Analysis of The Status Quo and Influencing Factors of The Death Coping Self-Efficacy of Clinical Nurses: A Cross-Sectional Study

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Abstract

Background

Nurses are the main caregivers to dying patients. It is inevitable to face or deal with death-related events. The ability of death-coping self-efficacy (DCS) is very important, which can reduce the risk of nursing staff, suffering from adverse emotional distress and help them to better participate in the end-of-life care of the patients and improve the quality of care.

Methods

Using the convenient sampling method, a total of 572 nurses were included in this study from a tertiary hospital in Hangzhou, China. The situation and influencing factors of the clinical nurses' DCS were explored using the General Information Questionnaires and DCSS. (DCS scale).

Results

The scores of each parameter, ranging from low to high, were as following: grief coping, death preparation, and hospice care. The influencing factors of nurses' DCS included the hospice care education courses received in the last year, the experience of accompanying the family members of the deceased, and the attitude towards death.

Conclusions

The overall self-efficacy of nurses in palliative care was at a medium level and the sense of their self-efficacy in coping with the grief and preparation for death needed to be strengthened. The nursing managers should pay attention to the education and training of palliative care, which will strengthen the psychological and spiritual caring abilities of the nurses for the patients and their families, increase their experience of end-of-life care, improve their cognition of palliative care, and help them in establishing a correct view of death, thereby leading to improve the quality of palliative care.

Background

The survey results of the Global Quality of Death Index in 2015 showed that Mainland China ranked 71st among 80 countries or regions with 0.3% palliative care access, indicating that the provision of palliative care and public awareness in China were still limited[1]. China gives great importance to education about "life" but rarely provides education and ignores discussion about "death". An important reason is the profound influence of Confucianism on traditional Chinese culture, which considers that it is taboo to talk about death and believes that the word "death" brings bad luck. Due to this negative and irrational attitude towards death, the individuals refuse to discuss anything related to death[2]. At the same time,

the inadequate palliative care education in medical schools and traditional medical ethics has led to the lack of understanding of the subject among doctors and nurses[3]. Even among the medical personnel who know about palliative care, they still equate palliative care with "giving up" or shortening of their life span[4] and save the lives of terminally-ill patients "at all costs" [5]. This indicates that China lacks professional palliative care personnel who can provide palliative care services.

Chan et al.[6] investigated the hospice care behavior and self-efficacy of 338 nurses and found that the number of patients cared for did not affect the self-efficacy of nurses but the willingness and emotions of patients directly affected the self-efficacy and work execution of nurses. Yang et al.[7], a scholar from Taiwan, investigated the relationship between the nurses' emotional distress and self-efficacy in coping with death while taking care of the dying patients. The results showed that the young and junior nurses exhibited higher emotional distress, which was negatively correlated with their self-efficacy in coping with death. A previous study has shown that knowledge and nursing experience in palliative care are the key factors in improving self-efficacy[8]. Literature has also pointed out that most of the nurses are aware of the insufficient education and training in death-related care at the end of life. In particular, the new staff in the intensive care unit, who take care of the patients with complex diseases, often feel inadequate to care for the patients at the end of their lives, resulting in physical and mental exhaustion, poor working ability, and increased staff turnover rate[9, 10]. The emergency medical staff generally consider that the patients are exposed to the emergency unit for a short period; therefore, there are practical difficulties in providing end-stage care to them[10]. The main obstacles for nurses to take care of the patients at the end of their lives include their low awareness of palliative care guidance, lack of education and training for palliative care by hospitals, and lack of participation by most of the nurses in palliative care education courses, thereby affecting their nursing guidance ability[11]. According to a survey by Zheng et al.[12], the working years, the past behavioral experience of end-stage nursing, and the perceived importance of nurses are positively correlated with the self-efficacy of palliative care. However, Pfister et al.[13] found that the hospice care knowledge and self-efficacy were positively and negatively correlated with the work experience, respectively. Other studies have shown that the nurses with relevant work experience, age of > 36 years, female, and formal training in hospice care scored higher in communication self-efficacy[14]. Based on the above literature, the age, gender, work experience, work unit, willingness, and attitude of nurses to nursing patients, knowledge and attitude to palliative care, and other factors might affect their self-efficacy but the correlation between some variables is still divergent.

The self-efficacy level of nurses affects the degree of their job involvement; the self-efficacy can stimulate people's enthusiasm and improve their happiness, thereby improving the sense of career benefit[15]. Therefore, along with improving the quality of palliative care, the alternative ways to improve the self-efficacy level of nurses to cope with death and to improve the overall service rate of the nursing team should also be considered. Death coping self-efficacy (DCS) refers to whether a nurse has the confidence to timely provide hospice care to dying patients and assist their family members, which include the confidence to evaluate needs, dealing with care problems, management of symptoms and providing information, coping with the death of a loved one, and planning her own death’s preparation. A couple of studies have shown that the self-efficacy of nurses to cope with death is an important factor, which

affects their job burnout and turnover rate and determines the quality of palliative care work to a certain extent[15, 16]. For the medical professionals, if their self-efficacy to cope with death is improved and self-adjustment is made, their body and mind will be buffered between the negative behaviors or unhealthy emotions, and the nurses' job satisfaction and sense of organizational support will be improved[17, 18].

It is an important problem to improve the self-efficacy of nurses to cope with the death of patients. However, the studies have shown that the attitudes of Chinese nurses and their cognitions towards death are at a low level. At present, most of the studies on death focus on their attitude level, while there are few empirical studies on the self-efficacy of nurses. Therefore, this study intended to analyze the status quo of the clinical nurses' self-efficacy to cope with the death of patients and discussed its influencing factors. This study will serve as a reference for the human resource management, utilization of medical institutions, and seeking the stability of nurses’ manpower and will also contribute to the improvement of nurses' work and hospice care service quality in the hospitals.

Methods

Design and Setting

The study was conducted using a questionnaire survey among the clinical nurses in a tertiary hospital in Hangzhou, China from August to September, 2020, by the means of convenience sampling.

Participants

The inclusion criteria for the participants included: nurses who cared for terminally ill patients; nurses who willingly gave informed consent and cooperated with the investigator; and the clinical nurses who held a nursing qualification and were registered for the job. The exclusion criteria included: nurses on rotation or training and the nurses in a supply room, operating room, logistics department, medical technology department, and other non-clinical front-line registered nurses.

The statistical software G-Power 3.1 was used to estimate the sample size, which was calculated to be 210. Taking into account the possibility of dropping or missing out during the study, an additional 10% of the study subjects were selected and the total number of participants selected as a sample was 250. In order to reduce the sampling error and make the conclusions more reliable, the sampling size was set to 600 participants. A total of 600 questionnaires were sent out, of which 572 were valid.

Instruments

Questionnaire for General Information

A total of 10 parameters were investigated, which included gender, age, education background, department, marital status, religious belief, years of clinical work, attendance of hospice care education courses within a year, the experience of accompanying the family members of the deceased, and attitude towards death. Participation in the palliative care education course was defined as online or offline

training on palliative care-related knowledge content, in which the nurses participated and each training session was not less than 40 minutes.

Death Coping Self-efficacy Scale (DCSS)

Death Coping self-efficacy Scale (DCSS) was originally compiled by an American scholar Robbins[19] for the hospice wards in 1992, which has good reliability and validity. In 2006, Professor Zhang[20], a scholar in Taiwan, compiled the DCSS in hospice wards and formed its Taiwanese version, which has widely been used as a measurement tool to study DCS in Taiwanese nurses[18].

The DCSS has 29 questions and 3 dimensions, including 12 questions on hospice care. It evaluates the nurses' confidence in taking physical and spiritual care of the dying patients and their families. Nine questions are on grief management, which assesses the nurses' confidence in dealing with their grief in the face of the death of others. Eight questions are on the preparation for death, which assess the caregivers' confidence in planning their death preparation. The expert validity test value of DCSS, measured in this study, was 0.97; the three subscales ranged from 0.857 to 0.893; the Cronbach's α value of the total scale was 0.905. Likert Scale 5-point scoring method was adopted for the scale, which ranged from 1 (surely not) to 5 (surely yes), with a total score of 29–145. The scores of questions in each dimension were added together as the score of the nurses' ability to cope with the death of patients. Higher the score, the more self-efficacy they had in coping with the death and vice versa. In this study, the Taiwanese version of DCSS was used to evaluate the nurses' death-coping score.

Data Collection

According to the purpose of this study and relevant literature, the questionnaire survey was adopted as the method for the collection of data. The investigator and 2 nurses conducted the field investigation in each department to distribute the questionnaires and explained the study purpose and method of questionnaire collection for the data collection. In the course of the study, all the relevant data and questionnaire contents of the subjects were first coded and then recorded by the computer using an anonymous method. The answer time was 8 to 15 minutes. After the questionnaires were collected, the answers are reviewed and sorted out. The valid questionnaires were then coded and the data was processed using the quantitative method. This study was approved by the Research Ethics Committee of the Sir Run Shaw Hospital, College ofMedicine, Zhejiang University (No.20201029-31).

Quality Control

In order to avoid answer biasness, the data about the training purpose of researchers, matters needing attention, and the methods of questionnaires" collection was collected before the questionnaires were distributed.

The integrity of the returned questionnaires was checked and the invalid questionnaires were excluded. The exclusion criteria of the questionnaires were as follows: all or the basic questions, which had the same answers or missed more than 10% of the answers; and there were obvious logical errors in the questionnaire.

Data analysis

After the collection of questionnaires, the data was imported to EpiData3.1 and the statistical software IBM SPSS Statistics 26.0 was used as the main statistical analysis tool. The analysis methods were as following: the general information of nurses and the status of DCSS were described by mean, percentage, and standard deviation; the Chi-square test, independent sample *t*-test, one-way analysis of variance, and multiple post-mortem comparison tests were used to analyze the differences in gender, age groups, titles, departments, and other demographic data in DCSS; the multiple linear stepwise regression analysis was used to analyze the influencing factors of the DCSS of nurses. All the tests were conducted on both sides. The test level $\alpha = 0.05$ and $P < 0.05$ indicated statistically significant differences.

Results

A cross-sectional study design was adopted in this study. The subjects were selected by convenience sampling method. A total of 600 questionnaires were sent out and 594 were recovered. The incomplete and invalid questionnaires were removed, leaving behind 572 valid questionnaires with a valid questionnaire rate of 95.3%.

Sample Characteristics

The details of the 572 clinical nurses are as follows: 569 women, accounting for 99.5%; married nurses accounted for 57.2%; the mean age of the nurses was 32.4 ± 7.1 (ranged from 23 ~ 54) years old; most of the nurses (73.1%) had clinical working experience of ≤ 10 years; 518 nurses had bachelor's degree, accounting for 90.6%; 43 nurses had master's degree, accounting for 7.5%; 94.8% of the nurses had no religious beliefs; 38.5% of the nurses did not attend the hospice care education courses within the last one year; 35.3% of the nurses had experience in accompanying the family members of deceased; 59.4% of the nurses said they would accept death. The detailed information is listed in Table 1.

Table 1
Sample Characteristics (N = 572)

Variable	Category	Frequency (N)	Percentage (%)
Gender			
	Male	3	0.5
	Female	569	99.5
Marital status			
	Single	238	41.6
	Married	326	57.0
	Divorced	8	1.2
Age			
	≤ 30	348	60.8
	31 ~ 40	187	32.7
	≥ 41	37	6.5
Length of service (yrs.)			
	≤ 10	418	73.1
	> 10	154	26.9
Department			
	Surgical	213	37.2
	Medicine	245	42.8
	ICU	28	4.9
	Oncology ward	52	9.2
	Emergency	34	5.9
Educational background			
	Associate (College)	11	1.9
	Bachelors (University)	518	90.6
	Masters	43	7.5

Note: DCSS, Death Coping Self-Efficacy Scale; ICU, intensive care unit

Variable	Category	Frequency (N)	Percentage (%)
Religious affiliation			
	Yes	30	5.2
	None	542	94.8
Attended hospice care education courses within one year			
	Yes	352	61.5
	No	220	38.5
Personal bereavement experience			
	Yes	202	35.3
	No	370	64.7
Attitude in talking about death			
	Feeling uncomfortable	158	27.6
	Trying to avoid	74	12.9
	Quite open	34	59.4
Note: DCSS, Death Coping Self-Efficacy Scale; ICU, intensive care unit			

Status Quo of the DCSS of Clinical Nurses

Among the three dimensions of DCSS, the highest score was that of hospice care ability, while the lowest score was that of coping with grief. The scores of each dimension and parameter are listed in Table 2.

Table 2
Mean scores of the DCSS of nurses (n = 572)

Variable	Total mean score	Mean parameter score
Hospice care	47.43 ± 5.81	3.95 ± 0.48
Coping with grief	27.14 ± 4.50	3.39 ± 0.56
Preparation for death	28.01 ± 5.58	3.11 ± 0.62
Total DCSS score	102.58 ± 12.07	3.48 ± 0.42

Table 3 enlists the descriptive statistics of DCSS and its subscales, including hospice care, coping with grief, preparation for death, and other parameters. The average DCSS score was 10.46 (*SD* 1.27), while that for the subscales were as following; 3.95 (*SD* 0.48) for hospice care, 3.11 (*SD* 0.62) for coping with

grief, and 3.39 (*SD* 0.56) for preparation for death. Among the 25 parameters, ‘tolerance for spiritual and religious differences’ showed the highest mean (4.30), while ‘coping with the death of your child’ (parameter 22) showed the lowest mean (2.41).

Table 3
Descriptive statistics of DCSS and its subscales, including hospice care, coping with grief, preparation for death, and other parameters.

Item No	Subdomain	Item	Mean (*SD*)
4	Hospice Care	Listen to the family of a dying patient	4.15(0.623)
11	**Hospice Care**	**Allow a patient to communicate fully**	**4.30(0.593)**
16	Hospice Care	Visit a dying friend	4.16(0.653)
25	Hospice Care	Tolerate spiritual and religious differences	4.25(0.571)
3	Hospice Care	Listen to the concerns of a dying patient	4.21(0.575)
5	Hospice Care	Identify the concerns of a dying patient and his/her family	3.91(0.665)
17	Hospice Care	Provide emotional support for the patient's family	3.96(0.643)
27	Hospice Care	Care for me if I am experiencing stress in caring for a dying patient	3.90(0.636)
28	Hospice Care	Be with a person at the time of death	3.79(0.717)
10	Hospice Care	Ask to know if someone close to you has a terminal illness	3.83(0.803)
20	Hospice Care	Attend a funeral or wake where the casket is open	3.59(0.939)
1	Hospice Care	Be sensitive to the needs of the patient	3.48(0.716)
21	Coping with Grief	Understand bereavement and grief	4.01(0.724)
6	Coping with Grief	Handle the illness of your child	3.89(0.712)
26	Coping with Grief	Cope with the death of a pet	3.56(0.821)
7	Coping with Grief	Handle knowing that a family member has a fatal condition	3.29(0.801)
24	Coping with Grief	Cope with the death of a friend the same age as you	3.21(0.805)
15	Coping with Grief	Cope with the death of your father	2.64(1.024)
22	**Coping with Grief**	**Cope with the death of your child**	**2.41(1.012)**
23	Coping with Grief	Handle the death of your spouse	2.47(1.022)
13	Coping with Grief	Cope with the death of your mother	2.53(1.034)
2	Preparation for Death	Buy life insurance	3.62(0.900)
9	Preparation for Death	Listen to a news report of multiple deaths	3.78(0.753)

Item No	Subdomain	Item	Mean (*SD*)
18	Preparation for Death	Write a living will	3.47(0.858)
8	Preparation for Death	Prepare your will	3.51(0.844)
19	Preparation for Death	Plan your funeral service	3.03(0.869)
29	Preparation for Death	Prepay your funeral	2.92(0.818)
12	Preparation for Death	Purchase your cemetery plot	2.98(0.869)

Regression Analysis of DCSS

The scores of nurses' DCSS were taken as the dependent variable and the factors with statistical significance in general data were taken as the independent variables. Multiple stepwise regression analysis was conducted according to the levels of $\alpha = 0.05$ in the entry model and $\alpha = 0.10$ in the exit model. After the final entry into the equation, the factors were respectively analyzed for attending the hospice care education courses within the last one year, personal bereavement experience, and the score of attitude in talking about death, which are listed in Table 4.

Table 4
Regression analysis of nurses' DCSS

Independent variables	*B*	*SE*	*β*	*t*	*P*
Constant	68.565	4.130	-	16.600	< 0.001
Attending hospice care education courses within one year	-2.980	0.901	-0.136	-3.749	< 0.001
Personal bereavement experience	2.380	0.921	-0.118	-3.237	< 0.001
Attitude in talking about death	3.182	0.504	0.145	3.966	< 0.001
Note: *β*: beta values; S*E*, Standard error (unstandardized regression coefficient).					

Tolerance: .610-.862

Discussion

The results of this study showed that the score of each parameter in the DCSS was (3.48 ± 0.42), with the mean score of 3 as an intermediate criterion, indicating that the overall score of the nurses' DCSS was at

a moderate level. In this study, the total score of nurses' DCSS was 102 points, which was lower than that of Zhang et al.[20] (total score: 110.67 points), which might be attributed to the differences in research subjects. The subjects in this study were relatively young and had relatively low seniority (average 32.4 ± 7.1 years old, with seniority ≤ 10 years), while that of Zhang et al.[20] were nurses in hospice care wards in Taiwan, who had more death-coping experience with patients. These results were in agreement with that of Bandura et al.[21], suggesting that self-efficacy was related to mastery experience.

Among all the dimensions, hospice care had the highest average score of (3.95 ± 0.48). From the single question average of hospice care parameter, the average score of "Allow a patient to communicate fully" was 4.30 points. "Tolerance of spiritual and religious differences" scored an average of 4.25 points, which was higher than the average of 3.95 points. Effective care can promote health and the art of nursing is mainly expressed through caring[22]. A study has have shown that nursing care is positively correlated with satisfaction; the higher the frequency of nurses having caring behavior, the higher would be the satisfaction of patients with nursing care[12]. Ling et al. [2] suggested that the priority of palliative care was to provide patients and their families with comfort, the satisfaction of needs, a healthy environment, emotional support, protection of privacy, and respect. At the same time, nursing itself is a representative group of the helping industry; therefore a therapeutic environment with a caring atmosphere should be created. Through the characteristics of respect, focus, and care, the patients and their families can be assisted to resolve the negative emotional reactions and respect the needs of patients [23].

According to the score, the score of grief coping parameter was the lowest, which was consistent with the results of a previous study [18]. The average score of "Coping with the death of your child" was 2.41 and that of “Handle the death of your spouse" was 2.47, which were lower than the average score of 3.11 in the grieving response parameter, indicating that their ability to cope with the death of their loved needs to be improved. The might be due to the polarized attitude of medical staff in dealing with the death of the patients. They are impersonal when dealing with the death of the patients and can prevent the problems faced by the patient through their professional role and expectations by social work. However, when facing the death of their loved ones, their cognition might be more prone to negative emotional reactions, making them unable to rationally deal with the death problem. A survey conducted by Kapoor et al. [24] found that some nurses believed that the professionals must cover up the sadness and that the expression of sadness might be regarded as "unprofessional" and "weak". The nurses did not want formal support; otherwise, they could not deal with their work emotionally and would rather rely on the informal networks of colleagues and friends outside of the unit to talk about work. Bandura's self-care theory[25] suggested that the nurses need to clarify the influence of self-loss or death experience on themselves, adjust their self-identity, find the meaning of events through the death experience, and accept the social support from others. The support of leaders and colleagues might have a positive impact on the nurses, especially the full support of colleagues is an important source of comfort for the clinical nurses to cope with the death of patients[18]. At the same time, the sense of life, psychological distress, sense of job burnout, and low negative emotions of nurses[26] suggest that the clinical nurses, in addition to focusing on solving the problem of patients, should form a group or end-of-life care facility for the life and death issues, which should assist with emotional relief and signify their existence and value. It is also possible

to try “pause” or mindfulness-based stress reduction training to prevent the accumulated distress and burnout[27, 28], which might strengthen the self-efficacy of nursing staff in coping with death.

In terms of the average score of a single question for the parameters of death preparation, the parameter "Prepay your funeral" had the lowest score, while the parameter "Purchase your cemetery plot" ranked second lowest. This might be the young age of the people included in this study, which was ≤ 40 years old for 93.5% of the subjects. In addition, the Chinese cultural background tends to avoid talking about death. Therefore, the nurses were reluctant to face this issue and less prepared about their death, such as the wills or plans for their future funerals [2]. At the same time, studies show that the nurses seldom talk about death and also lack knowledge and skills about death communication[29, 30]. China Taiwan amended the palliative care medical regulations in 2013 and implemented the Patient Autonomy Rights Law in 2019, making the concept of palliative care and not performing non-cardiopulmonary resuscitation more popular and gradually paying attention to the concept of pre-existing medical decisions. The patients can pre-sign and choose not to perform life-saving medical treatment or remove the ineffective ones. The patients can think about not accepting invalid medical treatments at the end of their lives as early as possible and the medical staff can also discuss with the patients and their families in clinical practice to shorten the suffering of patients at the end of their lives. Huang et al.[31] also suggested that when the participants were willing to actively discuss with the patients how to face death or complete their unfinished matters, they learned from it how to face their true inner selves. This also influenced the personal beliefs and values of the participants through situations, such as personal reflection, which promoted the coping strategies for death and improved the quality of care.

The main influencing factors of clinical nurses' DCSS were: whether they attended hospice care education courses within the last one year, their experience of accompanying the family members of the deceased, and their attitude towards death.

Most of the literature supported that older people are more receptive to death than younger people, which was related to the clinical work experience of the study sample[15, 18, 32]. A study of nurses in hospice care units as respondents found that as they grew older and had more work experience, their self-efficacy in coping with hospice care, grief and death became higher[20]. In this study, the age and clinical experience did not show independent significance after the adjustment for basic attributes by multiple linear regression analysis. The reasons might include: the subjects in this study were mostly young and junior (32.4 ± 7.1 years old on average, with experience less than 10 years); and the hospital investigated in this study carried out the hospice joint nursing in 2019 and gave great importance to the hospice care training of nurses of various professional titles and levels. In addition, a study[33] found that the nurses, working in ICUs, with religious beliefs had better abilities of near-death management, death thinking and expression, and life examination. However, this study found that the religious beliefs had no effect on the DCSS, which might be because 94.2% of the surveyed nurses in this study had no religious beliefs. Therefore, the age, clinical work experience, religious beliefs, and other factors had little influence on the nurses' DCSS, which is needed to be confirmed in studies with a large number of participants.

The nurses, who attended palliative care education courses within the last year, had higher DCSS scores, which was consistent with the results of Kim et al.[34] and Evenblij et al.[14], suggesting that the palliative care education courses could be an effective strategy to improve the nurses' DCSS. Yang et al.[7] found in their study that the higher the number of end-of-life care courses the nurses received, the more they could understand the course and stages of death, recognize the emotions and needs of dying patients, and positively think about the facts related to death. Dehghani et al.[35] carried out a hospice care training program in Iran, in which 40 nurses were randomly selected and trained four times, each session lasted for 45 minutes. Through the questionnaire data analysis, they proved that the training significantly improved the nurses' sense of self-efficacy. White et al.[36] supported and trained the nurses remotely using video conferencing, a network communication platform, and group discussions, for the 6 months of 2-hour palliative care teaching and case discussion and suggested that the nurses' knowledge and self-efficacy of palliative care were significantly improved after training.

The experience of accompanying the family members of the deceased is one of the influencing factors of the nurses' DCSS, which was consistent with the results of Cheung et al.[17] and Ay et al.[37]. The might be because the nurses could project their own rich experience of end-of-life care to the patients, thereby showing their caring behavior with empathy. In addition, some studies[32] have shown that the contact with the palliative care team and experience in accompanying the family members of the deceased can provide more care to the dying patients in the aspect of their psychology and spirituality, discussion of non-resuscitation (DNR) and palliative care[11].

The results of this study indicated that the attitude towards death was an important factor, affecting the nurses' DCSS. Among them, the nurses scored the highest for open acceptance and the lowest for fear of death. The reason may be that the nurses felt frustrated in diagnosing and treating the dying patients and felt that it was not easy to establish a relationship with the family members of the deceased, thereby hoping not to face the death of patients[11]. The results of a relevant study[38] showed that the nurses' fears included the fear of losing close people, sadness upon seeing their relatives and friends sick, uncertainty about the time of death of patients, and the subsequent treatment of death events (fear of body care, funeral planning, etc.). It has been reported that the open acceptance of nurses' attitudes towards death was positively correlated with their attitude towards dying patients and work engagement[15]. The fear of death and escape were negatively correlated with the sense of the meaning of the nurses’ life and tended to cause negative emotions[39]. In addition, the clinical departments often faced the powerlessness of dying patients; and the inability of the treatment of disease could produce emotional distress among nurses, which could lead to job burnout feelings[15]. The job burnout feelings among nurses could directly affect the quality of care and professional academic performance[40] and are resulted in low DCSS and demand, It also indicated that the positive attitude towards end-of-life care was positively correlated with the ability to solve the end-of-life-related problems[41].

The discussion of the findings and end-of-life care could deduce the following suggestions for reference. (1) In clinical practice: Based on these results, the hospice ward nursing staff in hospice care knowledge and self-efficacy than the end of shortage, it serves to show the clinical practice of distance can provide

the high quality comprehensively the goal of hospice care, is still to be done. It is suggested that the hospitals should educate and train the front-line medical personnel. The formal announcement of patients' autonomy legislation in Taiwan in 2019 presented an important role of the medical personnel in the medical decision-making process, confident and positive professionalism, and the assistance to dying patients and their families to have the independent medical right. (2) Education and training: This study suggested that, for the nursing staff outside the hospitals or school education training, the medical department should conduct periodic end-of-life care courses and self-efficacy surveys, as well as organize the relevant on-the-job and cross-training or interdisciplinary case discussions. This will enhance the knowledge and attitude of nursing staff towards terminally-ill patients and their confidence in nursing behavior, thereby enabling the patients and their families to obtain a comfortable physical, mental, spiritual, and social comprehensive end-of-life care.

Among the limitations of this study, a self-assessment questionnaire was adopted, which could be affected by personal cognition and social and cultural expectations or limitations. In future studies, long-term in-depth interviews should be conducted for the qualitative analysis or retrospective research, and the individual differences in the mortality of individuals should be considered to achieve perfect results.

Conclusions

The self-efficacy of nurses in coping with death was at a moderate level with a higher average score for the hospice care parameter and the lowest score in coping with the grief.

The nurses, who had attended the hospice care education courses within the last year, had the experience of accompanying the family members of the deceased, an open attitude towards the death, and higher self-efficacy in coping with death. The clinical intensive management should guide and help the nurses in setting up the correct concept of death and promote an ideal and independent life of the nursing staff. The management should also provide hospice palliative care training to improve the coping self-efficacy of the death of the nursing staff to better and positively and constructively dealing with the troubles and worries, which will promote empathic and patient-centered critical care.

Abbreviations

DCS
Death coping self-efficacy
DCSS
Death coping self-efficacy scale

Declarations

Ethics approval and consent to participate

This study was approved by the Research Ethics Committee of the Sir Run Shaw Hospital, College of Medicine, Zhejiang University (No.20201029-31). All methods were performed in accordance with the relevant guidelines and regulations. Electronic written informed consent was obtained from all participants voluntarily and anonymously.

Consent for Publication

Not applicable.

Availability of data and material

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Competing interests

None.

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Author contributions

Study design: XL1, QL. Data collection: XL1, XL2, WX. Data analysis: XL1, XL2. Study supervision: QL, WX. Manuscript writing: XL1, QL. Critical revisions for important intellectual content: XL1, QL. All authors read and approved the final manuscript.

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