
Nursing Students' Knowledge, Attitudes and Death Attitude Regarding Palliative Care: A Descriptive Correlational Study

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Abstract: Nursing staff are the main implementers of palliative care and nursing students are the main reserve of palliative care staff, and the importance of palliative care education in China is increasing. A questionnaire-based, cross-sectional survey was surveyed from November 2020 and January 2021 in Chongqing China. The survey included the Revised Chinese version of the Palliative Care Quiz for Nursing, palliative care attitude questionnaire and the Chinese version of the Death Attitude Profile-Revised. The final sample consisted of 1168 nursing students (response rate = 91.5%). The median knowledge was 11.00 (9.00, 12.00), and among the four areas of knowledge, the use of pain medication and psychosocial and spiritual care were less correct, 29.9% and 43.3%, respectively. 63.10% of students scored seven points or more on attitudes regarding palliative care and they had highest scores on neutral acceptance in the attitude of death. In addition, we only found a correlation between knowledge and attitudes. The results of this study showed that nursing students' attitudes toward palliative care and death are positive and should be continued and sustained, but there are still deficiencies in hospice knowledge, and we should increase education and learning content in this problematic area. Therefore, it is strongly recommended that systematic and comprehensive palliative care education be introduced into the Chinese nursing curriculum.

Keywords: Palliative Care, Knowledge, Attitude, Death Attitude, Nursing Students

1. Introduction

The 2020 census showed that China's population aged 65 years and older was 190.63 million, or 13.50% [1], which is close to the United Nations' standard for a deeply aging society, where the proportion of people aged 65 years and older exceeds 14% [2]. With the rapidly aging population and improved cancer survival rate, more elderly people and patients are requiring the quality palliative care [3, 4]. The latest definition of palliative care by WHO is: assessment and treatment of other physical, psychological and spiritual problems, including pain, by implementing early intervention for patients diagnosed with incurable diseases, and relieving their pain and discomfort, improve the quality of life during the survival of the disease, and help patients and their families to accept the process of disease and correctly face death as a nursing model [5]. Palliative care emphasizes that in

the final stage of the patient's life, through the professional knowledge of nursing staff and comprehensive nursing methods, the patient and family members are guided to face up to the disease and solve psychological and physiological problems for them, so as to improve the quality of life of the patient before death, The main focus is to alleviate the pain, to ensure that the patient can leave peacefully, and at the same time to help the patient's family to face the death of their loved one with a peaceful mind, and to provide comprehensive care [6].

Nurses play an essential role in providing palliative care to terminally ill patients and their family members because they spend the longest time with patients and their proximity to patients' bedsides [7-9]. Specifically, nurses play multiple roles as evaluators, educators, implementers, coordinators and researchers in palliative care. They also need to help patients and their families to accept and understand death, and can

calmly face death, so that they can pass through the final stage of life peacefully [10]. Death attitude refers to the evaluative and stable internal psychological tendency of individuals when responding to death, which includes negative attitudes such as fear of death, death avoidance and death anxiety, as well as the positive attitude of neutral acceptance, approach acceptance and escape acceptance [11]. Moreover, a positive attitude towards death is a prerequisite for nursing staff to do a good job in palliative care [12]. The more positive the death attitude of nurses, the more positive the service attitude towards dying patients and their families, and the more conducive to the provision of high-quality Palliative care services [13].

Today's nursing students are future nurses, and their knowledge about and attitude toward palliative care will directly affect the quality of care for dying patients in the future. Palliative care is an important way to ensure the quality of survival of terminally ill patients, and an appropriate knowledge of palliative care, including a comprehensive knowledge of palliative care, is a guarantee of providing professional palliative care. Therefore, it is necessary to understand the current situation and attitudes of nursing students toward palliative care, so as to improve their knowledge and attitudes toward palliative care, promote the healthy and orderly development of palliative care, and lay the foundation for the comprehensive development of high-quality palliative care in the future.

However, many studies show that Chinese nursing students lack enough knowledge about palliative care and feel ill-prepared to care for dying patients [9, 14, 15]. In addition, previous studies [9, 15, 16] mainly explored the influencing factors of palliative care knowledge, attitude or death attitude, but did not deeply analyze the correlation among knowledge, attitude and death attitude. Although Zhou's study [14] explored the correlation between knowledge, attitude and death attitude, which included only 198 junior nursing students, excluding undergraduate nursing students of other grades and graduate students, which had the problem of small sample size and lack of representativeness.

Therefore, based on the existing studies, this study further expanded the sample size, selected undergraduate and graduate nursing students as the study subjects, adopted the current survey method, and analyzed the correlation between the three representative.

2. Methods

2.1. Study Design and Setting

A questionnaire-based, cross-sectional survey was surveyed from November 2020 and January 2021 in Chongqing China.

2.2. Participants and Sampling

The sample consisted of 1074 undergraduate nursing students and 94 nursing postgraduates from Chongqing Medical University. With stratified cluster sampling method,

undergraduate nursing students were selected as study sample. Meanwhile, nursing postgraduates were randomly selected as study samples with stratified random sampling method. The participants were included if they meet the following inclusion criteria: (1) a student enrolled in the undergraduate nursing programme or the graduate nursing program at Chongqing Medical University; (2) participate voluntarily; (3) correctly understand the context of the questionnaire and no reading disorder.

2.3. Instruments

To examine nursing students' knowledge about palliative care, a revised Chinese version of the Palliative Care Quiz for Nursing (PCQN) was used. The original questionnaire was developed by Ross *et al.* [17], and taking into account the differences between nursing students and nurses, this study made minor adjustments to PCQN and reclassified its 20 questions into four categories: (1) principles of palliative care (5 items); (2) pain and symptom management (5 items); (3) use of painkillers (5 items); (4) psychosocial and spiritual care (5 items). The respondents select "true", "false" or "do not know" for each item. Then answers were coded as follows: 1=correct, 0=incorrect, or "I do not know" [18]. Total scores for the PCQN-R-C range from 0–20. The internal consistency of the PCQN-R-C in this study was very good (Cronbach's alpha= 0.883).

Palliative care attitude questionnaire was made on the basis of Yu Ting *et al.* [19] and Zheng Yueping [20], which contains 10 items and aims to examine students' attitudes of palliative care, that is, willingness to receive palliative care services (item 1, 2), willingness to engage in palliative care (item 3), acceptance of palliative care institutions (item 5), support for palliative care (item 7, 8), attitudes towards death education (item 9), and attitudes towards palliative care education (item 4, 6, 10). The respondents select "willing", "unwilling" or "not sure" for each item. Then answers were coded as follows: 1=willing, 0=unwilling, 0.5= not sure. Total scores for palliative care attitude questionnaire range from 0-10. The internal consistency of palliative care attitude questionnaire was very good (Cronbach's alpha= 0.801).

The DAP-R, designed by Wong *et al.* [21], is widely used for assessing respondents' attitudes towards death. The DAP-R, totally 32 items, is composed of five subscales, namely, fear of death (7 items), death avoidance (5 items), neutral acceptance (5 items), approach acceptance (10 items) and escape acceptance (5 items). The DAP-R-C used a 5-point Likert Scale from 1 (strongly disagree) to 5 (strongly agree). The score for each subscale is the mean score of its items, so scores range from 1–5. A higher score for one subscale indicates that the respondents show a stronger tendency in this subscale. The Cronbach's alpha for DAP-R-C was earlier found to be 0.868 [22], and, in the present study, the Cronbach's alpha was 0.906.

2.4. Data Collection

From November 2020 to January 2021, a total of 1074

undergraduate nursing students and 94 nursing postgraduates were approached. The purpose of the study and instructions to fill the questionnaires were explained to the students. Then the questionnaires were administered to the students who agreed to participate, and questionnaires were collected on the spot after they completed it independently.

2.5. Statistical Analysis

The data surveyed was statistically analyzed using SPSS 26.0 software. The normality test and homogeneity of variance test were conducted in scores of PCQN, which shows that both of them were not normally distributed and homogeneity of variance. Frequency and percentages were used to describe the categorical variables, and median and quartiles were used to describe the knowledge and attitude scores. Finally, Spearman's correlation test was used to explore the correlation between the three. $P < 0.05$ was considered statistically significant with a 95% confidence interval.

2.6. Ethical Considerations

This study maintains the anonymity of all the participants, who can opt whether or not to participate. Formal written consent was obtained from all participants. We further guaranteed that the identity of the participants will not be disclosed and that their answers will be confidential. Ethical approval for the project was gained from the ethics committees of Chongqing Medical University.

3. Results

3.1. Participants

The sample consisted of 1168 nursing students, A response rate of 91.5% was achieved. Most respondents were female (89.2%), ethnic Han (90.8%), and not religious (99.6%). 6.6% of students disliked nursing major, 3.9% experienced severe illness before and 15.6% experienced caring for dying patients. Table 1 presents other detailed demographics.

Table 1. Demographic characteristics of students.

Variate	Frequency (%)	Variate	Frequency (%)
Gender	-	Educational level	-
Male	126 (10.8)	Undergraduate	1074 (92.0)
Female	1042 (89.2)	Postgraduate	94 (8.0)
Nationality	-	Birthplace	-
ethnic Han	1061 (90.8)	Provincial capital	291 (24.9)
Minority	107 (9.2)	Prefecture city	86 (7.4)
Religious belief	-	County	401 (34.3)
No	1163 (99.6)	Country	390 (33.4)
Yes	5 (0.4)	Annual family income	-
Physical condition	-	<50k	550 (47.1)
Healthy	896 (76.7)	50k-100k	432 (37.0)
Subhealthy	260 (22.3)	100k-300k	165 (14.1)
Unhealthy	12 (1.0)	>300k	21 (1.8)
Grade	-	Attend a funeral	-
Freshman	338 (28.9)	Yes	833 (75.6)
Sophomore	301 (25.8)	No	285 (24.4)
Junior	219 (18.8)	Care for dying patients	-
Senior	216 (18.5)	Yes	182 (15.6)
Postgraduate	94 (8.1)	No	986 (84.4)
Clinical practices in hospitals	-	Family member with a terminal illness	-
Yes	438 (37.5)	Yes	348 (29.8)
No	730 (62.5)	No	820 (70.2)
Medical-related volunteer service	-	I have suffered from a serious illness	-
Yes	548 (46.9)	Yes	46 (3.9)
No	620 (53.1)	No	1122 (96.1)
Care for dying family members	-	Attitude towards nursing major	-
Yes	555 (47.5)	Like	308 (26.4)
No	613 (52.5)	Neutral	783 (67.0)
Contact with severe patients	-	Dislike	77 (6.6)
Yes	433 (37.1)	-	-
No	735 (62.9)	-	-

3.2. Knowledge About Palliative Care

In this study, the median of PCQN-C-R score was 11.00 (9.00, 12.00) ranging from 0-18 (Table 2). In PCQN-C-R, the category which scored the highest percentage of correct

answers was principles of palliative care (65.5%), and the category which scored the lowest was use of painkillers (29.9%). The correct rates of Q10, Q17 and Q20 were higher than 85%, while the correct rates of Q6, Q11 Q13, and Q16 were less than 10%. More details are shown in Table 3.

3.3. Attitudes Toward Palliative Care

In this study, the median of palliative care attitude was 7.50 (6.00, 8.50) ranging from 0-10. 63.10% of students scored seven points or more, and only 2.40% were negative toward palliative care. The scoring rates of each dimension varied greatly, ranging from 58.5% to 87.3%. Specifically, the score rates of attitudes towards death education and attitudes towards palliative care education were more than 80%, and support for palliative care had

the lowest one. Among these items, 77.8% students considered it was necessary to carry out palliative care education and 78.7% thought it was necessary to offer death education to dying patients and their families. However, there were only 36.3% students wanted to be engaged in palliative care in the future, and 53.3% held a misconception that it is necessary to take active treatment to achieve the purpose of saving life for terminal patients. More details are shown in Table 3.

Table 2. The results of each questions composing PCQN-C-R.

Scale item	Subscale	Correct (N)	Incorrect (N)	Correct Rate (%)
1	Principles of palliative care	-	-	65.5
2	Palliative care neither delays nor accelerates death of patients. (T)	567	601	48.5
3	Palliative care is only appropriate in situations where there is evidence of a downhill trajectory or deterioration. (F)	580	588	49.7
5	Palliative care includes many services such as medical care, nursing, psychological counseling and death education. (T)	950	218	81.3
19	The philosophy of palliative care is compatible with that of aggressive treatment.(T)	921	247	78.9
7	Pain and symptom management	818	350	70.0
8	Pain is a common symptom of terminally ill patients, especially cancer patients. (T)	-	-	61.2
10	Pain threshold is lowered by anxiety or fatigue. (T)	986	182	84.4
11	Adjuvant therapies are important in managing pain. (T)	452	716	38.7
17	The extent of the disease determines the method of pain treatment. (F)	1047	121	89.6
9	Manifestations of chronic pain are different from those of acute pain. (T)	107	1061	9.2
12	Use of painkillers	1009	159	86.4
13	The use of placebos is appropriate in the treatment of some types of pain. (F)	-	-	29.9
14	The basic principle of pain medication is to give medication "by the clock", not "necessary". (T)	131	1037	11.2
15	Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain. (F)	498	670	42.6
4	In high doses, codeine causes more nausea and vomiting than morphine. (T)	44	1124	3.8
6	Demerol is not an effective analgesic in the control of chronic pain. (T)	666	502	57.0
16	Psychosocial and spiritual care	453	715	38.8
18	Psychological comfort is ineffective for terminal patients. (F)	-	-	43.3
20	It is crucial for family members to remain at the bedside until death occurs. (F)	580	588	49.7
1	The provision of palliative care requires emotional detachment. (F)	29	1139	2.5
2	The accumulation of losses renders burnout inevitable for those who seek work in palliative care. (F)	54	1114	4.6
3	Terminal patients are prone to fear, denial, anxiety, depression and despair and other psychological states. (T)	386	782	33.0
4		1019	149	87.2

Table 3. Scoring information of attitude regarding palliative care.

Items	Willing N (%)	Not sure N (%)	Unwilling N (%)	Scoring rate (%)
Attitudes of receiving palliative care services	-	-	-	68.8
1 If necessary, would you like to send your loved ones to receive palliative care?	503 (43.1)	606 (51.9)	59 (5.1)	-
2 Would you like to receive palliative care if you need it in the future	538 (46.1)	526 (45.0)	104 (8.9)	-
Attitudes to engage in palliative care	-	-	-	63.7
3 Would you like to be engaged in palliative care in the future?	424 (36.3)	640 (54.8)	104 (8.9)	-
Attitudes of palliative care organization	-	-	-	71.2
5 Would you like to set up a palliative care organization near your home?	601 (51.5)	462 (39.6)	105 (9.0)	-
Attitudes towards palliative care education	-	-	-	82.2
4 Would you want to learn more about palliative care?	717 (61.4)	403 (34.5)	48 (4.1)	-
6 Are you willing to take palliative care as a nurse's professionalism?	757 (64.8)	359 (30.7)	52 (4.5)	-
10 It is necessary to educate the people in palliative care.	909 (77.8)	230 (19.7)	29 (2.5)	-
Support for palliative care	-	-	-	58.5
7 If palliative care had been given to terminally ill patients earlier, many patients would have more benefits.	815 (69.8)	315 (27.0)	38 (3.3)	-
8 Terminal patients do not need active treatment to achieve the purpose of saving life.	243 (20.8)	303 (25.9)	622 (53.3)	-
Attitudes towards death education	-	-	-	87.3
9 It is necessary to give death education to dying patients and their families	919 (78.7)	201 (17.2)	48 (4.1)	-

3.4. Attitudes Toward Death

The median score of students' attitudes toward death is

94.00 (84.50, 101.00), ranging from 32-160. For students' attitudes towards death, on average, students showed highest scores on neutral acceptance (median=3.80), followed by death avoidance, fear of death, approach acceptance and

escape acceptance.

Table 4. The results of death attitudes score in different groups.

	Attitudes towards death				
	Escape acceptance	Neutral acceptance	Death avoidance	Fear of death	Approach acceptance
Median	2.60	3.80	3.00	2.86	2.80
P ₂₅	2.00	3.40	2.60	2.29	2.30
P ₇₅	3.00	4.10	3.40	3.29	3.00
Max	5.00	5.00	5.00	5.00	5.00
Min	1.00	1.00	1.00	1.00	1.00

3.5. Correlations Among Knowledge, Attitudes and Death Attitudes

The analysis of the correlation among knowledge, attitudes and death attitudes, displayed in Table 5, with positive correlations between knowledge and attitudes.

Table 5. Correlations among knowledge, attitudes and death attitudes.

	Knowledge		Attitudes		Death Attitudes	
	P-value	r _s	P-value	r _s	P-value	r _s
Knowledge	-	-	.000*	.297	.316	-.029
Attitudes	.000*	.297	-	-	.280	-.032
Death Attitudes	.316	-.029	.280	-.032	-	-

4. Discussion

Overall, our study results reflect that nursing students have insufficient knowledge about palliative care but hold a positive attitude toward palliative care and death, and that there is a correlation between knowledge and attitudes.

4.1. The Score of PCQN-C-R of Nursing Students

The results of the study observed some gaps in the palliative care knowledge of our students. The median of our sample was 11.00 (9.00, 12.00), correct rate of 50.3% is moderate, but inadequate according to our elderly population and palliative care needs, which is largely due to the lack of educational content [14, 15]. Many studies suggest that basic education in palliative care should be taught to nursing students so that they can be proficient in providing palliative care services to their patients [8, 23-25]. To our knowledge, no specific, mandatory, unified palliative care curriculum has been developed at Chongqing Medical University during the study period. However, countries where palliative care is well developed have provided relevant education and training, such as the United Kingdom, where all leading public medical schools have successfully offered hospice related courses and made them mandatory for medical students; the American Association of Nursing Societies recommended in 2016 that hospice be included in the undergraduate nursing curriculum; subsequently, countries such as Japan and Australia have established hospice institutions and offered relevant [9, 26-28]. China should also establish courses for education and training for nursing students to improve knowledge and provide better palliative care services.

The correct rates of four categories show that students have a knowledge deficiency regarding palliative care, especially in use of painkillers and psychosocial and spiritual care. Among

four categories of PCQN-C-R, students get highest correct rate in principles of palliative care (65.5%), followed by pain and symptom management (61.2%), psychosocial and spiritual care (43.3%) and use of painkillers (29.9%). The low score in psychosocial and spiritual care is consistent with the result of Iranmanesh [18], while the correct rate of pain and symptom management is contrary to results of Sujatha and Jayagowri [29], which may be due to different categories between present study and previous studies. Most previous studies divided 20 items of PCQN-C into three categories: philosophy and principles of palliative (4 items), pain and symptom management (13 items), and psychosocial and spiritual care (3 items), which is inconsistent with present study. The current study has modifications and additions based on this, which will produce different results.

4.2. Key Misconceptions About Palliative Care

Present study also reveal that there are four key misconceptions about palliative care among nursing students. Students seemed to believe that "it is crucial for family members to remain at the bedside until death occurs" (Q6), "the severity of the disease determines the method of pain treatment" (Q11), "drug addiction is a major problem when morphine is used on a long-term basis for the management of pain"(Q13) and "the provision of palliative care requires emotional detachment" (Q16). The low correct rate of Q6 (2.5%) is consistent with most similar studies at home and abroad [9, 14, 30-32], while some studies yielded opposite responses [8, 23, 33]. Cultural/religious factors that shape the society's expectations and fundamental role of the family in the care of the dying patient may have played a role [31]. Due to the family oriented Confucian society in China, people mostly agree that family members should accompany the patient as much as they can, especially when the patient is severely ill [14]. Similar results of Q11 and Q13 had obtained

in previous study conducted in nurses in Shandong Province [34], indicating that even nurses with clinical experience still lack relevant knowledge. Pain treatment methods are determined by the principles of treatment and never by the severity of the condition, but nursing students are not yet able to understand the content of this expertise and the knowledge errors that arise from this, so that fewer students answer this entry correctly. Nursing students who have not learned about and participated in the practice of drugs such as morphine are unable to make proper judgments. Also the most important concern for end-stage patients is the quality of life at the end stage, while the use of painkillers is basic treatment for them and addiction is no longer a primary issue relative to end-stage suffering. Moreover, correct rate of Q16 is 4.6% in present study, far lower than that of nursing students in in Jiangsu with 56.7% [14]. The reason for the this huge difference is that Zhou only included nursing students at the end of third year, while present study included a large number of freshmen and sophomores who have not yet taken nursing courses. Pain treatment methods are determined by the principles of treatment and never by the severity of the condition, but nursing students are not yet able to understand the content of this expertise and the knowledge errors that arise from this, so that fewer students answer this entry correctly.

4.3. Nursing Students' Attitude Towards Palliative Care and Death

Most students perceived death as a natural part of life, which is somewhat encouraging. Present study found students had highest score on neutral acceptance, which means that most students regard death as a natural process of life. Consistently, previous studies found that most of Chinese nursing students from Sichuan [35], from Jiangsu [14], from Shanghai [36] and from Shandong [37] all viewed death as a natural part of life.

Present study showed that 63.10% students had a positive attitude of palliative care measured by self-designed questionnaire, especially towards palliative care education and death education. Likewise, previous studies have pointed out that the need for palliative care education is increasing [4], and nursing students deemed that palliative care should be a mandatory and independent subject and include some necessary additional learning [38], indicating students have high enthusiasm and positive attitude towards palliative care. However, there were 36.3% of students were willing to be engaged in palliative care in the future, which is still not ideal, but significantly higher than the 19.8% in previous studies [9]. Possible reason may be that survey of the previous study was conducted from March to July 2016, while our survey was conducted from November 2020 to January 2021, and palliative care education in China has also made progress in the past four years. Significantly, half of the students mistakenly believed that terminal patients still need active treatment to save lives, which may be a result of the inadequate palliative care education in nursing program of Chongqing Medical University.

4.4. Spearman Correlation Test Among Knowledge, Attitude and Death Attitude

The results of our Spearman correlation test showed a significant positive correlation between knowledge and attitude, with nursing students who scored higher on knowledge also having positive attitudes. This result suggests that improving students' palliative care knowledge contributes to their attitude change, which is still positive. This is also consistent with the findings of Chen Guimei's study on undergraduate medical students [39] that knowledge and attitude in palliative care promote and influence each other, and that a good attitude towards palliative care is a prerequisite for active knowledge learning. This scholar is also extremely correct in that hospice knowledge and attitudes are inherently complementary, with higher scores on one side promoting progress on the other. Attitudes toward death did not correlate with knowledge and attitudes, and the reasons for this are largely related to the subjects we selected for the study, as death is taboo in China, and even among educated students there is still a certain amount of subjectivity.

5. Conclusion

The results of this study showed that nursing students' attitudes toward palliative care and death are positive, but there is still a deficiency in palliative care knowledge, to borrow the positive relationship between knowledge and attitude to promote mutual progress. Therefore, recommend the construction of a standardized palliative basic education system. Drawing on foreign palliative-related curricula, appropriate palliative curricula are developed according to actual needs and for nursing students at different stages of study. On this basis, through clinical practice (internship or practicum), nursing students can get in close contact with patients and their families, so that they can better perceive the physical and mental feelings of patients and apply theory to practice. Integrate death education into the nursing education system and infiltrate it into other curriculum courses or set it as an independent course, so that nursing students can gradually be exposed to and accept death education and improve nursing students' attitude toward death. Future research needs to further investigate how to improve medical students' knowledge and attitudes of palliative care and lay the foundation for palliative care services.

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