

# *Research on the Cognitive Status of Hospice Care among Undergraduate Nursing Students: A Cross-Sectional Survey*

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**Abstract:** This study aimed to investigate the cognitive level of Hospice Care and its influencing factors among undergraduate nursing students in Hunan Province, China, to provide a basis for optimizing the Hospice Care education system and enhancing its quality. From December 2024 to January 2025, a random sample of full-time undergraduate nursing students from two universities in Hunan Province was selected as study participants. Data were collected via Wenjuanxing using a general information questionnaire and the Nurses' Hospice Care Knowledge Scale (NHKS). A total of 542 questionnaires were distributed, with 486 valid responses returned, yielding an effective response rate of 89.7%. The mean Hospice Care knowledge score among nursing undergraduates was  $20.15 \pm 6.46$ . Low scores were observed in the domains of Overview, Comfort Care, and Symptom Management. Personal gender, grade, hospital internship experience and other factors were statistically different ( $P < 0.05$ ). The findings suggest that while nursing undergraduates in Hunan Province possess a moderate-to-high overall awareness of Hospice Care, significant variations exist across knowledge dimensions. The highest scoring rate was observed in the Family Care dimension (88.99%), whereas the lowest was in the Comfort Care dimension (31.58%). It is recommended that nursing institutions prioritize enhancing theoretical knowledge and implement targeted, dynamic educational strategies to comprehensively improve students' cognitive competence in Hospice Care.

## 1. Introduction

A 'Good Death' represents the pursuit of quality of life and dignity. Hospice Care provides terminally ill patients with physical, psychological, spiritual care, and humanistic support during their final stages of life. Its aims are to control distressing symptoms, enhance quality of life, and assist patients in passing away comfortably, peacefully, and with dignity, while also providing

comprehensive support to their families<sup>[1]</sup>. With the accelerating aging of China's population, the rising incidence of incurable chronic diseases, and increasing public demand for higher quality of life, the need for Hospice Care has surged dramatically. Although the Chinese government has introduced supportive policies for Hospice Care development over the past decade, it remains substantial given China's vast population. Undergraduate nursing students, as the future core workforce for providing Hospice Care services, possess levels of Hospice Care knowledge that directly impact the quality of care they will deliver. Therefore, this study employs a questionnaire survey to conduct an in-depth analysis of the current state of Hospice Care knowledge among undergraduate nursing students and its underlying influencing factors. The findings aim to establish a theoretical foundation for developing advanced Hospice Care curricula for nursing professionals, thereby enhancing the cultivation of Hospice Care expertise within higher education institutions.

## **2. Methods**

### **2.1. Study Subjects**

This study utilized a convenience sampling method to recruit full-time undergraduate nursing students from two universities in Hunan Province as participants.

### **2.2. Research Tools**

A questionnaire survey was employed, consisting of two parts:

(1) General Information Questionnaire: This section included items such as class, age, gender, and internship experience.

(2) The Nurses' Hospice Care Knowledge Scale: This scale was developed by Chinese scholars Shen Yang et al. in 2020. It comprises 34 items across 7 dimensions: Overview, Comfort Care, Symptom Management, End-of-Life Communication and Psychological Care, Spiritual Care, Ethical Aspects, and Family Care. The scale demonstrated high reliability, with a Cronbach's alpha coefficient of 0.947, and good content validity, with a Scale-Content Validity Index (S-C VI) of 0.92<sup>[2]</sup>.

### **2.3. Research Methods**

Data collection via online survey platform required researchers to explicitly state the survey purpose and obtain electronic informed consent before distributing questionnaires. Anonymous responses were restricted to one submission per participant to ensure data validity. Participation was voluntary with mandatory truthfulness in responses. A dual verification mechanism was implemented for data cleaning of the 542 initial questionnaires. After this rigorous cleaning process, 486 valid questionnaires were retained, yielding an effective response rate of 89.7%.

### **2.4. Statistical Methods**

Data entry and analysis were performed using SPSS software (version 27.0) on the screened data set. Measurement data were described using mean  $\pm$  standard deviation (SD). Independent samples t-tests and one-way analysis of variance (ANOVA) were used to compare Hospice Care knowledge scores among students with different characteristics. A p-value of less than 0.05 ( $P < 0.05$ ) was considered statistically significant.

### 3. Results

#### 3.1. Demographic Characteristics of Undergraduate Nursing Students

This study included 486 eligible participants: 377 females (78%) and 109 males (22%); 428 Han Chinese (88%); 226 rural students (47%); 231 with family incomes below 50,000 CNY (48%); 337 self-reporting good health (69%); 200 freshmen (41%); 332 with a neutral attitude towards nursing (68%); 396 without hospital internship experience (82%); 392 without medical-related social practice experience (60%); 476 without history of severe illness (92.6%); 150 with relatives suffering from severe illness (29.17%); 194 with experience of witnessing a relative's death (40%); 35 with history of contact with critically ill patients (7%); 145 with experience in handling deceased patients (30%); 390 with experience of attending funeral ceremonies (80%); 35 with experience in caring for terminally ill patients (7%).

#### 3.2. Current State of Hospice and Palliative Care Education for Undergraduate Nursing Students

Survey results indicate that 238 students (51%) were unfamiliar with Hospice Care. 236 students (48.6%) learned about Hospice Care through online sources, while only 56 students (11.5%) accessed audiovisual resources. 373 students (76.7%) received Hospice Care education via the Introduction to Nursing course, whereas merely 59 students (12.1%) studied it through dedicated Hospice Care courses. Most students identified current issues in Hospice Care education: Over reliance on theoretical teaching with insufficient practical training; Dominance of traditional lecture-based methods lacking interactive communication between instructors and students.

#### 3.3. Status of Hospice Care Knowledge among Undergraduate Nursing Students

The total possible score of the NHKS was 34. The mean score was  $20.15 \pm 6.46$ . The top three dimensions by mean scoring rate were Family Care, Ethical Aspects, and End-of-Life Communication & Psychological Care (Table 1).

Table 1: Dimension Scores of the NHKS.

Dimension	Possible Score	Min Score	Max Score	Mean Score	Scoring Rate (%)
Overview	0–3	0	3	$1.84 \pm 0.81$	61.39%
Comfort Care	0–7	0	7	$2.53 \pm 1.42$	31.58%
Symptom Management	0–10	0	10	$5.74 \pm 2.72$	52.19%
End-of-Life Comm. & Psychological Care	0–5	0	5	$4.14 \pm 1.54$	82.72%
Spiritual Care	0–3	0	3	$2.36 \pm 1.03$	78.67%
Ethical Aspects	0–2	0	2	$1.77 \pm 0.59$	88.37%
Family Care	0–2	0	2	$1.78 \pm 0.57$	88.99%

The three highest-scoring items were: "Nurses should address the psychological needs of family members, guiding and assisting them in daily patient care" (91.15%), "In Hospice Care, nurses must fully consider the patient's ethnicity, culture, beliefs, and values to develop individualized care plans" (89.71%), and "The center, model, and main content of Hospice Care practice" (87.45%). The three lowest-scoring items were: "In supine position, pressure injuries are prone at occupant, macron, sacrum, and heels" (6.8%), "The primary issue with long-term morphine analgesia" (7.8%), and "For thick sputum, airway humidification temperature should be 18–22 °C" (8.2%).

##### 3.3.1. Uni-variate Analysis of Scores

Table 2 shows statistically significant differences ( $P < 0.05$ ) in NHKS scores based on gender,

academic year, hospital internship experience, medical-related social practice/volunteering, history of contact with critically ill patients, experience handling deceased patients, and experience caring for terminally ill patients. Female students scored significantly higher than males. Freshmen scored significantly lower than other years. Students with internship experience scored higher than those without. Students with medical-related social practice/volunteering scored higher than those without. Students with experience caring for terminally ill patients scored significantly higher.

Table 2: Comparison of Hospice Care Knowledge Scores by Characteristics.

Item	Score (Mean $\pm$ SD)	Statistic (t/F)	P-value
Gender		1.568 (t)	0.028
Male	18.95 $\pm$ 6.93		
Female	20.50 $\pm$ 6.28		
Academic Year		4.644 (F)	<0.001
Freshman (Year 1)	17.44 $\pm$ 7.08		
Sophomore (Year 2)	20.19 $\pm$ 6.43		
Junior (Year 3)	22.60 $\pm$ 4.27		
Senior (Year 4)	23.66 $\pm$ 3.88		
Hospital Internship Experience		42.47 (t)	<0.001
Yes	23.67 $\pm$ 3.81		
No	19.35 $\pm$ 6.72		
Medical-related Volunteering		1.454 (t)	0.037
No	19.65 $\pm$ 6.49		
Yes	20.90 $\pm$ 6.36		
Personal History of Serious Illness		0.632 (t)	0.475
No	20.21 $\pm$ 6.43		
Yes	19.40 $\pm$ 6.95		
Contact with Critically Ill Patients		13.199 (t)	<0.001
No	19.32 $\pm$ 6.69		
Yes	22.16 $\pm$ 5.38		
Handled Deceased Patients		8.209 (t)	0.004
No	19.87 $\pm$ 6.59		
Yes	22.64 $\pm$ 4.59		
Cared for Terminally Ill Patients		2.400 (t)	0.032
No	19.98 $\pm$ 6.52		
Yes	22.40 $\pm$ 5.24		

Note: P<0.05 indicates statistical significance.

## 4. Discussion

### 4.1. Analysis of Hospice Care Knowledge Status

Hospice Care in China is developing. As future primary providers, nursing students' knowledge level directly impacts service quality [3]. Among 486 participants, the mean NHKS score was 20.15  $\pm$  6.46, indicating moderate-to-high knowledge. The "Comfort Care" dimension scored lowest, likely due to limited clinical experience and lack of dedicated courses/practical training. Schools should adjust curricula to strengthen Hospice Care content and practice. The highest score in "Family Care" suggests students can effectively address family needs. Items with the lowest correctness (e.g., pressure injury prevention, morphine side effects, airway humidification) require focused teaching. The finding that 51% were unfamiliar with Hospice Care highlights the lack of systematic education in universities.

## **4.2. Analysis of Influencing Factors on Hospice Care Knowledge**

Scores were significantly influenced by gender, academic year, internship experience, medical-related volunteering, history of contact with critically ill patients, experience handling deceased patients, and experience caring for terminally ill patients.

### **4.2.1. Gender**

Female students scored higher. This may reflect greater conscientiousness, positive academic attitudes, and stronger motivation among female students<sup>[4]</sup>, leading to better knowledge retention. Additionally, female students' heightened empathy enables better understanding of patient suffering and application of hospice principles<sup>[5]</sup>. Educators should leverage female students' strengths through group activities to motivate male students<sup>[6]</sup>.

### **4.2.2. Academic Year**

Freshmen and sophomores scored lower than juniors and seniors, likely due to cumulative knowledge and advanced cognitive skills in higher years. Educators should structure Hospice Care content progressively for lower-year students<sup>[6]</sup>.

### **4.2.3. Hospital Internship Experience**

Students with internship experience scored higher. Direct patient exposure broadens understanding of hospice applicability and unique needs<sup>[7]</sup>. Close contact with terminally ill patients and families fosters deep appreciation of hospice's role in quality of life, which is absent without clinical experience.

### **4.2.4. Medical-Related Social Practice/Volunteering**

Participants with such experience scored higher. Volunteering provides direct patient/family interaction and practical hospice experience, deepening conceptual understanding. Collaboration with multidisciplinary teams enhances learning. Are-activity training also boosts theoretical and practical knowledge.

### **4.2.5. History of Contact with Critically Ill Patients**

Students with this history scored higher. Managing complex care for critically ill patients builds practical experience, fostering a deeper grasp of hospice operations and importance. This environment accelerates skill acquisition in symptom management and interdisciplinary collaboration.

### **4.2.6. Experience Handling Deceased Patients**

Students with this experience scored higher. Confronting death reinforces understanding of life's definite and hospice's value<sup>[8]</sup>. Practical tasks (e.g., post-mortem care, family support) build skills and knowledge. Reflection on life's meaning and nursing's purpose also motivates self-directed learning.

### **4.2.7. Experience Caring for Terminally Ill Patients**

Students with this experience scored higher. Providing end-of-life care enhances empathy, emotional resilience, and understanding of patient/family needs. Hands-on experience in pain management and psycho-social support builds skills. Confronting mortality also improves psychological readiness to accept hospice philosophy.

## 4.3. Recommendations

### 4.3.1. Optimizing Curriculum Design

Over half of students lacked Hospice Care knowledge, and most schools lack dedicated courses. As future practitioners<sup>[9]</sup>, nursing students need structured classroom learning<sup>[10]</sup>. Currently, few Chinese nursing programs offer hospice courses, and content lacks standardization<sup>[11]</sup>. Universities should integrate core hospice concepts, knowledge, and skills into curricula<sup>[12]</sup>. Given score variations by year, introduce foundational concepts (e.g., principles, ethics) in freshman courses like "Fundamentals of Nursing." Offer specialized courses for seniors covering pain management, communication, and case studies. Develop electives (e.g., death education, grief counseling) to broaden perspectives.

### 4.3.2. Improving Teaching Methods

Given higher scores among females, schools should encourage male participation to boost interest. Schools and educators should employ case-based learning to contextualize knowledge, use clinical simulations to train communication and response skills<sup>[4]</sup>, and invite hospice experts for lectures. They must also increase practical training by partnering with institutions to provide internships<sup>[13]</sup>. Clinical rotations during internships enhance confidence in complex symptom management and interdisciplinary teamwork<sup>[14]</sup>. Schools should enhance students' awareness and competence in hospice care by engaging them in practical tasks such as symptom management, psychological support, and family communication.

## 5. Conclusion

Undergraduate nursing students in Hunan Province possess moderate-to-high Hospice Care knowledge overall, but scores are low in Comfort Care, Symptom Management, and Overview. Knowledge levels are influenced by gender, academic year, internship experience, medical-related volunteering, contact with critically ill patients, experience handling deceased patients, and experience caring for terminally ill patients. Universities should implement diversified strategies tailored to gender, year, and experience to comprehensively enhance knowledge and cultivate future professionals.

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