The Influence of Clinical Nurses' Empathy on their Death Competence: A Cross-Sectional Survey Study

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Abstract

Background

Empathy and death competence are important competences for clinical nurses. However, there is no clear consensus about what impact empathy has on death competency. Our study aimed to understand the status of the empathy and death competence of clinical nurses in China and to explore the effect of empathy on their competence.

Methods

For a survey conducted from May–June 2021, 1415 clinical nurses were selected by convenience sampling as the research objects. The Coping with Death Scale, the Jefferson Scale of Empathy–Health Professionals and a general information questionnaire designed by the researchers were used to investigate the status of the empathy and death competence of clinical nurses. The relationship between empathy and death competence was analysed by Pearson correlation, and the influence of the empathy of clinical nurses on their death competence was analysed by a hierarchical regression model.

Result

Pearson correlation analysis revealed that death competence was positively correlated with each dimension of empathy. Hierarchical regression model analysis revealed that after controlling for the influence of general information, nurses' empathy had a significant influence on their death competence, and this independently explained 5.8% of the variance in death competence.

Conclusions

The death competence of the clinical nurses in this sample was moderate to low level. Emotional nursing and transposition thinking are important influencing factors of death competence. Nursing managers should improve the empathy of clinical nurses to promote their death competence.

Introduction

Death competence, (Bugen et al., 1978, Robbins et al., 1991) also known as death self-efficacy, based on the self-efficacy theory of Bandura (1997), refers to the expression of a range of human skills and abilities in coping with death and an individual's faith and attitudes about these abilities. Nurses' death competence is defined as the professional skill of tolerating and managing clients' problems related to dying, death, and bereavement (Louis et al., 2012).

Nurses must face death during their clinical work, and dealing with death is one of the most challenging problems for those working in the nursing industry (Peterson et al., 2010, Xu et al., 2017). Insufficient death competence can seriously affect the overall quality of care provided by and the physical and mental health of nurses and can lead to mental fatigue and high turnover among nurses (Dong et al.,

2015). Previous studies (Zheng et al., 2020, Akdeniz et al., 2019) have pointed out that nurses are the largest group of workers providing patient clinical care, and their death competence affects the quality of the care that they provide to dying patients (Zheng et al., 2020, Akdeniz et al., 2019). Deficiencies in coping with death are reported to have negative effects on nurses, such as fear and tension in dealing with death, death anxiety, job burnout, loss of self-confidence and health problems (R et al., 2016, Galiana et al., 2019).

In 1975, Rogers proposed empathy as an individual's ability to think in different ways than his or her own experience leads them to do (Che, 2003). Previous studies (Sansó et al., 2015, Mottaghi et al. 2020) have shown that good empathy can not only effectively improve nurses' ability to cope with death but also improve patients' treatment compliance and satisfaction and reduce the risk of medical accident litigation. Empathy is a necessary ability for clinical nurses that enables them to correctly perceive and understand the emotions of their patients in nursing practice and has a positive impact on the treatment process (A et al., 2020, Dong et al., 2021). It has been reported that empathy is a basic part of the treatment relationship and the key factor by which patients define the quality of the care they receive. Therefore, more studies need to explore the effect of empathy on death competence.

It has been reported that nurses' lack of empathy increases their risk of empathy fatigue and reduces their death competence (He et al., 2020). In clinical practice, the death of patients inevitably leads nurses to experience negative emotions. Negative emotions can lead to a decline in empathy (Yu et al., 2016, Dalcal et al., 2020). When empathy declines, opportunities for nurses to communicate with patients and for nurses to provide help are limited. This reduces communication between nurses and patients, changes nurses' attitudes towards end-stage patients, and even increases their indifference to death (He et al., 2019, Kesbakhi et al., 2020). Therefore, good empathy is crucial to nurses' death competence.

At present, the relevant research in China has focused mainly on death attitudes and death education and less on death ability. Therefore, the purpose of this study was to investigate the status of the empathy and death competence of clinical nurses in China, to determine the relationship between their empathy and death competence, to explore the influence of clinical nurses' empathy on their death competence, and to provide theoretical guidance for improving the death competence of clinical nurses.

Methods

Design and participants

This was a cross-sectional study of online questionnaire data. A convenience sampling method was used to invite clinical nurses working on the front lines to participate in this online survey via convenience sampling from May–June 2021. All participants accessed the questionnaire by clicking on an online survey link. Participants were allowed to submit the questionnaires only when all the items were finished. To avoid repetition, an IP limitation was applied, which meant that the questionnaires could be completed only once from any single IP address. According to the sample size estimation method proposed by Kendal (Wang et al., 2009), the sample size should be equal to 20 times the number of entries in the

questionnaire with a missing data rate of 20%; therefore, it was estimated that at least 1200 responses to the questionnaire were required. Finally, 1511 clinical nurses from 14 tertiary hospitals in Hunan and Xinjiang Provinces were enrolled via convenience sampling. The inclusion criteria were as follows: 1. registered nurse, 2. clinical front-line nurse, and 3. informed consent given to participate in this study. The exclusion criteria were as follows: 1. being on holiday (such as maternity leave or sick leave), 2. being temporarily reassigned away from front-line nurses, or 3. being an intern or being retrained.

Variables and measurement

The variables were collected via three methods.

1. General information questionnaire: After consulting the literature and gathering suggestions from relevant experts, we compiled a general information questionnaire that mainly surveyed demographic data and work-related information. The contents covered participants' age, gender, city, marital status, parenthood status, education level, department, years of work experience, professional title, employment contract type, average number of working hours per week, monthly income, number of deaths experienced during their career, religious beliefs, intention to engage in hospice care, and experience with family discussions about death and experience with death.

2. Coping with Death Scale (CDS): The scale was the first tool developed to measure death competence. It was compiled by Bugen (Buge et al., 1980) and tested for reliability and validity by Robbins (Robbins et al., 1991). It was first used to test the death competence of nurses. Zeng (Zeng, 1999) translated the scale to Chinese. The scale is composed of 30 items and 8 dimensions and uses a 7-item Likert scale, where 7 indicates "complete consent" and 1 indicates "complete disagreement". The total score ranges from 30 to 210. The higher the score is, the stronger the respondent's death competence is. The CDS scale can comprehensively evaluate death competence and is widely used in China and abroad (Chen et al., 2019). The current study used Tanghuan Zeng's translated scale.

3. The Jefferson Scale of Empathy—Health Professionals (JSE-HP): The scale was compiled by Hojat and translated by An (An et al., 2008). The Cronbach's α coefficient of the scale was 0.739, indicating good internal consistency and high reliability. The JSE-HP has a total of 20 questions covering three dimensions. Each item is scored with a 7-item Likert scale, with 1 point indicating "strongly disagree" and 7 points indicating "strongly agree". The total score range of the scale is 20 to 140 points. The higher the score is, the stronger the respondent's empathy is.

Analysis

SPSS24.0 software was used for data analysis. Count data were described by frequency and percentage, and measurement data with a normal distribution were expressed as the mean $\pm$ standard deviation. Independent sample t tests, one-way ANOVA and Mann-Whitney U rank sum tests were used to compare the nurses' death competence scores. Pearson correlation was used to analyse the relationship between

nurses' empathy and death competence. Hierarchical regression analysis controlled general data to explore the influence of nurses' empathy on death competence. The α for this test was 0.05.

Ethical considerations

All procedures involving human participants were approved by the Ethics Committee of Biomedical Research of Jishou University (NO. JSDX-2021-0023). The survey began with the participants providing informed consent for the study by reading the informed consent form and agreeing to participate in the study. This project follows the relevant provisions of the Ethical Review of Human Biomedical Research (Trial) and Helsinki Declaration of the Ministry of Health on biological human experiments.

Results

In this study, the researchers were trained to administer the questionnaire survey to clinical nurses to ensure consistency across all included hospitals in Hunan and Xinjiang Provinces. Subjects' consent was obtained before the survey using the same method. A total of 1511 questionnaires were distributed, and some questionnaires that were invalid because the answers were illogical (the difference between the number of years of work experience and age was less than 16 years) were excluded. There were 1415 valid questionnaires, and the effective recovery rate was 93.6%.

Current death competence and empathy of clinical nurses

The scores of the clinical nurses' death competence are shown in Table 1, and the empathy score was 103.08 ± 16.464 ; within this, the opinion taking score was 55.96 ± 10.373 , the emotional nursing score was 38.28 ± 8.824 , and the transposition thinking score was 8.85 ± 2.828 .

Single-factor analysis of the death competence of clinical nurses

There were no significant differences among clinical nurses in terms of their gender, marital status, parenthood status, educational background, hospital level, monthly income, religious beliefs, experience writing a prenatal will for themselves or death competence ($P < 0.05$). The items with statistically significant differences are shown in Table 2.

Correlation analysis of the death competence of clinical nurses

The correlation between empathy and the death competence of clinical nurses was analysed. Death acceptance was negatively correlated with opinion selection ($P < 0.01$), treatment loss was negatively correlated with opinion selection ($P < 0.05$), and others were positively correlated. The details are shown in Table 3.

Hierarchical regression analysis on the factors influencing the death competence of clinical nurses

The independent variables with statistical significance ($P < 0.05$) were included in the correlation analysis. Hierarchical regression was performed with the death competence score as the dependent

variable. The first layer was added to the general data, and the second layer was added to the empathy dimension scores. The variable assignment method is shown in Table 4.

The results showed that being ≥ 51 years old, being willing to engage in hospice care despite uncertainty about doing so, having discussed death with their family, practicing emotional care and practicing transposition thinking had an impact on the death competence of clinical nurses ($P \leq 0.05$), as shown in Table 5.

Discussion

This survey showed that the death competence score of the clinical nurses was 106.48 ± 23.038 , which was lower than the scores found in related studies (Sansó et al., 2015, Li et al., 2020). These differences are likely due to these previous studies considering palliative care personnel and oncology nurses who, compared with the sample in the current study (nurses working in general departments such as internal medicine, surgery, and paediatrics), have more frequent contact with death and death experiences, thus resulting in the former group's higher scores. The highest death thinking score and expression in each dimension was 19.93 ± 5.007 , indicating that the nurses in this study treated death rationally, possibly because most medical staff are forced to reckon with death for a long time, and had immunity to death, and allowing them to overcome the traditional difficulties that others face when considering such concepts. The lowest score on the processing loss dimension was 9.15 ± 3.399 , indicating that the ability of nurses to control their negative emotions in the face of death was weak, and they easily fell into a negative state. This may be related to the fact that clinical nurses spend more time than other nurses with patients and are susceptible to emotional resonance. This suggests that nursing managers should strengthen their care for clinical nurses. Once nurses show signs of experiencing negative emotions, they should be carefully guided in a timely manner to reduce the negative impact of adverse death events.

The results showed that the empathy of clinical nurses in this survey was at a middling level, at 103.08 ± 16.464 points, which was lower than the scores found in related research (Liu et al., 2017, Lu et al., 2017, Kobayashi et al., 2020) and was lower than the level generally expected by patients. This level therefore needs to be improved. After controlling for the influence of general information, the emotional nursing and transposition thinking dimensions of nurses' empathy independently explained 5.8% of the variation in death competence, and the scores of each dimension, ranked from high to low, were as follows: transposition thinking, emotional nursing and opinion taking ($P > 0.05$). Transposition thinking is regarded as the most important factor in nurses' death competence, and the reason for this may be that transposition thinking is not only a way for nurses to think about what their patients might need but also an ability to perceive what their patients are thinking and feeling. The stronger nurses' comprehension of patients is, the more they can empathize with their patients and the more aptly they can address their patients' needs. When the positive feedback of patients and their families increases, the nurses' sense of achievement increases, and the more actively they can cope with death. Second, emotional nursing education, as a new form of ideological education, can enable nurses to provide psychological assistance to patients, guide patients with an informed outlook on life and death, and establish a good

outlook themselves on life and death, which can effectively weaken their resistance to end-of-life work, promote doctor–patient interaction, and help nurses complete death-related work more smoothly. However, it is interesting that the stronger the nurses' perception is, the more likely they are to experience empathy fatigue (DC et al., 2017). There is a negative correlation between empathy fatigue and the death competence of nurses (Li et al., 2020), which indicates that it is critical for nurses' empathy and perception ability, possibly because medical staff provide long-term medical care to patients. Once they exceed the acceptable emotional limit, empathy fatigue occurs, and they will be consciously tired, exhausted and reluctant to provide assistance. However, due to the characteristics of their work, such assistance is passively implemented, and nurses' coping ability is low. Nursing managers should therefore set up mutual assistance and monitoring groups. The former helps alleviate negative emotions after empathy fatigue, and the latter can dynamically reveal the empathy status of nurses and provide timely support and help. However, there is still a lack of research on the critical value of empathy in China and abroad. Further research on the critical value of empathy for medical staff should be conducted.

The results of this study showed that nurses aged ≥ 51 years had superior death competence to those in other age groups, which is consistent with the results of related studies (Wu et al., 2018, Cheung et al., 2018). The rich clinical experience and strong anti-risk skills of senior nurses may explain why they were calmer in the face of patient death than more junior nurses, and the longer their experience, the more comprehensively they looked at things and the more knowledgeable they were about how to deal with death and near-death events. The nurses in Hunan had superior death competence than those in Xinjiang, which may be related to their geographical location or education level, the economic development in the area, or other factors. Nurses who are willing to engage in death-related work have a stronger death competence than those who are uncertain about or unwilling to do so. This may be because nurses who are willing to engage in death-related work are more likely to accept death and have better tolerance for death stressors, so they are more active in dealing with death. This suggests that nursing managers should pay attention to nurses' willingness to engage. Before being assigned to a job, nurses' willingness to engage should be investigated, and different personality traits should be identified to effectively improve the utilization of talent and the overall level of nurses' death competence. It is worth noting that there are still few studies on nurses' willingness to engage in hospice care in China or abroad. Future studies should focus on the correlation between nurses' willingness to engage in hospice care and death competence. Family members do not mind that nurses who talk about death when necessary have better death competence than nurses who never talk about death, which shows that nurses' death competence is affected not only by their own characteristics but also by their family environment. The understanding of death varies by family, possibly due to regional or cultural differences, differences in the traditional concepts they ascribe to, or other factors, and nurses with families that do not mind discussing death have significantly higher tolerance to death.

Strengths and limitations of the study

The results of this study on the influence of the empathy of clinical nurses on their death competence provide valuable information for health decision makers to correctly implement intervention plans and

preventive activities. It is worth emphasizing some limitations of this study. First, the nurses participating in this study were from Hunan and Xinjiang. Relative to the overall number of Chinese nurses, the sample was small, and its representativeness was limited. Second, this study was conducted via an online cross-sectional survey. The instability of the environment in which the nurses completed the form may have affected the final results. Therefore, the results of this study cannot fully represent the status of Chinese nurses.

Conclusion

In this study, the clinical nurses' death competence was at a mid to low level. The empathy of nurses (transposition thinking, emotional nursing) is an important influencing factor of death competence. At the same time, age, geographic location, willingness to engage in hospice care and experience with family discussions about death also affect nurses' death competence. Therefore, nursing managers should take measures according to the actual situations of the clinical nurses they supervise. For example, they should increase nurses' knowledge of death and experience in dealing with death by occasionally conducting special departmental seminars on death or setting up patient death simulation scenarios using scientific methods to cultivate nurses' emotional nursing and transposition thinking ability. Finally, nurses should be encouraged to talk to their families about death-related topics and convey an informed view of death.

Declarations

Ethics approval and consent to participate

The following information was supplied relating to ethical approvals (i.e., the approving body and any reference numbers): The Ethics Review Committee of Jishou University approved the study (JSDX-2021-0023). The survey began with the participants providing informed consent for the study by reading the informed consent form and agreeing to participate in the study. This project follows the relevant provisions of the Ethical Review of Human Biomedical Research (Trial) and Helsinki Declaration of the Ministry of Health on biological human experiments.

Consent for publication

At the beginning of the questionnaire, we obtained the consent of all participants, including their consent to the publication of the paper.

Availability of data and materials

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

Competing interests

Jiahao Wang, Zhengying Chen, Yiting Liu, Yamin Li, Xiaoli Liao and Liuxin Long declare that they have no conflicts of interest.

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Authors' contributions

Study design: Yiting Liu, Yamin Li, Jiahao Wang.

Data collection: Xiaoli Liao, Zhengying Chen, Jiahao Wang.

Data analysis: Liuxin Long, Jiahao Wang.

Manuscript writing: Yiting Liu, Xiaoli Liao, Jiahao Wang.

All authors have read and approved the manuscript.

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Tables

Table 1 Score of clinical nurses' death competence

	Minimum	Maximum	Average	SD	Variance
Death competence	32	175	106.48	23.038	530.739
Life inspection	5	24	15.01	2.868	8.223
Death acceptance	4	24	12.16	4.837	23.397
Endangered treatment	4	24	14.69	4.004	16.032
Expression of thoughts on death	5	30	19.93	5.007	25.071
Handling funerals	4	24	13.87	4.059	16.477
Handling loss	3	18	9.15	3.399	11.556
Talking about the deaths of others	3	18	10.28	3.522	12.404
Talking about their own death	3	18	11.39	3.567	12.726

Table 2 Single-factor analysis of the CDS of clinical nurses (n=1415, $\pm$ s)

Characteristics	N(%)	Death competence	t(1)/F(2)/Z(3)	P
Participant's age			4.21(12)	0.000*
19-25	205 (14.5)	107.63±21.96		
26-30	419 (29.6)	104.19±21.41		
31-35	405 (28.6)	104.70±23.20		
36-40	204 (14.4)	108.99±25.82		
41-45	104 (7.3)	108.90±22.37		
46-50	48 (3.4)	111.58±21.86		
≥51	30 (2.1)	121.00±26.57		
Gender			-0.46(73)	0.641
Male	44 (3.1)	106.66±16.33		
Female	1371 (96.9)	106.47±23.22		
City			3.00(21)	0.003*
Hunan	700 (49.5)	108.33±21.44		
Xinjiang	715 (50.5)	104.67±24.38		
Marital status			1.27(42)	0.280
Single	376 (26.6)	107.81±20.90		
Married	986 (69.7)	105.84±23.57		
Divorced/Widowed	53 (3.7)	108.81±27.06		
Parenthood status			0.22(71)	0.820
Yes	899 (63.5)	106.58±23.49		
No	516 (36.5)	106.29±22.26		
Educational level			1.90(52)	0.127
College degree or below	37 (2.6)	99.35±27.26		
Junior college	388 (27.4)	105.24±24.03		
Undergraduate	927 (65.5)	107.23±22.39		
Masters or above	63 (4.4)	107.27±23.04		
Department			2.02(72)	0.028*
Emergency/Outpatient	44 (3.1)	111.25±24.51		

Oncology department	70 (4.9)	110.59±22.95		
Intensive care unit	167 (11.8)	107.26±19.67		
Geriatric department	26 (1.8)	115.92±23.90		
Internal medical	304 (21.5)	106.81±23.21		
Surgery	296 (20.9)	106.73±22.59		
Department of obstetrics and gynaecology	108 (7.6)	104.05±25.03		
Paediatrics				
	217 (15.3)	103.04±24.14		
Psychology	8 (0.6)	98.63±24.03		
Operating room/Anaesthesiology				
	57 (4.0)	101.37±21.19		
Other (includes general medical department, interventional department, etc.)	118 (8.4)	109.14±23.26		
Years of work experience			4.4622)	0.012*
≤3	219 (15.5)	107.15±21.05		
4-10	603 (42.6)	104.41±22.23		
≥11	593 (41.9)	108.33±24.38		
Professional title			6.3332)	0.000*
Nurse	281 (19.9)	103.53±23.69		
Senior nurse	587 (41.5)	105.30±22.54		
Supervisor nurse	459 (32.4)	108.33±23.05		
Co-chief superintendent nurse or above	88 (6.2)	114.13±22.06		
Employment contract type			6.1742)	0.002*
Permanent staff	365 (25.8)	110.05±22.44		
Personnel agency	63 (4.5)	107.14±19.89		
Contract system	987 (69.8)	105.12±23.04		
Average number of working hours per week			6.5182)	0.000*
≤34	16 (1.1)	102.31±26.29		
35-48	1081 (76.4)	107.93±23.34		
49-55	226 (16.0)	102.58±24.70		

≥56	92 (6.5)	99.68±24.25		
Monthly income (¥)			2.3302)	0.098
¥5000	349 (24.7)	104.34±25.63		
5000-10000	927 (65.5)	206.96±21.82		
¥10000	139 (9.8)	108.66±23.87		
Number of deaths experienced during their career			5.0252)	0.000*
0	274 (19.4)	101.68±23.86		
1-3	366 (25.9)	105.30±22.93		
4-9	247 (17.5)	106.77±22.51		
10-20	303 (21.4)	110.03±22.53		
≥21	88 (6.2)	111.60±20.79		
Uncountable	137 (9.7)	107.55±23.39		
Religious beliefs			-0.2713)	0.786
Yes				
No	52 (3.7)	106.44±24.26		
	1363 (96.3)	106.48±23.00		
Intention to engage in hospice care			31.970 2)	0.000*
Willing	326 (23.0)	113.87±25.03		
Uncertain	581 (41.1)	107.01±21.35		
Reluctant	508 (35.9)	101.13±22.20		
Experience with family discussions about death and experience with death			21.443 2)	0.000*
Never	200 (14.1)	100.54±23.90		
Try to avoid discussing this issue	242 (17.1)	99.76±23.77		
Discussed when necessary				
Negligent	572 (40.4)	108.42±20.60		

Uncomfortable when discussing this issue	210 (14.8)	116.69±22.89
	191 (13.5)	104.19±23.59

* Represents statistically significant difference. 1. T value represents two independent sample t tests. 2. F value represents one-way ANOVA. 3. Z value represents the Mann-Whitney U test for independent samples.

Table 3 Relationship between empathy and death competence (n=1415, r value)

Project	Total empathy score	Perspective taking	Emotional nursing	Transposition thinking
Death competence	0.205**	0.075**	0.218**	0.233**
Life introspection	0.210**	0.151**	0.187**	0.080**
Acceptance of death	-0.014	-0.076**	0.030	0.102**
Endangered treatment	0.262**	0.134**	0.247**	0.255**
Expression of thoughts on death	0.295**	0.168**	0.273**	0.240**
Handling funerals	0.108**	0.021	0.124**	0.155**
Handling loss	0.008	-0.061*	0.040	0.138**
Talking about the deaths of others	0.122**	0.019	0.149**	0.170**
Talking about their own death	0.216**	0.092**	0.227**	0.202**

** At 0.01 level (double tail). * At 0.05 level (single tail). The r value represents the Pearson correlation coefficient.

Table 4 Independent variable assignment table

Variable name	Assignment description
Age	$\leq 25=1$, $26-30=2$, $31-35=3$, $36-40=4$, $41-45=5$, $46-50=6$, $\geq 51=7$ Hunan=0, Xinjiang=1
Province	Others as a reference, set dummy variables, X1= Emergency/Outpatient (0,1), X2= Oncology department
Department	(0,1), X3=ICU (0,1), X4= Geriatric department (0,1), X5= Internal medical (0,1), X6= Surgery (0,1), X7= Department of obstetrics and gynaecology (0,1), X8=Paediatrics (0,1), X9= Psychology (0,1), X10= Operating room/Anaesthesiology (0,1) 0-3=1, 4-10=2, $\geq 11=3$ Nurse=1, Senior nurse=2, Supervisor nurse=3, Co-chief superintendent=4
Year of work experience	Permanent staff as a reference, set dummy variables, X1= Personnel agency (0,1), X2=Contract system (0,1) $\leq 34=1$, $35-48=2$, $49-55=3$, $\geq 56=4$
Professional title	0=1, 1-3=2, 4-9=3, 10-20=4, $\geq 21=5$, Uncountable =6
Work contract form	Be willing to be a reference, set dummy variables, X1= Uncertain (0,1), X2=Reluctant (0,1)
Average working hours per week	Never a reference, set dummy variables, X1= Try to avoid discussing this issue (0,1), X2=Discussed when necessary (0,1), X3=Uncomfortable when discussing this issue (0,1), X4=Negligence (0,1)
The number of death events during career	
Willing to work in hospice care	
Discusses death with family	
Perspective taking	Original value entry
Emotional nursing	Original value entry
Transposition thinking	Original value entry

Table 5 Multivariate linear regression analysis of influencing factors of death competence of clinical nurses (n=1415)

	B	SE	β	t	P	R ²	ΔR^2	F	P
First floor						0.144	0.122	6.607	0.000
Age (≥ 51)	11.729	4.756	0.075	2.466	0.014				
Hunan Province	3.259	1.369	0.072	2.380	0.017				
Average working hours per week (≥ 56)	-4.821	2.442	-0.053	-1.974	0.049				
Willing to work in hospice care									
Uncertain	-6.265	1.500	-0.137	-4.176	0.000				
Reluctant	-12.323	1.547	-0.262	-7.964	0.000				
Discusses death with family									
Discussed when necessary	7.408	1.773	0.161	4.177	0.000				
Uncomfortable when discussing this issue	4.628	2.179	0.070	2.124	0.034				
Negligent	13.649	2.138	0.215	6.383	0.000				
Second floor						0.202	0.180	33.215	0.000
Age (≥ 51)	12.558	4.601	0.080	2.729	0.006				
Willing to work in hospice care									
Uncertain	-6.174	1.450	-0.135	-4.256	0.000				
Reluctant	-11.660	1.497	-0.248	-7.788	0.000				
Discusses death with family									
Discussed when necessary	6.350	1.722	0.138	3.688	0.000				
Negligent	11.726	2.081	0.184	5.634	0.000				
Emotional nursing	0.366	0.075	0.143	4.897	0.000				

Transposition thinking	1.177	0.227	0.147	5.196	0.000
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Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [questionnairedata.xlsx](#)
- [questionnaire.pdf](#)