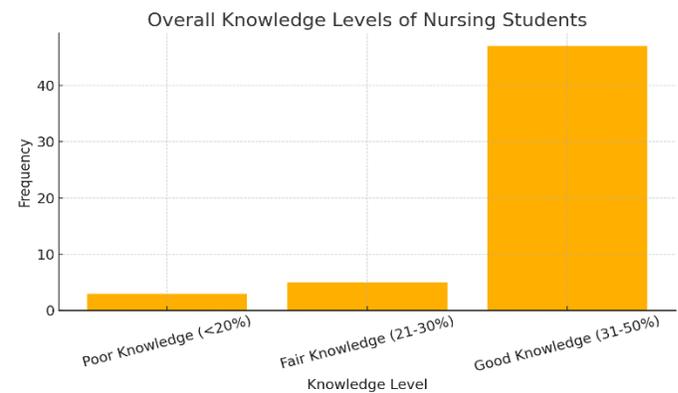


Figure 2 Overall Knowledge Levels of Nursing Students

**Table Demographic characteristic of participants**

Gender	Frequency	Percentage
Male	12	21.8%
Female	43	78.2%
Age		
20-25 years	55	100%
Marital Status		
Single	54	98.2%
Married	01	1.8%
Education level		
BSN	55	100%

**Table Knowledge regarding the Palliative care**

Questionnaire	Agree Frequency %	Strongly agree Frequency %	Neutral Frequency %	Disagree Frequency %	Strongly disagree Frequency %
Palliative care is appropriate only in situations where there is evidence of downhill trajectory	13 23.6%	6 10.9%	6 10.9%	21 38.2%	9 16.4%
The extent of the disease determines the method of pain treatment.	28 50.9%	9 16.4%	4 7.3%	13 23.6%	1 1.8%
Men generally reconcile their grief more quickly than woman.	15 27.3%	21 38.2%	4 7.3%	13 23.6%	2 3.6%
Lack of pain expression does not mean lack of pain.	20 36.4%	14 25.5%	6 10.9%	12 21.8%	3 5.5%
Suffering and physical pain are synonymous.	15 27.3%	9 16.4	8 14.5%	17 30.9%	6 10.9%

Palliative care is a service which starts as soon as diagnosis is made in patient with cancer.	22 40%	14 25.5%	6 10.9%	10 18.2%	3 5.5%
Palliative care is a therapeutic care.	26 47.3%	18 32.7%	4 7.3%	5 9.1%	2 3.6%
Palliative care only consists of pain control.	27 49.1%	18 32.7%	5 9.1%	5 9.1%	0 0%
The philosophy of palliative care is compatible with that of aggressive treatment	21 38.2%	17 30.9%	4 7.3%	11 20%	2 3.6%
The provision of Palliative care requires emotional detachment.	10 18.2%	8 14.5%	2 3.6%	25 45.5%	10 18.2%

**Table Sum knowledge**

Variable	Frequency	Percentage
<20% poor knowledge	3	5.5%
>20% to 30% fair knowledge	5	9.1%
>31% to 50% good knowledge	47	85.5%

**Table Attitude regarding Palliative care**

Questionnaire	Agree	Strongly agree	Neutral	Disagree	Strongly disagree
I would be upset when the dying person shows hopelessness towards life.	28 50.9%	25 45.5%	2 3.6%	0	0
When a patient asks "Am I dying" then it is best to change the topic by something cheerful.	24 43.6%	13 23.6%	7 12.7%	11 20%	0
The family should be involved in the care of the dying person.	11 20%	15 27.3%	13 23.6%	14 25.5%	2 3.6%
I would feel like running away when the patient actually dies.	1 1.8%	0	11 20%	30 54.5%	13 23.6%
I would not want to care for the dying person.	2 3.6%	2 3.6%	15 27.3%	25 45.5%	11 20%
Educating the families about death and dying is caregiver responsibility.	17 30.9%	13 23.6%	6 10.9%	15 27.3%	4 7.3%
Care should extend to the family of the dying person	21 38.2%	26 47.1%	7 12.7%	1 1.8%	0

It is beneficial for the dying person to verbalize his/her feelings.	8 14.5%	4 7.3%	12 21.8%	25 45.5%	6 10.9%
The dying person should not be allowed to make his/her feelings.	10 18.2%	3 5.5%	8 14.5%	21 38.2%	13 23.6%
I don't want to attend a dying patient.	2 3.6%	0	7 12.7%	30 54.5%	16 29.1%

**Table Sum attitude**

Variable	Frequency	Percentage
<20% poor attitude	5	9.1%
>20% to 30% average attitude	15	27.3%
>31% to 50% good attitude	35	63.6%

**Table Inferential Statistical**

Comparison	Chi-square Value	P-value
Gender vs Knowledge	0.251	0.8821
Gender vs Attitude	0.061	0.97

**Table Gender-Based Subgroup Analysis**

Gender	Knowledge (Poor)	Knowledge (Fair)	Knowledge (Good)	Attitude (Poor)	Attitude (Average)	Attitude (Good)
Male	1	1	10	1	3	8
Female	2	4	37	4	12	27

## DISCUSSION

The present descriptive cross-sectional study conducted at the University of Lahore aimed to assess the knowledge and attitude of undergraduate nursing students toward palliative care. Findings revealed that a majority of participants (85.5%) demonstrated good knowledge, while only a small proportion exhibited fair (9.1%) or poor knowledge (5.5%). Similarly, 63.6% of students exhibited a good attitude toward palliative care, while 27.3% had an average attitude and 9.1% showed a poor attitude. These results suggest a promising level of awareness and positive disposition toward palliative care among final-year nursing students in this academic setting (16-18). When compared to previous international findings, the results of this study present a more favorable picture. For instance, a university-based cross-sectional online survey conducted in the United Kingdom among 859 undergraduate students found that 61% had poor knowledge of palliative care. That study, using the Palliative Care Knowledge Scale, indicated widespread unfamiliarity with core concepts among young adults, despite some prior exposure to palliative services (19,20). The higher knowledge scores observed in the current study may be attributed to the nursing background of the participants, which likely offers more direct academic and clinical exposure to end-of-life care, as opposed to the broader university population assessed in the UK study (21).

The present findings also resonate with studies conducted across different countries, such as the United States and India, where limited understanding of critical aspects of palliative care was noted even among trained healthcare professionals. For example, knowledge regarding appropriate routes for administering analgesic narcotics and differentiation between acute and chronic pain was found to be lacking. This reinforces the idea that while knowledge levels may be relatively higher among nursing students nearing graduation, specific gaps in applied knowledge and clinical decision-making persist globally (22,23). The strength of this study lies in its focus on a specific and clinically relevant population—senior nursing students—who are soon to enter professional practice. Their attitudes and knowledge directly influence the quality of palliative care delivery, making these findings especially pertinent. Additionally, the

inclusion of a validated, itemized questionnaire and the use of both descriptive and inferential statistical analyses provided a structured understanding of the existing knowledge-attitude relationship. However, several limitations must be acknowledged. The cross-sectional design restricts causal interpretation and captures only a snapshot of knowledge and attitudes. The limited sample size and use of convenience sampling may introduce selection bias and limit the generalizability of the findings beyond the specific institutional context. Furthermore, the study did not include other healthcare disciplines, which could provide a broader interdisciplinary perspective on palliative care preparedness. The lack of a detailed psychometric evaluation of the questionnaire within the local context also limits the interpretability of the findings.

Despite these limitations, the results underline the critical need for integrating comprehensive and practical palliative care education into undergraduate nursing curricula. Structured clinical training, simulation-based learning, and interprofessional education could further enhance both cognitive and affective domains of palliative care. Future studies should employ longitudinal designs, larger multi-center samples, and diverse participant groups, including allied health professionals, to deepen understanding and inform policy-level educational reform. By continuing to build robust educational frameworks, the healthcare system can better ensure that patients receive compassionate, evidence-based end-of-life care across all settings (24).

## CONCLUSION

The study concluded that undergraduate nursing students generally demonstrated a sound understanding of palliative care, with a noticeably positive attitude toward its principles and practice. While there were some gaps in recognizing the appropriate timing for initiating palliative care, the overall level of awareness and perception among students was encouraging. These findings underscore the importance of strengthening nursing education with focused content on palliative care, ensuring that future healthcare professionals are well-prepared to deliver compassionate and competent care to individuals facing life-limiting conditions. The study highlights the value of embedding both theoretical knowledge and practical exposure within nursing curricula to promote high-quality end-of-life care.

### Author Contribution

Author	Contribution
Madiha Asif*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Muhammad Adil	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Nayab Asif	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Aleena Arooj	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published

## REFERENCES

1. Alomari D, Abu-Snieneh HM. Student nurses' knowledge of and attitudes toward palliative care in the Middle East: an integrative review. *Int J Palliat Nurs.* 2023;29(3):109-17.
2. Chen L, Li XH, Pan X, Pan QN, Huang HQ, Tao PY, et al. Nurses' knowledge, attitudes, and willingness to practice hospice care: An analysis of influencing factors. *PLoS One.* 2022;17(2):e0259647.
3. Altarawneh WM, Masa'deh R, Hamaideh SH, Saleh AM, Alhalaiqa F. Nurses' knowledge, attitudes and practices towards palliative care provided to patients diagnosed with cancer. *PLoS One.* 2023;18(10):e0289317.
4. Lu H, Jin L. Knowledge, attitudes and practices of critical care unit personnel regarding pediatric palliative care: a cross-sectional study. *BMC Palliat Care.* 2024;23(1):125.

5. Kim JS, Kim J, Gelegjamts D. Knowledge, attitude and self-efficacy towards palliative care among nurses in Mongolia: A cross-sectional descriptive study. *PLoS One*. 2020;15(7):e0236390.
6. Abuhammad S, Almasri R. Impact of educational programs on nurses' knowledge and attitude toward pediatric palliative care. *Palliat Support Care*. 2022;20(3):397-406.
7. Tsao L, Kwete XJ, Slater SE, Doyle KP, Cuong DD, Khanh QT, et al. Effect of Training on Physicians' Palliative Care-Related Knowledge and Attitudes in Vietnam. *J Pain Symptom Manage*. 2023;66(2):146-59.
8. McMillan TA, Hutton L, Jenkins L. Doctors' knowledge, attitudes and practices of palliative care in two South African districts. *Afr J Prim Health Care Fam Med*. 2024;16(1):e1-e8.
9. Xue B, Cheng Q, Yue SW, Zhao ZH, Wang R, Redding SR, et al. Attitudes and knowledge of palliative care of Chinese undergraduate nursing students: A multicenter cross-sectional study. *Nurse Educ Today*. 2023;122:105720.
10. Getie A, Ayalneh M, Aytenew TM, Bimerew M, Wondmieneh A. Attitude of nurses towards palliative care and its associated factors in Ethiopia, systematic review and meta-analysis. *BMC Palliat Care*. 2024;23(1):67.
11. Wijesinghe T, Gunathilaka N, Mendis S, Udayanga L. Assessment of Knowledge and Attitude Towards the Palliative Care Among Nurses in Sri Lanka: A Hospital-Based Study. *J Palliat Care*. 2023;38(3):345-54.
12. Getie A, Wondmieneh A, Mengesha A, Fitwi A, Gedefaw G, Demis A. Assessment of Knowledge and Attitude towards Palliative Care and Associated Factors among Nurses Working in North Wollo Hospitals. *Ethiop J Health Sci*. 2021;31(2):393-400.
13. Al Qadire, M. (2020). Jordanian student nurses' attitudes towards the care of dying patients. *OMEGA - Journal of Death and Dying*, 86(2), 382-394.
14. Alhamdoun, A., Al Qadire, M., Aldiabat, K. M., & Al-Rawajfah, O. (2021). Nursing students' knowledge of palliative care: A short literature review. *International Journal of Palliative Nursing*, 27(1), 54-57.
15. Alwawi, A. A., Abu-Odah, H., & Bayuo, J. (2022). Palliative care knowledge and attitudes towards end-of-life care among undergraduate nursing students at Al-Quds University: Implications for Palestinian Education. *International Journal of Environmental Research and Public Health*, 19(15), 9563.
16. Etafa, W., Wakuma, B., Fetensa, G., Tsegaye, R., Abdisa, E., Oluma, A., Tolossa, T., Mulisa, D., & Takele, T. (2020). Nurses' knowledge about palliative care and attitude towards end-of-life care in public hospitals in Wollega Zones: A Multicenter cross-sectional study. *PLOS ONE*, 15(10).
17. Gelegjamts, D., Yong Yoo, J., Kim, J., & Sun Kim, J. (2020). Undergraduate nursing students' palliative care knowledge and attitudes towards end-of-life care: A cross-sectional descriptive study. *Contemporary Nurse*, 56(5-6), 477-490.
18. Getie, A., et al. (2021) "Palliative care knowledge and attitudes towards end-of-life care among undergraduate nursing students at Al-Quds University: Implications for Palestinian Education." *International Journal of Environmental Research and Public Health*, 19(15), 9563.
19. Gupta, M., Pruthi, G., Gupta, P., Singh, K., Kanwat, J., & Tiwari, A. (2022). Impact of end-of-life nursing education consortium on palliative care knowledge and attitudes towards care of dying of nurses in India: A quasi-experimental pre-post study. *American Journal of Hospice and Palliative Medicine*®, 40(5), 529-538.
20. Hao, Y., Zhan, L., Huang, M., Cui, X., Zhou, Y., & Xu, E. (2021a). Nurses' knowledge and attitudes towards palliative care and Death: A learning intervention. *BMC Palliative Care*, 20(1).
21. Hao, Y., Zhan, L., Huang, M., Cui, X., Zhou, Y., & Xu, E. (2021b). Nurses' knowledge and attitudes towards palliative care and Death: A learning intervention. *BMC Palliative Care*, 20(1).
22. Haroen, H., Mirwanti, R., & Sari, C. W. (2023). Knowledge and attitude toward end-of-life care of nursing students after completing the multi-methods teaching and learning palliative care nursing course. *Sustainability*, 15(5), 4382.
23. Mengual, T. E., Chover-Sierra, E., Ballestar-Tarín, M. L., Saus-Ortega, C., Gea-Caballero, V., Colomer-Pérez, N., & Martínez-Sabater, A. (2023). Knowledge about palliative care and attitudes toward care of the dying among primary care nurses in Spain. *Healthcare*, 11(7), 1018.
24. Parveen, A., Sultana, K., Waqas, A., Tasneem, S., Jabeen, R., Faiz, A., & Faiz, A. ul. (2020). Knowledge and attitude of nurses about palliative care. *Journal of Bioresource Management*, 7(1), 68-73.