Teaching Methodologies Regarding Palliative Care Competencies on Undergraduate Nursing Students: A Systematic Review

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Abstract

The teaching problem in undergraduate nursing students (UNS) is a lack of empirical evidence of teaching methodologies for achieving palliative care competencies (PCC). The purpose of this review was to synthesize the evidence of palliative care (PC) teaching methodologies for UNS and their effectiveness to achieve PCC.

Four electronic databases were searched, including Scopus, ProQuest, PubMed, and CINAHL, from 2015 to 2020. Full-text available, published in peer-reviewed journals, written in English and aimed at verifying the effectiveness of teaching methodologies for achieving PCC were included. The Critical Appraisal Skills Programme (CASP) checklist was used to appraise the trustworthiness, relevance, and the results of published papers.

Five studies were considered relevant for this systematic review. The learning methodology carried out to achieve PCC for UNS varies from multimodality approaches, simulation-based experience to high fidelity simulation. Kolb's Experiential Learning Theory proved to be effective in improving students' PCC, especially in the aspects of knowledge, attitude, comfort, and self-awareness.

The learning methodology identified in this review was proven to be effective to improve the PCC on UNS; simulation being the most widely applied method in teaching strategies.

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Introduction

The World Health Organization (WHO) defines palliative care (PC) as an integrated system of care provided to patients suffering from chronic or terminal illness from the time the diagnosis is made to the end of the patient's life. It is a people-centered approach to care that takes into account physical, psychological, social and spiritual aspects associated with a life-threatening illness1. During the sequence of their illness, patients need expert care including end of life care. This generates a need for longer-term comprehensive care to shorter-term curative treatments and to maximize the quality of life of patients during their illness. WHO also states the importance of PC care and end-of-life care (EOL) and recommends that these treatments could be offered early in the course of a serious illness. Unfortunately, most postgraduate nurses feel unprepared to provide care to patients with serious illnesses or patients who are dying2–5. This condition highlights the need for education and training on PC for UNS.

Education is the key to develop quality of human resources and a tool to kind an important transformation in learners' knowledge and comfort about PC. Without the right learning strategies and approaches, students will not be able to carry out PC holistically. After receiving

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education in palliative nursing, graduates must be able to demonstrate competency in PC in an effective, fair, and high-quality manner to terminally ill and dying patients. Expectations about the ability to do PC and EOL care are sources of stress and anxiety for UNS, demonstrating the necessity for the right teaching methodologies before graduating.

EOL communication skills and PC, as well as the ability to define an EOL care plan, can be a particular challenge for graduate nursing graduates. It is important to intensify the stimulus for the theoretical and practical teaching of PC in higher education with an appropriate teaching methodology. In other cases, even though the UNS have received education about PC, the teaching methodology that has been applied has never been explored for its effectiveness on the achievement of students' competencies regarding PC.

To the best of our knowledge, there has been no systematic review of learning methods that evaluates the achievements of PC competencies. Although, the findings of previous studies in PC show their effectiveness to increase the achievement of PC competence through various learning strategies, there is a lack of empirical evidence on how these learning strategies evaluate the achievement of student competencies in performing PC. Therefore, the purpose of this review was to synthesize the evidence in teaching methodologies applied for UNS in PC and their effectiveness in achieving PCC competencies from existing documents.

Materials and methods

A systematic review was performed in 2020 based on the Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA) statement guidelines for systematic reviews5.

We searched four databases (Scopus, ProQuest, PubMed, and CINAHL) from 2015 to 2020. The search strategy comprised in terms of population, intervention context, outcome, timing, setting and study designs (PICOTSS), as reported in Table 1. A search also was done to get additional potential articles. The following research terms were used by applying Boolean operators: "undergraduate nursing students" OR "nursing students" OR "student nurses" AND "learning styles" OR "learning modalities" OR "learning strategy" OR "learning methods" AND "palliative care" OR "end-of-life care" OR "terminal care" OR "hospice care" AND "students' course learning outcome" OR "palliative care competencies", combined as MESH terms and keywords.

Population	Undergraduate nursing student, nursing student, student nurses
Intervention	Learning style, learning modalities, learning strategy, learning method
Context	Palliative care, end-of-life care, terminal care, hospice care
Outcome	Measures of students' course learning outcome, or palliative care competencies
Timing	Studies could be of any duration and follow-up period
Setting	Studies conducted in nursing institutions settings on multiple geographic locations
Study design	Randomized controlled trials Quasi-experimental Open trials

Table 1. Search questions.

Titles and abstracts were screened. Furthermore, the authors peruse the full text when the title and abstract of the found article were unclear. The process preliminary was carried out indecently, then the authors approved the study to be included; any disagreement was fixed through dialogue among the authors. Studies were included if they met the following inclusion criteria: 1) the design or study method must be randomized controlled trials or quasi-experimental or open trials; 2) participants involved must be UNS; 3) the method used in teaching PC should be the primary intervention; 4) PCC should be the primary outcome; 5) research articles must be published in English, open access and free to download, provide full-text and there is no duplication in the database.

A total of 5969 articles was identified through electronic relevant databases (Scopus 5 articles, ProQuest 107 articles, PubMed 5784 articles, and CINAHL 73 articles). Five thousand nine hundred and twenty-three articles were rejected leaving only 46 articles whose titles matched the keywords and after the duplication was removed. After inspecting with abstract checking, checking the full text then proceeded and 41 articles were excluded because they did not meet the inclusion or exclusion criteria.

Data were extracted using a predesigned and piloted template including the following variables: identification of the study (title, author), country where the study was performed and the year(s); research methodology, which is abbreviated using DSVIA (D: study design, S: sample, V: Variable, I: instrument, and A: analysis), and summary (see Table 2).

Results

Initially, 5969 articles were retrieved, and 5964 articles were excluded. Finally, five articles were included. A summary of the studies and their findings are presented in Table 2. the majority of studies included were conducted in United States of America (USA)6, 8–10 and one study in Pakistan7. Those studies evaluated the effects of teaching methodologies regarding palliative and end-of-life care education on UNS competencies.

PC education at the UNS level was presented either as a separate elective course6–9 or through the ELNEC core course11. There was a wide range of duration of palliative education, from two days to two years. Glover et al. (2017) conducted a 2-day ELNEC core course with pre and post ELNEC assessments. Mason et al. (2020) implemented multimodality approach for over 15 weeks, which included topics related to palliative nursing communication, grief, bereavement, pain and symptom management, loss, and final hours of life guided by end-of-life nursing consortium modules. Palliative nursing lectures were carried out for two 2 semesters. Kirkpatrick, Cantrell and Smeltzer, (2020) undertook a study during the fall semester and continued into the spring semester. The activity began with a PC lecture and continued with an end-of-life simulation-based experience. Rattani et al. (2020) organized a palliative nursing course for four semesters over a period of two years.

UNS PC education is underpinned by experiential learning theory. Experiential learning theory by Kolb's was applied to develop the curriculum. The theory focuses on the standing of the learner moving through four phases, namely abstract conceptualization, concrete experiences, reflective observation, and active experimentation10. Through these phases, each student had a 4-hour observation experience in a hospice or PC setting with a provider. Coursework involved a critical reflection on their observational experiences and an analysis of a PC case study.

A mix of both didactic/clinical and experiential educational strategies is reported. Mason et al. (2020) used a multimodality class by utilizing various learning methods, including lectures, games, simulations, computerized learning modules, small group discussions, reading, and reflection. Each student had a 4-hour observation experience with a provider in a hospital or PC setting. Assignments included reflection on their observational experiences and analysis of PC case studies. Rattani et al. (2020) applied a mixed learning method; teaching and didactic discussions face-to-face as well as synchronized online discussions among students in small groups under the supervision of the nursing faculty. Kirkpatrick, Cantrell and Smeltzer (2020) implemented a 45-minute structured initial briefing highlighting key elements of student preparation materials including principles of effective communication, teamwork and collaboration, patient advocacy, symptom management and post-mortem care. After the simulation briefing, nursing students were randomly assigned to take an active role or make observations by drawing the roles from a deck of cards. Carman et al. (2016) applied a death and dying learning bundle with a one-hour class discussion focused on students' concerns about EOL care in general, competencies and abilities to control symptoms such as pain, incontinence, dyspnea, and spiritual distress. Legal considerations for brain death diagnosis, postmortem care, and the impact of these factors on the family were included in part of this learning package. At the end of the hour, case studies were reviewed for their relation to the simulation experience. Glover et al. (2017) applied interactive learning activities through case studies and presentations.

This review shows an effectiveness of the teaching method have been evaluated using quasi-experimental designs, including: a pilot study with a pre and post quasi-experimental design6; pre- and post-intervention without control group7,9; and one-group repeated measure (pre-test/post-test) design with within-subject (knowledge and self-awareness) and between subject (active versus participant role)8. One study used a descriptive pre- and post-assessment after attending the ELNEC core course10.

Outcome measures included students' knowledge, attitude and comfort on performing palliative and end-of-life care6, students' attitude on performing end-of-life care7,9, palliative and end-of-life care knowledge10 and self-awareness outcomes in PC8.

The valuation of study outcomes was mostly measured using validated instruments

such as the FATCOD scale to assess attitudes toward care of the dying[6–9], PCQN to assess students' PC knowledge[6,8], EOL SBE scenario[8], and ELNEC guideline[10].

The positive impact of PC education, especially on attitudes, has been reported[6,7,9]. Mason et al. (2020) reported a significant change in UNS attitudes and comfort toward PC (z = 0.017, P <.05). Rattani et al. (2020) also reported substantial attitude transformation noticed on 11 of 30-FATCOD items (t-value was significant at 0.05 alpha value (one-tailed). Similarly, Carman et al. (2016) found that bundled teaching strategy led to a significant reduction in negative attitudes about discussing the death (P <.03) or being present at the time of actual death (P <.04) and providing adequate analgesia during the dying process without fear of causing addiction (P <.01). The three studies in this review also reported positive changes in the knowledge aspect as measured by PCQN[6,8,10]. Furthermore, Kirkpatrick, Cantrell and Smeltzer, (2020) reported a statistically significant increase in self-awareness in the group (M diff = 6.0; 95% CI 4.2-7.8; P <0.001) after participating in EOL SBE activity.

Discussion

The palliative learning implementation was varied across studies from multimodality approaches, simulation-based experience to high fidelity simulation. Glover et al. (2017) argued nurse educators can integrate content about palliative and end-of-life care into standard nursing curricula using ELNEC core courses. The embedded content approach can simplify the integration of PC into the curriculum without adding material that might already be extensive. Meanwhile, some authors argue that discrete courses are more beneficial as they allow better assimilation of material with students. While there is evidence of the effectiveness of both approaches in improving PCC in term of death and the care of the dying, incorporating PC content into other nursing courses or offering separate courses as elective subjects may not provide the attention it deserves for PC education. In addition, the lack of evidence of the effectiveness of separate courses over the embedded content approach requires more research.

End-of-life PC content remains unclear as to whether it should be taught at an early or later stage of nursing courses. Although it is recommended that it be given at a later stage because students already have related knowledge about PC[9], earlier application has been shown to prevent them from developing misunderstandings during clinical practice. This suggests that pronouncements about when to include PC education at the undergraduate level of nursing should be thoroughly discussed.

The combination of didactic and experiential teaching and learning strategies has been proven to be effective in improving student learning about PC. In addition, relevance provides students with occasions to care for dying patients in administered simulations and highlighted real-life circumstances, thus suggesting that the delivery of theoretical content without experience to practice is inadequate. Our review finds theory underpinning palliative education remains inconclusive; however, one of the studies which employed Kolb's Experiential Learning Theory showed significant effect on knowledge, attitude, and comfort of PC[6]. Similarly, teaching EOL care through high fidelity simulations has improved students' attitudes toward the care of dying patients and their bereaved family members[7]. Previous research has also proven that PC education at the undergraduate level of nursing is effective in enhancing the knowledge, attitudes, and skills of care for dying patients and their families[13–15]. However, the use of non-probability sampling methods and self-assessment evaluation instruments in this study may generate some bias.

Moreover, the outcomes of these studies without a control group may have been influenced by unnecessary variables. The use of small sample sizes raises methodological problems regarding representativeness and generalizability of results. Expected results in designing course objectives and evaluation strategies need to consider the insertion of cognitive, affective, and psychomotor domains. This will increase understanding of how PC education impacts UNS knowledge, attitude, and skills.

The educational strategy applied in this review was mostly implemented in resource-rich countries. Therefore, it requires adaptation when applied in resource-poor countries to bridge barriers such as the lack of specialist PC

practitioners or educators, absence of PC units in hospitals and community, and issues in access to PC textbooks, journals, and online educational materials. Further research in PC education is needed, especially the comparison of various educational strategies (both in the classroom and clinical setting) for palliative and end-of-life care to determine their strengths and weaknesses. Another learning model approach also needs to be developed to meet the challenges of PC earlier and more comprehensively.

Conclusions

A systematic review revealed that PC education is proven to be effective to improve the PCC in UNS, especially in the aspects of knowledge, attitudes, comfort, and self-awareness. PC education at the UNS level was offered either as a separate elective course or ELNEC core course. Both didactic and experiential educational strategies are used, and education is delivered to students in a variety way. Courses that are supported by experiential learning theory are shown to improve knowledge, attitudes, and comfort in PC. Simulation is the method most applied in teaching strategies since it provides opportunities for students to learn how deal with their own emotions.

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Declaration of Interest

The authors declared that did not have potential conflicts of interest concerning the research, authorship, and/or publication of this research reported.
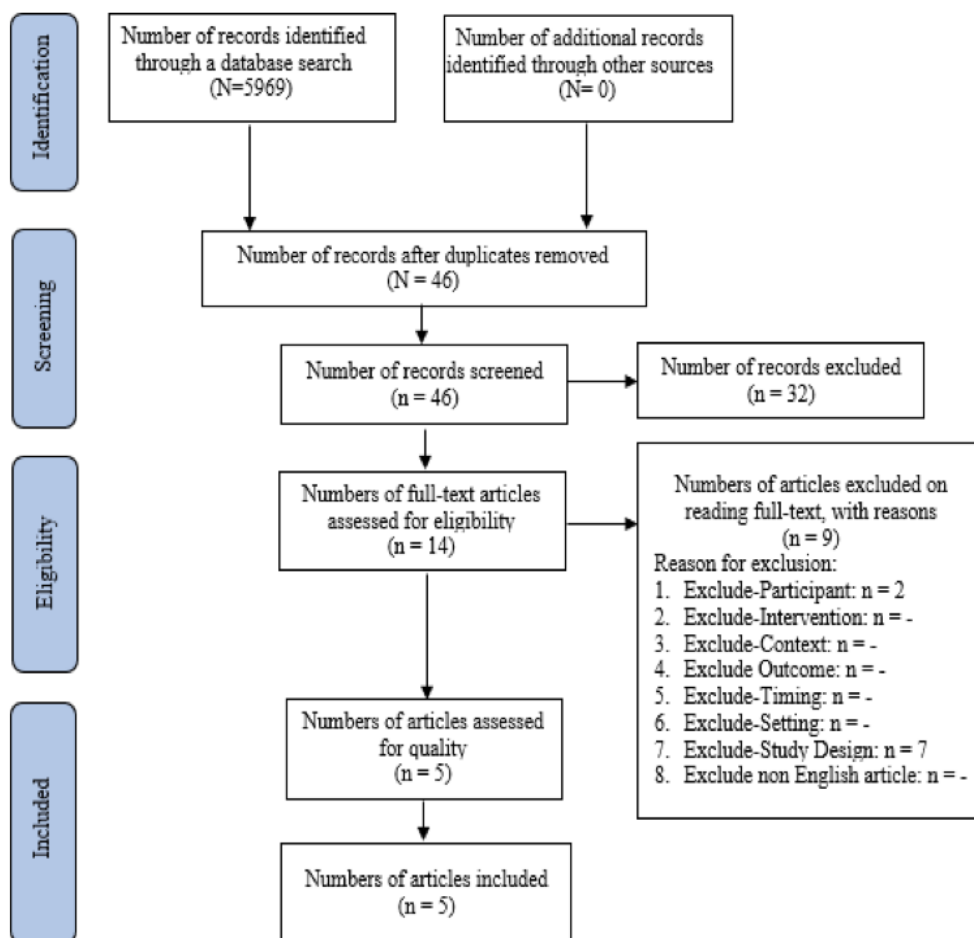

Figure 1. Article selection process.

No	Title. Author, Year	Research Methodology	Summary of findings
1	A Multimodality Approach to Learning: Educating Nursing Students in Palliative Care[6].	**Study Design:** Quasi-experimental study design. **Sample:** 18 UNS at a large Midwest University. **Variable:** IV: Educating nursing students used an interactive and multimodality PC class. DV: Nursing students' attitude, comfort, and knowledge in palliative and EOL care. **Instrument:** 1. Palliative Care Quiz for Nursing (PCQN) 2. Frommelt Attitude Toward Care of the Dying (FATCOD) scale **Analysis:** A Wilcoxon matched pairs signed rank test.	There was a statistically significant increase in aspects of knowledge, attitudes, and comfort in providing palliative care, by utilizing Kolb's Experiential Learning Theory.
2	Effectiveness of High-Fidelity Simulation in Nursing Education for End-of-Life-Care: A Quasi-experimental Design[7].	**Study Design:** A quasi-experimental design with pre- and post-intervention without control group. **Sample:** A total of 42 UNS at Aga Khan University School of Nursing and Midwifery Karachi, Pakistan. **Variable:** IV: High-fidelity simulation in Nursing Education for End-of-Life Care. DV: Attitude in participant students toward care of the dying. **Instrument:** FATCOD Part B. **Analysis:** Paired t-test	The learning method using high fidelity simulations significantly improves student attitudes towards the care of dying patients and their bereaved family members.
3	Palliative care knowledge and self-awareness in active and observing UNS after end-of-life simulation[8].	**Study Design:** A quasi-experimental one- group repeated measure (pre-test/post-test) design with within-subject (knowledge and self-awareness) and between subject (active versus participant role). **Sample:** A convenience sample of 80 traditional undergraduate BSN students. **Variable:** IV: End-of-life simulation-based experience (SBE) DV: Active and observer nursing students' PC knowledge and self- awareness. **Instrument:** EOL SBE scenario, FATCOD-B and PCQN. **Analysis:** Two separate paired sample t- tests and ANCOVA	There was a statistically significant increase in aspects of knowledge and self-awareness in all participants after the SBE
4	Implementation of a Learning Bundle to Promote End-of-Life Education for Prelicensure Nursing Students[9].	**Study Design:** A quasi-experimental design with convenience sampling. **Sample:** 62 nursing students at a large university in the southeastern United States. **Variable:** IV: A multidimensional EOL learning bundle. DV: Students' attitude toward care of the dying patients. **Instrument:** FATCOD scale **Analysis:** Two-sample t tests	The use of the EOL learning bundle can significantly improve the attitude of students in performing EOL care
5	Improving End-of-Life Care Knowledge Among Senior Baccalaureate Nursing Students[10].	**Study Design:** A descriptive pre- and post-test after attending the End-of-Life Nursing Education Consortium (ELNEC) core course. **Sample:** A total of 125 senior nursing students. **Variable:** IV: ELNEC core course. DV: Knowledge on end-of-life care. **Instrumet:** ELNEC guideline **Analysis:** McNemar test.	The results showed that students gained improved knowledge after participating in the ELNEC core course

Table 2. Studies included in this review.

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