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Original Article

A correlation study between nursing staff's knowledge level of hospice care and the psychology, emotion and attitude towards deaths

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Abstract: Objective: We investigated the relationship between nursing staff's knowledge of hospice care and psychological states, including grief and attitude towards death. Methods: From October 2018 to December 2018, a total of 1900 professional nursing staff of secondary and tertiary levels in Qinghai Province were chosen as the research subjects. Professional questionnaires were used to evaluate their knowledge level of Hospice Care (HC), psychological states, grief and attitude towards death, while the correlation between HC knowledge level and the latter three were analyzed. Results: In Qinghai Province, the nursing staff had the highest scores in terms of knowledge levels of HC symptom control with a score of 4.48±1.65, and the lowest score of 1.79±1.12 in terms of knowledge levels of death education. In the Death Attitude Profile-Revised (DAP-R) scale, there was a negative correlation between fear of death, death avoidance, escape acceptance, and HC knowledge total score ($P<0.05$), while there was a positive correlation between natural acceptance and HC knowledge score ($P<0.05$). There was no statistical correlation between the total score of approach acceptance and HC knowledge ($P>0.05$). In the Grief Experience Questionnaire (GEQ) questionnaire, there were negative correlations between the total score of HC knowledge and body reaction, general grief response, seeking to explain and respond to special death forms ($P<0.05$). Hamilton anxiety scale (HAMA) and Hamilton depression scale (HAMD) were negatively correlated with HC knowledge scores ($P<0.05$). Conclusion: There is a correlation between nursing staff's knowledge level of hospice care and the psychological state, partial grief and attitudes towards death. The improvement of levels of nursing staff's HC knowledge plays a positive role in maintaining their healthy psychological state, alleviating their grief and helping them to actively face death.

Keywords: Hospice care, psychological state, grief, attitude towards death, nursing staff

Introduction

Hospice Care (HC) refers to a medical care service that takes hospice patients and their families as the center of care to help patients with various end-stage diseases, ease patients' pain and finish their journey of life with dignity [1-3]. The main work of HC includes pain care, symptom intervention, comfort care, psychological intervention, psychological and social support, etc. [4, 5]. The quality of HC work is directly related to the "death quality" of end-stage patients [6]. In recent years, with the aging society of China, and the incidence of malignant tumors, Alzheimer's disease and other diseases that cannot be cured at the present stage which have gradually increased, resulting in increasingly prominent demands for hospice care. Hospice nurses are the medical professionals who have direct contact with the dying patients and their families, and also the medical professionals who are the mostly in contact with patients. Providing comprehensive physical, mental, spiritual and social care is the heart of HC's work. In the Outline of the 13th Five-Year Plan for the Development of National Nursing (2016-2020), China takes HC service capacity building as a core content of the development of elderly care [7, 8]. As the main body of HC service, nursing staff play a crucial role in HC service and are the backbone of building the hospice care service system. Therefore, it is of great significance to objectively evaluate the overall knowledge level and

psychological and emotional states of HC nursing staff. At present, HC-related research in China is mainly focus on patients and their families with little focus on the status quo of clinical nursing staff. For this reason, our hospital carried out this special project within the whole province to comprehensively and objectively understand the knowledge level and relevant situation of HC nursing staff, so as to improve their psychological state and cognitive level as well as their working level, and to lay a good foundation for better HC work in the future. The research is summarized as follows.

Materials and methods

Subjects

From October 2018 to December 2018, a total of 1,900 nursing professionals of secondary and tertiary levels in Qinghai Province were selected as the research subjects according to the convenience sampling method. Approval for this study was obtained from the ethics committee of Qinghai People Hospital with the approval No. of 2017(083)-135. Inclusion criteria: Registered nusrses holding a practitioner certificate; Working as a nursing professional ≥ 12 months; Working in a medical institution in Qinghai Province; Volunteered to participate in this study. Written informed consent was given by all participants.

Exclusion criteria: Those who failed to return the questionnaire/scale in time; Questionnaires/scales that do not meet the requirements as instructed.

Methods

Research content: The general materials of all participating nursing staff were assessed: working hospital, age, education background, gender, nationality, professional title, position, health status, and religious belief. Questionnaires were used to investigate the HC knowledge level, psychological state, grief caused by the death of the dying patients under their care, and acceptance attitude towards the deaths of patients.

Research tools: ① According to the self-designed HC knowledge questionnaire, the nursing staff's mastery level of HC knowledge was evaluated [9]. The questionnaire consisted of four dimensions, each of which contained 18 items. In the form of multiple-choice questions, each question contained three options of "right, wrong and not knowing". The correct answer was counted as 1 point, while the wrong answer and not knowing were counted as 0 points with a total score of 18 points. The standard score is 65.67 points. The total Cronbach α coefficient of the HC knowledge questionnaire was 0.864, the Cronbach α coefficient of the four dimensions ranged from 0.777 to 0.826, and the Cronbach's α coefficient was 0.904. ② Nursing staff's emotions were evaluated by the Grief Experiences Questionnaire (GEQ) [10]. GEQ included total body reaction, general grief response, seeking to explain, lacking social support, stigma, feeling of guilt, sense of duty of deaths, sense of shame, feeling of being abandoned, self-destructive behavior, and response to special forms of death. There were a total of 11 dimensions, each including five questions, adopting the method of five points score. The higher the score, the higher the grief level of the dimension. The Cronbach α coefficient of the GEQ questionnaire ranged from 0.646 to 0.933, and the split-half reliability of the questionnaire ranged from 0.600 to 0.877. ③ The Hamilton Anxiety Scale (HAMA) and the Hamilton Depression Scale (HAMD) were used for assessing the nursing staff's psychological state [11]. HAMA contained 14 items, with a reliability of 0.830-1.000 and a validity of 0.360. HAMD consisted of 17 items with a reliability ranging from 0.880 to 0.990 and a validity of 0.920. HAMA>7 points indicated anxiety symptoms, and HAMD>7 points indicated depression symptoms. The higher the score, the more serious the degree of anxiety and depression. ④ Nursing staff's attitude towards the deaths of patients was assessed by the Death Attitude Description Scale-Revised (DAP-R) [12]. The DAP-R scale included 32 items in 5 dimensions: death fear, death avoidance, escape acceptance, natural acceptance, and approach acceptance. The items were scored according to a Likert 5-point scoring method. The higher the score was, the more the attitude of the subjects was approaching the dimension. Cronbach's α coefficient of the gross scale was 0.875.

Research methods: The HC committee of Qinghai Nursing Association organized the survey

Table 1. Scores of nursing staffs' HC knowledge level ($\bar{x} \pm s$)

Items	n	Total score (points)
Basic knowledge score	1833	3.01±1.39
Psychological nursing score	1833	2.55±0.83
Education on death score	1833	1.79±1.12
Symptom control score	1833	4.48±1.65
Total score of knowledge	1833	11.82±3.74

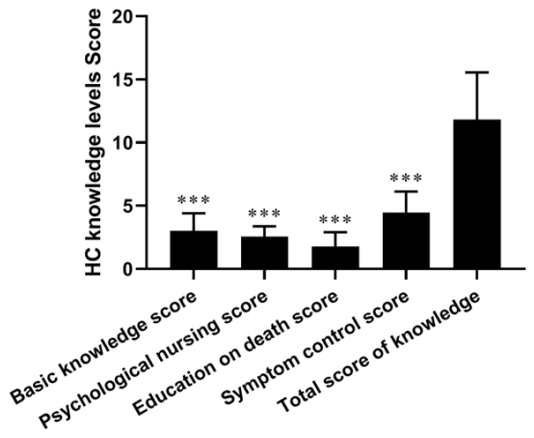

Figure 1. Bar chart of scores for each dimension of HC knowledge level questionnaire for nursing staff. *** indicated P<0.001 when compared with others.

and the director of the nursing department of each hospital coordinated and organized the nursing staff to participate in the survey. Before filling in the questionnaire, the research team explained the purpose and significance of the survey to the nursing director and head nurse of each hospital, introduced the method of filling in the questionnaire, and emphasized the independence and authenticity of filling in the questionnaire. Instructions for filling in the questionnaire were listed on the Sojump. In this study, a total of 1,900 questionnaires were issued and 1,833 valid questionnaires were recovered with an effective recovery rate of 96.47%.

Statistical methods

SPSS 21.0 software was adopted for the statistical analysis and GraphPad Prism 8.0 software was adopted for the figure rendering. Among which, the ($\bar{x} \pm s$) format was used to express the rank data and to draw the bar chart. In terms of the correlation analysis, Pearson analysis was utilized and r>0 represented a positive correlation while r<0 represented a negative correlation. A correlation scatter diagram was depicted. P<0.05 was considered as statistically significant.

Results

General materials

The 1,833 valid questionnaires collected included 3 level-III hospitals and 16 level-II hospitals. Among the 1,833 nursing staff, 38 were male (2.1%) and 1,795 were female (97.9%) with an average age of (30.33±7.36) years old. Education: 633 nurses (34.5%) with specialist qualifications, 1200 nurses (65.5%) with a bachelor degree or above. Ethnic groups: 1,317 han (71.8%), and 516 ethnic minorities (28.2%), including Hui, Salar, Tibetan, Tu and Mongolian. Religiously healthy: 401 (21.9%), including Buddhism, Islam, and Christianity. Professional titles: 1,441 (78.6%) junior title, 336 (18.3%) with middle titles, and 56 (3.1%) with senior titles. Position: 1,599 nurses with no position (87.2%), and 234 nurses with a position (12.8%). All the nursing staff were in good physical and mental health.

Survey of HC knowledge levels

In Qinghai Province, the total score of the HC knowledge was (11.82±3.74) points. The nursing staff had the highest scores in terms of knowledge levels of HC symptom control with a score of 4.48±1.65, while the lowest score of 1.79±1.12 was in terms of knowledge levels of death education. See details in **Table 1** and **Figure 1**.

Scores of DAP-R scale

In the DAP-R scale, the fear of death score was (22.24±5.43) points, the death avoidance score was (16.46±4.08) points, the escape acceptance score was (15.18±4.35) points, the natural acceptance score was (18.71±3.58) points, the approach acceptance score was (30.58±7.64) points. All dimensions in the DAP-R scale were as shown in **Table 2** and the bar chart in **Figure 2**.

GEQ questionnaire

In the GEQ questionnaire score, the body reaction score was (2.94±0.94) points, the general

Table 2. The DAP-R scale scores of nursing staff ($\bar{x}$ ± s)

Items	n	Scores (points)
Death fear score	1833	22.24±5.43
Death avoidance score	1833	16.46±4.08
Escape acceptance score	1833	15.18±4.35
Natural acceptance score	1833	18.71±3.58
Approach acceptance score	1833	30.58±7.64

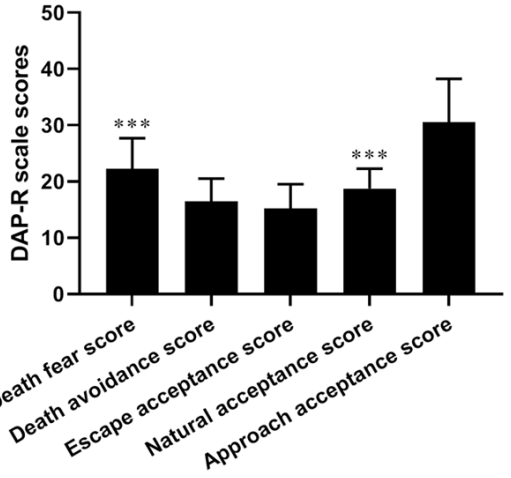

Figure 2. Bar chart of scores for each dimension in the DAP-R scale for nursing staff. *** indicated P<0.001 when compared with others.

grief response score was (3.07±1.00) points, the seeking to explain score was (2.34±0.83) points, the lacking social support score was (1.03±0.16) points, the stigma score was (1.51±0.50) points, the guilt score was (1.79±0.63) points, the sense of duty of deaths score was (1.01±0.14) points, the sense of shame score was (1.01±0.12) points, the feelings of being abandoned score was (1.02±0.16) points, the self-destructive behavior score was (1.02±0.16) points, and the response to special death forms score was (1.95±0.62) points. All dimensions and the bar chart of the GEQ questionnaire were as shown in **Table 3**.

HAMA and HAMD scale

HAMA and HAMD scales of nursing staff were (6.51±0.6) points and (5.84±0.6) points, all within the normal range, and the scores were shown in **Table 4**.

Correlation analysis

In the DAP-R scale, there was a negative correlation between fear of death, death avoidance, escape acceptance, and HC knowledge total score (P<0.05), while there was a positive correlation between natural acceptance and HC knowledge total score (P<0.05), and there was no statistical correlation between the total score of approach acceptance and HC knowledge total score (P>0.05). In the GEQ questionnaire, there were negative correlations between the total score of HC knowledge and body reaction, general grief response, seeking to explain and response to special death forms (P<0.05). HAMA and HAMD were negatively correlated with HC knowledge scores (P<0.05). See **Table 5**.

Discussion

HC is a vital topic in clinical nursing work in China in recent years. However, it has only been developed relatively late in China and is greatly influenced by traditional concepts. In clinical work, it is often taboo to talk about the endpoint of life [13, 14]. Especially in Qinghai province, where there are many ethnic minorities and areas with religious beliefs, so it is difficult for both sides to accept the medical treatment. However, one's life from birth to death is a natural process that no one can avoid and all must face. With the deepening of clinical understanding of patients' end of life stage, a broad consensus has been formed on improving patients' end-stage comfort, minimizing patients' pain and burden, and helping patients complete the final journey of life with dignity with as few regrets as possible [15-17]. HC is a nursing service system that has been formed and gradually developed and improved on the basis of this theory [18]. The study showed that the self-designed HC knowledge questionnaire in our hospital had a standard score of 65.67 points, and the average score of the 1833 nursing staff in Qinghai was 11.82±3.74 points. This suggested that the HC knowledge level of nursing staff in this province is at a medium level, and there is still great room and the necessity for improvement. Results indicated that the nursing staff had the best knowledge of symptom control in HC knowledge, suggesting that nurses have not completely changed the patient-centered

Table 3. Scores of all dimensions in the GEQ questionnaire ($\bar{x} \pm s$)

Item	n	Scores (points)
Body reaction	1833	2.94±0.94
General grief response	1833	3.07±1.00
Seeking to explain	1833	2.34±0.83
Lacking social support	1833	1.03±0.16
Stigma	1833	1.51±0.50
Guilt	1833	1.79±0.63
Sense of duty of deaths	1833	1.01±0.14
Sense of shame	1833	1.01±0.12
Feelings of being abandoned	1833	1.02±0.16
Self-destructive behavior	1833	1.02±0.16
Response to special death forms	1833	1.95±0.62

Table 4. Scores of HAMA and HAMD scales ($\bar{x} \pm s$)

Items	n	Scores (points)
HAMA	1833	6.51±0.6
HAMD	1833	5.84±0.6

Table 5. Details of the correlation analysis statistics

Variates	Total scores of HC knowledge	
	r	*P*
Death fear score	-0.074	0.001
Death avoidance score	-0.064	0.006
Escape acceptance score	-0.053	0.022
Natural acceptance score	0.184	<0.001
Approach acceptance score	0.000	0.988
Body reaction	-0.286	<0.001
General grief response	-0.250	<0.001
Seeking to explain	-0.258	<0.001
Lacking social support	-0.016	0.483
Stigma	0.015	0.529
Guilt	-0.002	0.937
Sense of duty of deaths	-0.002	0.941
Sense of shame	-0.042	0.070
Feelings of being abandoned	0.022	0.349
Self-destructive behavior	0.018	0.447
Response to special death forms	-0.262	<0.001
HAMA	-0.249	<0.001
HAMD	-0.197	<0.001

nursing theory, which is the main part to be further improved upon in HC nursing work in the future. The results showed that the psychological state of the nursing staff in this province is within the normal range, suggesting that HC work has not formed excessive adverse interference to the psychological state of nursing staff. In view of the fact that all the selected nursing staff have more than one year's experience, this point was inseparable from their excellent professional quality and clinical experience. According to the correlation analysis, there was a statistical correlation between HC knowledge and fear of death, death avoidance, escape acceptance, and natural acceptance in the DAP-R scale. This suggested as with the improvement of HC knowledge, the nursing staff's acceptance of fear, avoidance, escape and other attitudes towards death were all lower; and the higher the natural acceptance was, the more objectively and positively they could face and accept the death of the patients they were nursing. In the GEQ questionnaire, there was a negative correlation between the total score of HC knowledge and the body reaction, general grief response, seeking a death explanation, and response to special death forms. This indicated that nursing staff will still be affected by patients' death to a certain extent and feel different degrees of grief, which is mainly concentrated on the general grief over patients' deaths, the life coming to an end, and the introspection for the HC work, etc. With the improvement of HC knowledge, nursing staff had better control over their grief. As the process of HC is usually rather long, nursing staff and patients and their families can form a relatively close contact for a period. So, when facing patients' death, grief reactions can occur in nursing staff. HC knowledge and nursing specialty can reduce the reaction. However, this kind of human response is difficult to completely avoid, and is bound to have a certain impact on nursing staff. Clinical management should pay attention to strengthening the observation on HC nursing staff, and give timely psychological counseling to prevent psychological problems. A body reaction is a kind of specific expression form of a general sad response, usually reflected in HC nursing staff's sigh, low mood, and reduced diet, etc. Although all of these symptoms are transient, they should still arouse the attention of nursing administrators. For some cases in which patients died of acute symptoms, complications and

secondary syndromes, and those who died of rare complications and secondary diseases, it is common for HC nursing staff to seek explanations. This in some sense is a kind of catalyst for HC nursing, but will still cause certain psychological pressure and burden to nursing staff [19, 20]. Part of the terminal end-stage for patients who finally died in a special way, there is also a factor causing greater emotional fluctuation in the nursing staff. However, HC work is of high complexity, and it is difficult to achieve a completely consistent death prediction, and can only be minimized through HC learning, positive experience, psychological intervention and other methods.

Above all, hospice care nursing knowledge level and their psychological state, grief, and the attitude towards the death of patients are correlated. Mastering this feature, with targeted ways such as improving the knowledge level of hospice care, accumulating hospice care experience, and timely psychological counseling can effectively improve the psychological state of nursing staff, alleviate their grief, promote them to actively face and accept death, and lay a good foundation for the smooth development and continuous improvement of hospice care work.

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Disclosure of conflict of interest

None.

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