

# The Effect of Home Care Programs on the Perceived Competence of End-of-Life Care in Nursing Students: A Quasi-Experimental Study

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## Abstract

**Background** Caring for terminally ill patients and supporting their families, along with understanding the skills required for this type of care, are among the significant emotional challenges faced by nurses. This study was conducted to determine the effect of home care programs on the perceived competence of end-of-life care in nursing students at Urmia Azad University.

**Methods** This was a single-group quasi-experimental study with a pre-test and post-test design, conducted on final-year nursing students at Urmia Azad University in 2024. The sampling involved 40 individuals. The students first completed demographic information and perceived competence questionnaires for end-of-life care. Then, the students received home care training in groups, delivered over five 60-minute sessions held twice a week (every other day). After the intervention, the questionnaires were completed again. Paired t-tests in SPSS-23 were used for statistical analysis of the data.

**Results** The majority of students were in the 21- to 25-year age group, and 36 (90%) were single. The mean score of perceived competence before the intervention was ( $116.55 \pm 10.86$ ) and after the intervention was ( $134.32 \pm 9.75$ ), which indicates a significant increase in perceived competence after the educational intervention ( $t = -8.556$  and  $P < 0.05$ ).

**Conclusion** Home care programs significantly enhance the perceived competence of nursing students, improving clinical skills, increasing self-confidence, developing communication skills, and reducing stress and burnout. Healthcare administrators can enhance nurses' understanding and competence in end-of-life care at home by developing targeted educational programs and practical workshops. Integrating theoretical and clinical training with a supportive-psychological approach and family participation can pave the way for comprehensive and dignity-based care in this sensitive area. It is recommended that healthcare authorities develop targeted educational programs and practical workshops to enhance nursing students' understanding and competence in providing end-of-life care at home. Additionally, integrating theoretical and clinical training with a supportive psychological approach and involving families can pave the way for comprehensive, dignified, and humanistic care in this sensitive field.

**Keywords** Terminal care, Home-care services, Students, Nursing, Competency, Non-randomized controlled trials as topics

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## 1 Introduction

Perceived competence is a psychological construct that reflects individuals' judgments about their ability to mobilize resources to achieve specific goals. It represents a positive self-assessment.<sup>[1]</sup> Various internal and external factors influence the development and enhancement of Self-perceived competence.<sup>[2]</sup> Competence is essential in nursing, as it ensures the quality, safety, and effectiveness of healthcare while also contributing to cost savings. Therefore, identifying core and practical competencies is critical, as they reflect the realities of patient care and professional performance.<sup>[3]</sup>

End-of-life care (EOLC) for patients and support for their bereaved families, along with understanding the competencies required for such care, represent significant emotional challenges in nursing practice.<sup>[4]</sup> In healthcare settings, professionals often focus more on saving lives or curing illnesses than on addressing the needs and wishes of dying patients. Thus, providing high-quality care at the end of life requires proper attitudes and education in the fundamentals of palliative care.<sup>[5]</sup>

Given medical advancements, healthcare professionals may assume that death is an abnormal event if proper interventions are provided. Consequently, if nurses do not accept death as a natural part of life, it may affect their emotional responses and behavior when caring for dying patients.<sup>[6]</sup> Fear of death in the workplace, particularly during nursing shifts, can alter nurses' attitudes toward caring for terminally ill patients<sup>[7]</sup>, posing a risk to their emotional and mental well-being<sup>[8]</sup> and potentially undermining the quality, professionalism, and effectiveness of care.<sup>[9]</sup> These insights are crucial for nursing managers, enabling them to strengthen coping efforts by minimizing the emotional impact of death anxiety and promoting nurses' mental health, ultimately leading to higher-quality EOL nursing care.<sup>[10]</sup> Patients with life-threatening illnesses have a fundamental right to nursing care; society must ensure the provision of high-quality services to all individuals living with life-limiting conditions, regardless of disease, age, or care setting. Since individuals and families affected by end-of-life issues are found across different environments and healthcare levels, EOLC enhancement programs must be provided to all healthcare professionals, including physicians and nurses.<sup>[1]</sup>

Home care, as one of the community-based care methods, is a key form of health care and plays a vital role in resource management. The reason is that it's one of the essential services provided in patients' home environments, with the participation of patients and their families.<sup>[4]</sup> Given that most deaths occur in hospitals, approximately 25% of hospitalized patients require end-of-life care. Therefore, prioritizing the provision

of high-quality EOLC to these patients is essential. However, there is a lack of research on the preparedness of staff to deliver EOLC in hospital settings.<sup>[2]</sup> Home care nurses adopt a holistic approach, aiming to empower patients and their families to achieve optimal physical, functional, emotional, and psychological well-being.<sup>[3]</sup> Home healthcare is a growing part of the healthcare system, developed as an alternative to expensive and specialized hospital care by promoting primary health and home-based services.<sup>[6]</sup> Globally, hospital-level care provided in patients' homes has been recognized as a safe and valuable alternative that aligns with patient-centered care policies.<sup>[7]</sup>

Several studies report that hospitalized patients often express a desire to return home, and it's associated with their recovery, independence, and sense of personal control.<sup>[8,11]</sup> Studies showed that while palliative care and geriatric professionals worldwide encourage home-based care for chronic and long-term illnesses, family caregivers frequently report psychological,<sup>[1,9]</sup> physical,<sup>[8]</sup> financial,<sup>[10]</sup> and social stressors during the caregiving process. Home care may contribute to issues such as depression, anxiety, fatigue, family strain, deterioration of physical health, and social isolation.<sup>[4,5]</sup> Thus, studying the perceived competence of medical science students and its impact on the quality of patient and family care is necessary.<sup>[5]</sup> A 2023 study by Notarnicola et al. demonstrated that nursing experience has a significant influence on nursing competencies. They recommended that nursing managers consider work experience as a measurable criterion for improving nurses' competence.<sup>[12]</sup>

Given that nurses, particularly those in intensive care units, often face challenges in communication, continuity of care, and decision-making related to perceived EOLC competencies, educational interventions to enhance these competencies are essential.<sup>[13]</sup> Since most patients at the end of life prefer to spend their final days with family, educating nursing students about home-based care and familiarizing them with the dying process may reduce healthcare costs and improve their caregiving abilities. Reviewing scientific literature by researchers revealed that there is no study conducted in Iran focusing on perceived competence in EOLC among nursing students and clinical nurses. Therefore, the present study was conducted to determine the impact of home care programs on perceived competence in EOLC among nursing students, aiming to help improve the quality of care for terminally ill patients and enhance family satisfaction.

## 2 Methods

This study was a quasi-experimental design conducted in 2024 among final-year nursing students at the Islamic

Azad University of Urmia. The sample consisted of approximately 40 nursing students, selected through a census method. Inclusion criteria included being a final-year nursing student at the clinical internship stage and providing informed consent to participate in the study. Students who declined to continue at any point were excluded from the study.

Data Collection Tools included a demographic questionnaire (encompassing age, gender, GPA, marital status, and local residency status), as well as the Perceived Competence in End-of-Life Care Questionnaire, which comprises 17 items rated on a 5-point Likert scale (1 = Not at all competent; 5 = Very competent). The total score ranges from 17 to 85 and encompasses seven domains: knowledge, attitude, decision-making, emotional support for patients and families, symptom management, spiritual support, and emotional support for staff. The questionnaire's validity was confirmed through face and content validity. Reliability was confirmed based on a previous study by Montagnini (2012), which reported a Cronbach's alpha of 0.93.<sup>[13]</sup> In the present study, internal consistency was reassessed, yielding a Cronbach's alpha of 0.98.

In this study, the researcher obtained a list of all final-year nursing students (in the internship stage) from the School of Nursing. At the beginning of the study, all participants completed the demographic and perceived competence questionnaires. The students then received home care training in groups, delivered over five 60-minute sessions held twice weekly (every other day) at Imam Khomeini and Shahid Motahari hospitals in Urmia, which are among the leading centers for medical education. Training was delivered via lectures using a video projector in small groups of 6–7 students. Questions were answered during the sessions. After the intervention, participants completed the same questionnaires again. A detailed overview of the intervention protocol, including session topics, objectives, and intervention activities, is presented in [Table 1](#).

Data were analyzed using SPSS version 23. Descriptive statistics (mean  $\pm$  standard deviation, frequency, and percentage) were used to summarize demographic characteristics. The Shapiro–Wilk test was employed to assess the normality of quantitative data. A paired t-test was used to compare perceived competence scores before and after the intervention. A significance level of  $p < 0.05$  was considered statistically significant.

**Table 1** Training Protocol for Home Care Education: Sessions, Objectives, and Methods

Session	Topic	Objective	Intervention Activities
Session 1	Multilateral assessment and pain management in EOLC	Comprehensive assessment and developing a personalized care plan based on identified palliative needs	<ul style="list-style-type: none"> <li>- Identification of palliative care needs</li> <li>- Comprehensive palliative assessment</li> <li>- Development of a personalized care plan aligned with needs</li> </ul>
Session 2	Use of logotherapy in EOL care and bereavement	Communicate clearly and accessibly with patients and families	<ul style="list-style-type: none"> <li>- Informing the patient and/or family of clinical status</li> <li>- Exploring patient preferences for information</li> <li>- The family's preferences regarding the information provided to them and the patient are considered, and there must be no confidentiality regarding the patient's health.</li> <li>- The patient and/or family are informed about clinical issues.</li> </ul>
Session 3	Hypnotherapy for psychosomatic symptom management	Request and document care instructions	<ul style="list-style-type: none"> <li>- Verification of documentation reflecting patient preferences</li> <li>- Assessing decision-making priorities in cognitively intact patients</li> <li>- Providing information on pain control, diet, GI issues, activity, etc.</li> <li>- The advance care directive document is discussed with the patient and/or family.</li> <li>- The advance care directive document is completed.</li> <li>- Decisions made are reported.</li> </ul>
Session 4	Creative approaches to grief counseling	Deliver primary care with sensitivity to loss and mourning	<ul style="list-style-type: none"> <li>- Encouraging family participation in care</li> <li>- Fostering communication between residents and families</li> <li>- Identifying risks for complicated grief</li> <li>- Respecting the patient's spiritual needs</li> </ul>
Session 5	Supporting children facing the impending death of their grandparents	If necessary, refer patients to a specialized palliative care unit, depending on the complexity of the palliative care required.	<ul style="list-style-type: none"> <li>-The nursing home prioritizes the provision of specialized palliative care resources.</li> <li>- The priority for providing these resources is based on the palliative care needs of the residents and the complex aspects of palliative care.</li> <li>- There is a procedure for requesting the provision of specialized palliative care resources.</li> <li>- Interventions and recommended care are provided by the support team and re-evaluated as necessary or recommended by the situation.</li> </ul>

### 3 Results

Among the nursing students who participated in the study, 20 (50%) were female and 20 (50%) were male. The majority were within the age range of 21 to 25 years. Furthermore, 36 participants (90%) were single, and 31 students (51.7%) were native to the region. Demographic characteristics of the nursing students are presented in Table 2.

**Table 2** Demographic characteristics of nursing students

Item	Variable	Frequency (%)
<b>Gender</b>	Male	20 (50.0%)
	Female	20 (50.0%)
<b>Marital Status</b>	Single	36 (90.0%)
	Married	4 (10.0%)
<b>GPA*</b>	Mean	18.21
	SD	0.82
<b>Local Residency</b>	Local	31 (51.7%)
	Non-local	9 (15.0%)

\*GPA: Grade Point Average

(4.52 ± 0.598) (Table 3).

### 4 Discussion

This study aimed to determine the effect of a home care training program on nursing students' perceived competence in providing end-of-life care (EOLC). The findings revealed that the implementation of home care education significantly improved students' perceived competence in EOLC. Patients at the end of life often require more humanistic and emotional support than pharmacological interventions. Humanistic care adopts a holistic approach, addressing all aspects of the individual's existence.<sup>[14]</sup> In this regard, Jonathan Hackett (2014) emphasized the necessity of holistic care for patients at the end of life in his study conducted in the United Kingdom.<sup>[15]</sup> Similarly, a study by Aghaei et al.<sup>[16]</sup> (2017) indicated that nurses generally hold a positive attitude toward end-of-life care and recognize the necessity of emotional and supportive care for both patients and their families.

**Table 3** Comparison of perceived competence scores before and after the educational intervention.

Domain of Perceived Competence	Intervention	Mean (SD)	t-value	p-value
Knowledge	Before	43.82 ± 4.91	-7.30	< 0.001
	After	50.00 ± 3.95		
Attitude	Before	16.40 ± 1.98	-8.364	< 0.001
	After	19.32 ± 2.10		
Decision-making	Before	14.07 ± 2.04	-5.728	< 0.001
	After	16.10 ± 1.82		
Emotional support for patients/families	Before	11.20 ± 1.71	-7.198	< 0.001
	After	13.05 ± 1.41		
Symptom management	Before	24.10 ± 2.90	-5.509	< 0.001
	After	27.30 ± 2.88		
Spiritual support	Before	3.95 ± 0.552	-6.618	< 0.001
	After	4.52 ± 0.598		
Emotional support for staff	Before	3.00 ± 1.26	-5.363	< 0.001
	After	4.025 ± 0.919		
Overall perceived competence	Before	116.55 ± 10.86	-8.556	< 0.001
	After	134.32 ± 9.75		

The findings of the study revealed statistically significant differences in the mean scores of perceived competence in all domains before and after the home care educational intervention including: knowledge, attitude, decision-making, emotional support for patients and families, symptom management, spiritual support, and emotional support for staff (p values < 0.001). Additionally, the total score for perceived competence showed a significant increase post-intervention (t = -8.556, p < 0.001). Among the domains, the highest post-intervention mean score was observed in the knowledge domain (50.00 ± 3.95), while the lowest scores were recorded in emotional support for staff (4.025 ± 0.919) and spiritual support

They emphasized that caring for terminally ill patients and establishing reciprocal communication with them is a valuable experience and that preparing patients for death is essential.<sup>[16]</sup> Khajehmirzaei et al. (2020) also reported a positive attitude among critical care nurses towards end-of-life care.<sup>[17]</sup> In another study, Jafary gol et al. (2021) identified home care competence as one of the essential components of comprehensive nursing care. They argued that such competence enables nurses to assess their professional performance, identify areas requiring improvement, and ultimately lead to higher-quality care, greater patient and family satisfaction, and a foundation for developing educational programs.<sup>[18]</sup>

The existence of such competence in the field of knowledge may increase awareness among caregivers and families about end-of-life care and also help improve the quality of care and reduce anxiety and concerns associated with this period. Aldridge (2016) reported that healthcare professionals who received EOL education felt an increase in their knowledge and a stronger sense of competence in providing care.<sup>[19]</sup>

Nurses delivering end-of-life care should be sensitive to patients' cultural and religious values, individual preferences, and human dignity. Studies by Dong et al. (2016) in China and the systematic review by López et al. (2015) emphasized the importance of respecting patient values during EOLC.<sup>[20,21]</sup> Belief in personal values and spiritual frameworks can shape the care experience and influence how patients respond to interventions. Such care promotes satisfaction and a dignified death, which are central goals of end-of-life care. In the study by Jung et al. (2020), the lowest score was for spiritual care, which is consistent with the findings of the present study.<sup>[22]</sup> Addressing the spiritual needs of patients and families can help them cope more effectively with the challenges of end-of-life transitions.

Satsin et al. (2017) noted that palliative care knowledge, particularly in symptom and pain management, was positively correlated with most competence components in providing palliative care, except for spiritual support and continuity of care.<sup>[23]</sup> It appears that nurses, especially those in emergency settings, who possess greater knowledge of symptom management, perceive themselves as having higher competence in delivering palliative care. Effective management of physical and psychological symptoms in terminal patients contributes to improved quality of life and alleviation of suffering. Home-based care not only enables patients to spend their final days in a familiar and supportive environment but also empowers caregivers by enhancing their sense of competence and preparedness in delivering EOLC.

## 5 Conclusion

Home care programs can significantly enhance nursing students' perceived competence in end-of-life care. These findings underscore the importance of integrating such programs into nursing education curricula, as they provide valuable opportunities for experiential learning, enhance communication and empathy skills, increase confidence in dealing with death and ethical dilemmas, and encourage self-reflection and lifelong learning. Such experiences can enable nursing students to deliver higher-quality end-of-life care and contribute more effectively to health promotion. Given that home is often a safe and preferred environment for many patients in the final stages of life, and that they wish to spend their last days with their families, developing home care education

for nursing students and familiarizing them with the process of dying can reduce healthcare system costs and enhance students' caregiving competence. Therefore, it is recommended that healthcare administrators develop targeted training programs and practical workshops to improve nurses' understanding and competence in delivering end-of-life care at home.

Additionally, integrating theoretical and clinical training with a supportive-psychological approach, involving families in the process, may lead to comprehensive and dignified care in this sensitive area. As this study was limited to nursing students from a single university, the generalizability of the results may be limited. Future longitudinal studies are recommended to evaluate the long-term effectiveness of training, compare student performance across different institutions, design blended educational programs (including simulations and virtual training), and assess the influence of cultural and religious factors on the quality of end-of-life care, with the active engagement of students, families, and healthcare staff.

The current study was limited to nursing students at a single university; the generalizability of the results may be limited. Therefore, it is recommended that long-term studies be conducted to measure the sustainability of the training effects, compare student performance in different training centers, design hybrid training programs (simulation, virtual training), and examine the role of cultural-religious factors on the quality of end-of-life care with the tripartite participation of students, families, and medical staff. Given that no study in Iran has examined the effect of home care programs on nursing students' perceived competence in end-of-life care, it is hoped that the results of this study will inform the improvement of nursing students' caregiving abilities and the inclusion of an end-of-life care course unit in the nursing curriculum.

## Declarations

### Acknowledgments

This study, approved by the Ethics Committee of Islamic Azad University, Urmia Branch, is based on a Master's thesis in Nursing. The authors gratefully acknowledge the Vice Chancellor for Research, participating students, and hospital staff.

### Authors' Contributions

All authors contributed to the initial idea generation, study design, data collection, and manuscript drafting. All authors have read and approved the final version of the manuscript and declare no disagreement over its contents.

### Availability of Data and Materials

The data and materials used in this study are available from the corresponding author upon reasonable request.

### Conflict of Interest

The authors declare that they have no conflict of interest.

**Consent for Publication**

All authors have read and approved the final manuscript and provided their consent for publication.

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**Ethical Considerations**

This study was approved by the Ethics Committee of the Faculty of Medical Sciences, Islamic Azad University of Urmia, under the code: IR.IAU.URMIA.REC.1403.069.

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