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A Cross-Sectional Study on Palliative Care Knowledge and Attitudes Toward Death Among Vocational Nursing Students

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Abstract: ***This study investigates the current state of hospice care knowledge, attitudes toward death, and attitudes toward hospice care among nursing students at Guangzhou Huaxia Vocational College. A total of 320 valid questionnaires were collected for analysis. The results indicate that nursing students possess a good understanding of hospice care knowledge; however, there are significant gaps in their comprehension of the principles and scope of palliative care. Additionally, the students demonstrate a natural acceptance of death alongside some degree of fear, while exhibiting a generally positive attitude toward providing compassionate care in hospice settings. The study recommends strengthening the integration of theory and practice in hospice care education to enhance the professional competence of nursing students, enabling them to better address the needs of patients at the end of life.***

Keywords: Hospice care, Attitudes toward death, Nursing education**.**

1. Introduction

As awareness of hospice care continues to grow in society, the demand for such services is increasing significantly. The level of knowledge and attitudes toward hospice care among nursing students is crucial for the future development and implementation of these services. Hospice care involves not only the management of patients' physical symptoms but also a comprehensive focus on their psychological, social, and spiritual needs. This study aims to investigate the current state of hospice care knowledge, attitudes toward death, and attitudes toward hospice care among nursing students at Guangzhou Huaxia Vocational College through a cross-sectional survey.

The research employs a stratified sampling method and utilizes a self-designed questionnaire to collect general demographic data from the nursing students, alongside scales measuring hospice care knowledge, attitudes toward death, and attitudes toward hospice care. Statistical analysis of 320 valid questionnaires reveals the level of knowledge nursing students possess in the field of hospice care and their attitudes toward death, providing valuable insights for future nursing education and clinical practice.

In the current healthcare environment, enhancing nursing students' knowledge and attitudes regarding hospice care is not only beneficial for improving patients' quality of life but also contributes to the professional development and mental well-being of healthcare providers. Therefore, a deeper understanding of nursing students' current status and the relationship between their knowledge and attitudes is essential for promoting the reform and advancement of hospice care education [1].

2. Study Population

This study employed a stratified sampling method, targeting nursing students at a vocational college in Guangzhou. A cross-sectional survey was conducted from May to August 2024, utilizing the Questionnaire Star platform to create an electronic survey assessing the knowledge of hospice care, attitudes toward death, and attitudes toward hospice care among nursing students. The survey link was disseminated via a QR code sent through WeChat.

2.1 Inclusion and Exclusion Criteria

Inclusion Criteria: Nursing students from vocational colleges who provided informed consent and voluntarily participated in the study.

Exclusion Criteria: Students who had not yet been exposed to nursing coursework (specifically, first-year students from high school backgrounds).

2.2 Sample Size Estimation

Based on the sample size estimation methods for multifactor studies [2], this research included 18 general demographic factors such as gender, grade level, and whether the student is an only child. The item "awareness of hospice care" was excluded from analysis as it was more comprehensively addressed within the hospice care knowledge scale, leaving 17 demographic factors for analysis. The independent variables included hospice care knowledge and attitudes toward death. The hospice care knowledge scale encompassed three dimensions: principles of hospice care, pain and symptom management, and psychosocial support. The attitudes toward death scale included five dimensions: fear of death, death avoidance, natural acceptance, approaching acceptance, and fleeing acceptance, totaling 25 variables.

To ensure adequate statistical power, the sample size was calculated to be 5 to 10 times the number of variables, accounting for a 20% rate of invalid responses. This resulted in a recommended sample size of 157 to 313 participants. Considering practical operational factors, a final sample size of 320 participants was included, which is sufficient to meet

the requirements for statistical analysis.

3. Research Methods

3.1 Research Instruments

3.1.1 General Demographic Questionnaire

This questionnaire includes questions on gender, grade level, family residence, whether the student is an only child, educational background, attitude toward the nursing profession, religious beliefs, hospital internship experiences, formal employment in healthcare, experience caring for terminally ill patients, personal history of serious illness, family history of serious illness, contact with critically ill patients, experience with deceased patients, encounters with the death of relatives, participation in memorial services, history of antidepressant use, and awareness of hospice care.

3.1.2 Palliative Care Knowledge Scale (PCQN)

The Palliative Care Quiz for Nursing (PCQN) was developed by Professor Ross and colleagues in Canada in 1996 [3]. This user-friendly instrument was adapted into Chinese by domestic scholar Zou Min [4]. The PCQN is primarily used to assess healthcare professionals' knowledge of hospice care, compare knowledge levels across various dimensions, evaluate the effectiveness of hospice care education programs, and identify common errors in hospice care knowledge. The scale covers three dimensions: principles of hospice care, pain and symptom management, and psychosocial support, comprising a total of 20 items. Each correct answer scores 1 point, while incorrect or "don't know" responses score 0 points. A higher score indicates better knowledge of hospice care. In this study, the Cronbach's alpha coefficient for the scale was 0.848, demonstrating good reliability.

3.1.3 Attitudes Toward Care of the Dying Scale (FATCODS)

Developed by Dr. Frommelt in the United States in 1989 and subsequently revised multiple times [5], the FATCODS consists of two forms: Form A, which measures the attitudes of nurses toward end-of-life care, and Form B, which can be used for healthcare professionals and medical students, including nurses. This scale assesses attitudes toward caring for terminally ill patients and includes two dimensions: positive attitudes toward end-of-life care and overall care awareness. The version used in this study was adapted into Chinese by Meng Zhaoxia [6] and consists of 30 items, with 15 positively scored items and 15 negatively scored items. Positive items include questions 1, 2, 4, 10, 12, 16, 18, 20, 21, 22, 23, 24, 25, 27, and 30, while the remaining items are negatively scored. Responses are measured on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree," with positive items scoring from 1 to 5 and negative items scoring from 5 to 1. Higher scores indicate a more positive attitude toward hospice care and a greater willingness to engage in hospice practices [7]. This scale has been widely used to survey undergraduate nursing students, interns, and vocational nursing students [8-10], demonstrating good reliability and validity. In this study, the overall Cronbach's alpha coefficient and the coefficients for each dimension were mostly above 0.7, indicating acceptable reliability.

3.1.4 Death Attitude Profile—Revised (DAP-R)

The Death Attitude Profile—Revised (DAP-R) was developed and revised by Wong [11] et al. to assess nursing students' attitudes toward death. This scale encompasses five dimensions: fear of death, death avoidance, natural acceptance, approaching acceptance, and fleeing acceptance. It measures both negative attitudes, such as fear of death and death avoidance, and positive acceptance of death, thereby avoiding the limitations of single-dimensional assessments. In this study, the DAP-R was adapted into Chinese by Tang Lu. Fear of death refers to the negative emotions and psychological states of fear experienced when confronted with death and includes 7 items (items 1, 2, 7, 18, 20, 21, and 32). Death avoidance involves psychologically avoiding thoughts or discussions related to death, comprising 5 items (items 3, 10, 12, 19, and 26). Natural acceptance views death as a natural part of life, without fear or rejection, and includes 5 items (items 6, 14, 17, 24, and 30). Approaching acceptance sees death as a pathway to a joyful afterlife, with 10 items (items 4, 8, 13, 15, 16, 22, 25, 27, 28, and 31). Fleeing acceptance refers to a desire to end a painful life due to suffering, comprising 5 items (items 5, 9, 11, 23, and 29). A 5-point Likert scoring system is used, with higher scores indicating a stronger tendency toward that dimension of death attitude. In this study, the Cronbach's alpha coefficient for the scale was 0.927, with all dimensions exceeding 0.7, indicating high internal consistency and reliability.

3.2 Quality Control

3.2.1 Questionnaire Collection Phase

Pilot Survey: Prior to the official distribution of the questionnaire, a pilot survey was conducted by distributing 20 questionnaires. Responses that took less than 90 seconds to complete were excluded from the final analysis. Participants were also asked to provide feedback on any ambiguous or unclear items, which helped formulate clarifications to resolve any confusion.

Guidance from Faculty: The counselors and full-time faculty members were instructed to explain the significance and methodology of the study, as well as to highlight any ambiguities in the measurement tools. They assisted in guiding participants on how to complete the questionnaire effectively.

Electronic Questionnaire Design: Each item in the electronic questionnaire was set as "single choice" and marked as "required" to prevent incomplete submissions. Each mobile account was limited to one submission to avoid duplicate responses. Questionnaires where more than 95% of the answers on any single scale were identical were excluded from analysis.

3.2.2 Data Statistical Phase

The collected questionnaires were thoroughly checked and organized. Invalid questionnaires were removed, and the valid ones were assigned identification numbers before being imported into SPSS 26.0 for analysis. Two researchers cross-verified the data in the database with the original

questionnaire data to ensure consistency and accuracy in data entry.

4. Survey Method

This study primarily utilized an online approach to distribute questionnaires through counselors and full-time faculty members across various grade levels via WeChat. The first page of the questionnaire included standardized instructions outlining the purpose and significance of the study, as well as guidance on how to complete the questionnaire, ensuring informed consent from participants. Participants completed the questionnaire anonymously online, with all items marked as "required." Each IP address was restricted to one submission to ensure the completeness of responses and to prevent issues such as omissions or duplicate entries. The questionnaires were distributed using a survey platform, resulting in a total of 503 responses collected.

The collected responses were filtered according to two established criteria: first, any questionnaire completed in less than 90 seconds was excluded; second, any questionnaire where more than 95% of the answers were identical was also removed. Ultimately, 320 valid questionnaires were retained, yielding an effective response rate of 63.6%.

5. Reliability Analysis

This study employed the Cronbach's alpha coefficient to assess the reliability of the Death Attitude Profile—Revised (DAP-R) and the Attitudes Toward Care of the Dying Scale (FATCOD-A). Generally, a Cronbach's alpha coefficient above 0.9 indicates excellent reliability, between 0.8 and 0.9 indicates good reliability, between 0.7 and 0.8 indicates acceptable reliability, and below 0.7 suggests that the scale requires revision. The SPSS results for the reliability of the DAP-R and FATCOD-A are as follows:

Table 1: Reliability Analysis

Scale	Dimension	Cronbach's Alpha	No. of Items
DAS	DF	0.846	7
	DA	0.778	5
	NA	0.788	5
	ApA	0.9	10
	EA	0.861	5
	Overall (K)	0.927	32
PCAS	Att	0.731	17
	HCA	0.756	13
	Overall (Att)	0.648	30

Abbreviation Notes:
DAS: Death Attitude Scale,
DF: Death Fear Dimension
DA: Death Avoidance Dimension
NA: Natural Acceptance Dimension
ApA: Approach Acceptance Dimension
EA: Escape Acceptance Dimension
K: Overall Death Attitude Scale
PCAS: Palliative Care Attitude Scale
Att: Positive Attitude Toward End-of-Life Care
HCA: Holistic Care Awareness
Overall (Att): Overall Palliative Care Attitude Scale

The reliability analysis of the Death Attitude Profile—Revised (DAP-R) and the Attitudes Toward Care of the Dying Scale (FATCOD-A) showed that most scales and their individual dimensions had a Cronbach's alpha coefficient greater than 0.7, indicating high internal consistency and homogeneity. Validity refers to the degree to which a measurement tool accurately captures the intended construct [11]. It mainly assesses the accuracy, effectiveness, and correctness of the research tools, specifically the magnitude of deviation between measured values and the true values of the construct [12]. Common validity indicators include content validity and construct validity. Given that the original scales have undergone multiple validations, they are considered to possess good content validity.

6. Current Status Analysis

6.1 Current Knowledge of Palliative Care

The survey data provide insights into the status of the Palliative Care Quiz for Nursing (PCQN). This scale encompasses three continuous variable dimensions: principles and philosophy of palliative care, pain and symptom management, and psychosocial support. Descriptive statistical analysis and one-sample t-tests were conducted to evaluate the current knowledge status in these areas. Because the questions were true/false, a correct answer was scored 1 point, while incorrect answers or "don't know" responses received 0 points. The final scores for each dimension were summed, with higher scores indicating better knowledge. The results are presented below:

Table 2: Analysis of the Current Status of Palliative Care Knowledge(N=320)

Dimension	Min	Max	Mean	SD	Test Value	t	p
PPC	0	4	1.85	1.32	2	-1.994	0.047*
PSSS	0	3	1.76	0.96	1.5	4.908	0.000**
PSM	0	13	7.95	3.16	6.5	8.214	0.000**
K	0	20	11.57	4.74	10	5.906	0.000**

* p<0.05 ** p<0.01
Note: The test value for each dimension and the overall score is set as half of the total possible score for that dimension.
Abbreviation Notes:
PPC: Philosophy and Principles of Palliative Care (dimension of the Palliative Care Knowledge Scale)
PSSS: Psychosocial and Spiritual Support (dimension of the Palliative Care Knowledge Scale)
PSM: Pain and Symptom Management (dimension of the Palliative Care Knowledge Scale)
K: Overall Palliative Care Knowledge

As shown in Table 4, the scores for the dimensions of psychosocial support, pain and symptom management, and overall palliative care knowledge are significantly higher than half of their respective total scores, with p-values from the one-sample t-tests all less than 0.01. This indicates that nursing students have a good overall score on palliative care knowledge (11.57 points). However, the score for the principles and philosophy of palliative care is significantly lower, suggesting a need for further improvement in students' understanding of these concepts. The performance on individual items within the principles and philosophy dimension is detailed in Table 5, where items 1 and 9 received particularly low scores. This indicates that despite relatively high scores in psychosocial support and pain management, there is a lack of foundational knowledge in palliative care.

Table 3: Four Items from the Philosophy and Principles of Palliative Care Dimension in the Palliative Care Knowledge Scale

Item	Correct Responses (n)	Accuracy Rate (%)
1. Palliative care is only suitable for patients whose conditions are deteriorating or nearing end-stage.	122	38.13
9. Providing palliative care requires emotional detachment.	116	36.25
12. The philosophy of palliative care is consistent with the philosophy of active treatment.	154	48.13
17. The accumulated sense of loss from caring for terminal patients inevitably leads to emotional exhaustion among palliative care staff.	201	62.81

6.2 Current Attitudes Toward Death and Palliative Care

The survey data reveal the current status of attitudes measured by the Death Attitude Profile—Revised (DAP-R) and the Attitudes Toward Care of the Dying Scale (FATCOD-A). The FATCOD-A includes two dimensions: overall care awareness and positive attitudes toward caring for dying patients, while the DAP-R includes five dimensions: escape acceptance, approach acceptance, natural acceptance, death avoidance, and death anxiety. All variables are continuous, and both descriptive statistical analysis and one-sample t-tests were conducted to evaluate their current status. The analysis results are summarized in the table below:

Table 4: Current Status Analysis

Scale	Dimension	Mean	SD	Test Value	t	p
PCAS	HCA	3.428	0.456	3	16.776	0.000**
	Att	3.03	0.411	3	1.289	0.198
	Overall (Att)	3.202	0.277	3	13.038	0.000**
DAS	EA	2.853	0.943	3	-2.787	0.006*
	ApA	2.797	0.789	3	-4.608	0.000**
	NA	3.719	0.74	3	17.367	0.000**
	DA	3.173	0.782	3	3.945	0.000**
	DF	2.935	0.812	3	-1.426	0.155

* $p<0.05$ ** $p<0.01$

Note: As this is a 5-point Likert scale, a score of 3 represents a neutral position, and thus the test value is set to 3.

The results presented in Table 6 indicate that the dimension of overall care awareness in the FATCOD-A scale is significantly higher than 3, with a one-sample t-test p-value less than 0.01, suggesting a tendency towards agreement and indicating that nursing students have a strong awareness of overall care. Conversely, the positive attitude toward caring for dying patients leans toward neutrality. The overall attitude toward palliative care also significantly exceeds a score of 3, reflecting a generally positive outlook.

In the DAP-R, the dimensions of natural acceptance and death avoidance are significantly higher than 3, with p-values from the one-sample t-tests under 0.01, indicating a general tendency towards acceptance of death among nursing students, despite a certain level of death anxiety. However, the escape acceptance and approach acceptance dimensions are significantly lower than 3, with p-values also under 0.01, reflecting a tendency towards disagreement. This suggests that nursing students neither yearn for death nor actively avoid it. The dimension of death anxiety is neutral, indicating a reasonably good level of understanding regarding death among students.

7. Conclusion

This study conducted a cross-sectional survey of nursing students at Hua Xia Vocational College in Guangzhou, exploring the current status of their knowledge of palliative care, attitudes toward death, and attitudes toward palliative care. The findings indicate that nursing students have a solid grasp of overall palliative care knowledge. However, there is still a significant gap in their understanding of the philosophy and principles of palliative care, particularly regarding its applicability and underlying concepts. This suggests a need for enhanced education in the fundamental aspects of palliative care within nursing programs to improve students' overall competency.

In terms of attitudes toward death, nursing students exhibit a strong tendency toward natural acceptance and death avoidance, reflecting a relatively mature understanding of death. Nevertheless, they also experience a level of death anxiety. This highlights the importance of not only focusing on the acquisition of professional knowledge in nursing education but also on cultivating students' psychological resilience to help them confront the inevitable challenges of death.

Furthermore, nursing students generally demonstrate a positive attitude toward palliative care, particularly evident in their strong awareness of overall care. This indicates a substantial concern for terminal patients. However, the relatively neutral stance on the positive attitude dimension suggests that further emphasis on practical experience and experiential education is necessary to foster a more proactive nursing attitude.

In summary, this research provides valuable insights for improving nursing education, underlining the importance of integrating theory and practice in palliative care education to enhance the professional capabilities and psychological preparedness of nursing students. This will ultimately enable them to better serve terminal patients and their families. Future studies could explore additional factors influencing nursing students' knowledge and attitudes toward palliative care, offering a more comprehensive perspective for optimizing nursing education.

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