Factors associated with death anxiety and nurses' preparedness to care for the dying patients with COVID-19

Shifa' Ayed Alrafati[1] · Ruqayya Zeilani[2] · Elham H. Othman[3]

Abstract

Death is the most traumatic life experience among humans. Nurses' caring for dying patients increases their death anxiety, especially during pandemics. This study examined factors associated with nurses' death anxiety and preparedness to care for dying patients diagnosed with COVID-19 in Jordan.

A cross-sectional correlation study recruited 400 nurses from six hospitals with specialized COVID-19 units in Jordan. Nurses have moderate levels of death anxiety and preparedness to care for the dying. Furthermore, the result revealed statistically significant differences in death anxiety levels and nurses' readiness to care for dying patients according to their demographic and professional characteristics.

As nurses' death anxiety is negatively associated with their preparedness to care for dying patients, implementing adequate assessment of nurses' death anxiety to encourage early intervention through counseling and organizing training programs to improve their preparedness to care for the dying is highly recommended.

Keywords COVID-19 · Death anxiety · Hospice care · Nursing · Terminal care

Introduction

Background

The outbreak of COVID-19 is considered one of the worst disasters worldwide as it spread globally, affecting many countries and patients (World Health Organization WHO, 2020). Although the majority of COVID-19 patients (about 80%) recovered without needing additional hospital care, one in five people with the condition experiences a severe disease course that results in respiratory distress and necessitates intensive care (WHO, 2020).

The pandemic made nurses susceptible to illnesses that are dangerous to their health and brought new challenges such as increased patient volume, increased workload, and facing tremendous numbers of dead patients daily (Labrague and Los Santos, 2020). Further, nurses who care for COVID-19 patients have extreme exposure to the virus, putting them at a high risk of getting the infection and suffering physically. Evidence revealed that nurses working with patients admitted to hospitals have a high prevalence of infection during close contact with the coronavirus (Neto et al., 2020). In the same assertion, the nurses' challenges of meeting the incredible number of deaths due to the disease bring a sudden spurt of death anxiety and other mental health disorders following the onset of disease-related deaths (Lázaro-Pérez et al., 2020; Nia et al., 2016).

Research suggests that the most stressful aspects of nursing involve caring for patients at the end of their lives (Adegoke & Ajuluchukwu, 2019; Kudubes et al., 2019). According to Buttler et al. (2018), Nurses are more exposed to unpleasant emotional and traumatic events because they spend more time engaging with and attending to the complex and dynamic care demands of dying patients. Historically, the care provided for dying patients is challenging for nurses, including physical,

✉ Ruqayya Zeilani
r.zeilani@ju.edu.jo

Shifa' Ayed Alrafati
sh_rafati@hotmail.com

Elham H. Othman
Elham.othman@ymail.com

[1] King Hussein Cancer Canter, Amman, Jordan

[2] School of Nursing, The University of Jordan, Amman, Jordan

[3] Faculty of Nursing, Applied Science Private University, Amman, Jordan

psychological, spiritual, and social dimensions to meet high-quality end-of-life care (Gillan et al., 2014).

Getting close contact with patients and witnessing death on a daily basis, might increase nurses' stress anxiety levels and expose them to experience death anxiety (Afshar et al., 2021; Lázaro-Pérez et al., 2020). One of the most significant causes of psychological problems is death anxiety, which is particularly significant in mental health (Barrett, 2013). According to Brady (2015), death anxiety is a negative affective state that contributes to emotional, cognitive, and experiential attributes experienced by healthcare providers, especially nurses who face trauma and violence.

Death anxiety can result in job burnout, decreased work productivity, frequent absences, lower patient satisfaction, and higher turnover (Farhadi et al., 2021; Lee et al., 2020). Death anxiety during COVID-19 negatively affected the quality of nursing services (Labrague & McEnroe-Petitte, 2018; Nia et al., 2016). In Jordan, the number of infected persons with COVID-19 increased significantly, and the number of deaths increased with the case fatality rate (7.2%), which increases the load on the health sector. Due to the demanding workload and anxiety about contracting the infection and spreading it to others, nurses worked in COVID-19 sections, being challenged by working with the new disaster. Jordanian nurses and physicians treating COVID-19 patients reported mental and emotional suffering and working in substandard conditions (Al Qadire, 2020).

In recent years, particularly during the COVID-19 pandemic, the care of dying patients have become increasingly a concern. Nurses are not prepared for patient deaths;most of them are disturbed by the sudden, unforeseen death of their patients, and experienced stressful emotions that limit their involvement with dying patients (Afshar et al., 2021; Lázaro-Pérez et al., 2020). It is, therefore, essential to better understand nurses' preparedness and their ability to care for the dying, and understand the factors that influence their ability to care for dying patients, especially during this pandemic. Studies are required to understand how nurses take care of themselves and cope while caring for dying patients and their families. Moreover, understanding nurses' preparedness to care for the dying would help to add global knowledge and practice about caring for dying patients to the healthcare decision-makers and health sector.

The results of this study will help policymakers to understand factors that affect the healthcare working environment and influence nurses' preparedness to care for dying patients, and also help to understand the mental and physical well-being of nurses. According to Chew et al. (2020), administrators must address the physical and psychological distressing symptoms of healthcare professionals during pandemics and prepare required professional programs to enhance nurses' resilience and coping strategies.

Purpose of the study

The current study aimed to assess the levels of death anxiety among nurses and their preparedness to care for dying patients with COVID-19. Then, examine the relationship between death anxiety and preparedness to care for dying patients among Jordanian nurses.

Methodology

Study design

The study adopted a cross-sectional correlational design.

Settings and sampling

The study was conducted in hospitals with specialized isolated units to admit patients diagnosed with COVID-19. The target population for this study was Jordanian registered nurses who cared for hospitalized patients diagnosed with COVID-19. Nurses were included in this study if they met the following criteria: (1) registered nurses, (2) provided direct care to patients with COVID-19 and admitted to a specialized unit, (3) have a minimum three-month experience caring for patients with COVID-19.

Measurements tools

The data collection package consists of three self-reported questionnaires; (a) a demographic data sheet prepared by the research team, (b) the Collett-Lester Fear of Death scale, and (c) Nurses Perception of Preparedness and Ability to Care for the Dying (PPACD) R-I.

Collett-lester fear of death scale (CLFDS)

The Collett-Lester Fear of Death Scale (CLFDS) was used to assess fear of death (Lester & Abdel-Khalek, 2003). Collett and Lester developed the CLFDS in 1969 (Collett & Lester, 1969). There are 28 items in the CLFDS, which is divided into four subscales (seven items per each subscale); (1) fear of death of self, (2) fear of dying of self, (3) fear of death of others, and (4) fear of dying of others. The respondents rate each statement from 1 (not at all) to 5 (very much). The mean score for each subscale is reported; the cutoff point that indicates a low death anxiety level for each statement is less than two, while 3–4 indicates somewhat anxiety, and 5 means being very anxious (Lester, 1990).

The CLFDS showed adequate validity and reliability. In the current study, Cronbach's alpha of the death anxiety

scale was 0.95. Cronbach's alpha scores for the four sub-scales in this study were the death of self = 0.836; dying of self = 0.865; death of others = 0.916; dying of others = 0.905.

Nurses' perception of preparedness and ability to care for the dying (PPACD) R-I

The second scale is the Perception of Preparedness and Ability to Care for the Dying (PPACD) R-I Scale (Todaro-Franceschi, 2013). The original scale consisted of 13 items; however, a 6-item subscale is frequently used as a valid and reliable tool in research studies. The six questions of PPACD consist of 5 Likert-scale questions ranging from 1 (Strongly disagree or much less) to 4 (Strongly agree or much more) and one yes/no question. The PPACD showed adequate validity and reliability. In the current study, the Cronbach alpha was 0.85.

Data collection procedure

After obtaining the required approvals, the researcher contacted nursing administrators from the recruited hospitals to facilitate the data collection process and to explain the study's purposes. Nurse managers provided the research team with a list of targeted nurses who met the inclusion criteria. Then, those nurses were contacted and given a full description of the main study purposes and data collection procedure. Those who voluntarily accepted to participate were handed the questionnaire kit that included the cover letter, the consent form, a copy of the questionnaire, and a pen to fulfill the questionnaire; all inside a closed envelope. And were instructed to return the filled questionnaire in a sealed envelope, either to the researcher or the unit manager.

Ethical considerations

The Institutional Review Board (IRB) at the University of The University of Jordan and the Ministry of Health approved the study. In addition, permissions to use the instruments from the primary authors were obtained before data collection. Participation in the study was voluntary; each participant signed a consent form before data collection. Also, it was made clear to the participants that their involvement was voluntary and that they were not obligated to continue. All data files were coded, saved with a password, and kept on the principal researcher's personal computer, which no one accessed.

Data analysis

The Statistical Package for the Social Sciences (SPSS version 28) was used for data analysis. Descriptive statistics (mean, standard deviation, and frequencies) described the sample and main study variables. Differences in scores based on demographic variables were tested using Mann-Whiteny and Kruskal Wallis analysis, and post-hoc analyses with a Bonferroni correction for multiple comparisons were performed. Lastly, the relationship between variables was examined using Spearman Correlation analysis.

Results

Participants characteristics

Data were collected from 400 nurses caring for dying patients with COVID-19. Out of the 400 participants, 137 (34.3%) were males, and the age of 211 participants (52.8%) ranged from 20–30 years. The majority held bachelor's degrees in nursing 295 (73.8%) and were married 228 (57%). Regarding participants' job titles, 51 (12.8%) were charge nurses, 242 (60.4%) were direct care nurses, and 107 (26.8%) were senior nurses. Almost all the participants had previous experience of death 368 (92%). Table 1 presents full participants' characteristics.

Death anxiety among nurses caring for COVID-19 dying patients

The total mean score for death anxiety was 97.38 (23.7) out of 140 (Min = 30, Max = 140), which reflects a moderate score. As presented in Table 2, the total mean scores for the death anxiety subscales were as follows: the death of self (22.87 ± 6.1), the dying of self (24.47 ± 6.2), the death of others (25 ± 6.7), and the dying of others (25.04 ± 6.6). Further, Table 2 represents the participants' responses to each item in the CLFODS subscales.

Nurses' perception of preparedness to care for the dying

As presented in Table 3, the average total score of the participant's responses was 12.68 (SD = 3.25), which indicated a moderate level. The participants reported the highest scores for the item entitled "Competency regarding nurse ability to provide pain and symptom management at the end of life" (2.57 ± 0.73). In comparison, the lowest mean score was for "Highly competent in the ability to talk to patients and their loved ones about death, dying, and bereavement" (2.49 ± 0.77). The sixth item of

Table 1 Study Participants Demographic Characteristics ($N = 400$)

Variable	n (%)
Gender	
Male	173(43.3)
Female	227(56.7)
Age (years)	
20–30	211(52.8)
31–40	150(37.4)
41–50	39(9.8)
Education level	
Diploma	22(5.5)
Bachelor	295(73.8)
Master	83(20.7)
Marital status	
Single	161(40.3)
Married	228(57.0)
Divorced/widow	11(2.7)
Monthly income (JD)	
250–500	169(42.3)
˃500	231(57.7)
Living status	
Alone	28(7.0)
Core family	187(46.8)
Extended family	185(46.3)
Job title	
Charge nurse	51(12.8)
Senior nurse	107(26.8)
Clinical nurse	242(60.4)
Previous experience of death	
No	32(8.0)
Yes	368(92.0)
Experience in nursing (year)	
< 1	37(9.3)
1–5	152(38.0)
6–10	106(26.5)
˃10	105(26.3)
Experience in the COVID-19 unit (year)	
≤ 1	185(46.2)
˃1	215(53.8)

the PPACD scale was a yes/no question about the nurses' ability to provide a quality care to the dying and their loved ones. Most participants (n = 213, 53%) answered "Yes" to the question, while 187 (47%) answered "No".

Relationship between death anxiety and care for the dying

Spearman's rank correlation test revealed a significant negative correlation between death anxiety and PPACD with COVID-19; r(400) = -0.557, p < 0.0001.

The difference in death anxiety and PPACD based on participants' characteristics

Mann-Whitney and Kruskal Wallis tests examined differences in participant's death anxiety levels and preparedness to care for dying patients with COVID-19 based on their demographics (Table 4).

The difference in death anxiety

The results show a significant difference in death anxiety levels between male and female participants (U=7660, z=-10.455, $p<0.001$), as higher anxiety was reported by female participants (108.11 ± 19.1). In the term of monthly income, the results revealed that the death anxiety level was significantly higher (102.5 ± 21.6) among participants who had monthly income < 500JD compared to participants who had higher monthly income (93.61± 24.5), ($U = 15319.5$, $z = -3.68$, $p < 0.001$).

On the other hand, the Kruskal Wallis test showed a significant difference in mean death anxiety level due to age group ($X^2(2) = 30.93$, $p<0.001$). We found statistically significant higher death anxiety scores among participants aged 20-30 (103.6±21.5) compared to those aged 31-40 (90.04±25.0) (p < .001), and 41-50 (92±21.0) (p= .009). Similarly, a significant difference in death anxiety levels was found based on education level ($X^2(2) = 37.56$, $p<0.001$). Subsequently, comparisons revealed statistically significant lower death anxiety scores among participants who hold master's degree (82.51±24.5) than diploma degree holders (104.18±23.7) (p < .001), and bachelor's degree holders (101.06±21.8) (p < .001).

In terms of marital status, the results showed a significant difference in mean death anxiety levels ($X^2(2) = 24.15$, $p<0.001$). We found statistically significant higher death anxiety scores among single participants (104.22±21.7) than married participants (92.5±24.0) (p < .001). In the same context, the results showed a significant difference in death anxiety levels based on living status ($X^2(2) = 16.84$, $p<0.001$). The post hoc analysis revealed statistically significant higher death anxiety scores among participants who live with an extended family (102.49±22.79) than those who live alone (95.75±22.1) (p < .001), and who live with a core family (92.58±23.9) (p < .001).

Regarding nursing job characteristics, death anxiety levels were statistically significantly different between participants from different job titles groups, $X^2(2) = 27.61$, $p < 0.001$. There were statistically significant higher death anxiety levels among participants who worked as clinical nurses (102.41 ± 23.3) compared to charge nurses (90.23 ± 21.6) (p = 0.001), and senior nurses (89.41 ± 22.7) (p < 0.001). Similarly, the results showed a significant difference in death anxiety levels due

Table 2 Participants' responses to the CLFODS items

Items	Low death anxiety n(%)	Somewhat anxious n(%)	Very anxious state n(%)	Mean (SD)
The death of self				22.87 (6.1)
1. The disintegration of your body after you die	107(26.7)	212(53.0)	81(20.3)	1.94 (0.68)
2. The total isolation of death	83(20.8)	263(65.8)	54(13.4)	1.93(0.58)
3. The shortness of life	116(29.0)	227(56.7)	57(14.3)	1.85(0.64)
4. Missing out on so much after you die	81(20.3)	237(59.2)	82(20.5)	2.00(0.64)
5. Dying young	84(21.0)	244(61.0)	72(18.0)	1.97(0.62)
6. How it will feel to be dead	144(36.0)	211(52.7)	45(11.3)	1.75(0.64)
7. Never thinking or experiencing	128(32.0)	217(54.3)	55(13.7)	1.82(0.65)
The dying of self				24.47 (6.2)
8. The physical degeneration involved	103(25.7)	237(59.3)	60(15.0)	1.89(0.63)
9. The pain involved in dying	56(14.0)	214(53.5)	130(32.5)	2.19(0.66)
10. The intellectual degeneration of old age	79(19.8)	247(61.8)	74(18.4)	1.99(0.62)
11. That your abilities will be limited as you lay dying	76(19.0)	250(62.5)	74(18.5)	2.00(0.61)
12. The uncertainty as to how bravely you will face the process of dying	102(25.5)	234(58.5)	64(16.0)	1.91(0.64)
13. Your lack of control over the process of dying	75(18.8)	251(62.8)	74(18.4)	2.00(0.61)
14. The possibility of dying in a hospital away from friends and family	74(18.4)	253(63.3)	73(18.3)	2.00(0.61)
The death of others				25 (6.7)
15. Losing someone close to you	44(11.0)	203(50.8)	153(38.3)	2.27(0.65)
16. Having to see the person's dead body	69(17.2)	224(56.0)	107(26.8)	2.10(0.66)
17. Never being able to communicate with the person again	78(19.4)	219(54.8)	103(25.8)	2.06(0.66)
18. Regret over not being nicer to the person when he or she was alive	105 (26.3)	214(53.4)	81(20.3)	1.94(0.68)
19. Growing old alone without the person	76(19.0)	229(57.3)	95(23.7)	2.05(0.65)
20. Feeling guilty that you are relieved that the person is dead	109(27.3)	222(55.4)	69(17.3)	1.90(0.66)
21. Feeling lonely without the person	79(19.8)	215(53.8)	106(26.4)	2.07(0.68)
The dying of others				25.04 (6.6)
22. Having to be with someone who is dying	83(20.8)	226(56.4)	91(22.8)	2.02(0.68)
23. Having the person wants to talk about death with you	83(20.8)	236(59.0)	81(20.2)	2.00(0.64)
24. Watching the person suffering from the pain	61(15.3)	203(50.7)	136(34.0)	2.19(0.68)
25. Seeing the physical degeneration of a person's body	82(20.5)	230(57.5)	88(22.0)	2.02(0.65)
26. Not knowing what to do about your grief at losing the person when you are with him/her	87(21.7)	236(59.0)	77(19.3)	1.98(0.64)
27. Watching the deterioration of the person's mental abilities	80(20.0)	240(60.0)	80(20.0)	2.00(0.63)
28. Being reminded that you are going to go through the experience also one day	63(15.7)	212(53.0)	125(31.3)	2.16(0.67)

Table 3 Participants' responses to PPACD items (N = 400)

Item	1	2	3	4	Mean (SD)
Total PPACD					12.68 (3.25)
1. I feel very comfortable listening and talking to patients and their loved ones about death, dying, and bereavement	40(10.0)	148(37.0)	177(44.3)	35(8.8)	2.51(0.79)
2. I rate myself as highly competent in my ability to talk to patients and their loved ones about death, dying, and bereavement	35(8.8)	166(41.5)	166(41.5)	33(8.2)	2.49(0.77)
3. Compared to your colleagues, how would you rate your competency regarding your ability to talk and listen to patients and their loved ones about death and bereavement?	25(6.3)	156(39.0)	191(47.7)	28(7.0)	2.55(0.72)
4. I rate myself as highly competent in my ability to provide pain and symptom management at the end of life	27(6.7)	161(40.3)	178(44.5)	34(8.5)	2.55(0.74)
5. Compared to your colleagues, how would you rate your competency regarding your ability to provide pain and symptom management at the end of life?	24(6.0)	155(38.7)	188(47.0)	33(8.3)	2.57(0.73)

Table 4 Comparison of Main Study Variables Based on Demographics (N = 400)

Variable	n	Death anxiety M (SD)	PPACD M (SD)
Gender¥			
Male	173	83.31 (21.7)**	14.22 (2.52)**
Female	227	108.11 (19.1)	11.52 (3.3)
Age (years)§			
20–30	211	103.60 (21.5)[a]**	11.51 (3.3)[b]**
31–40	12	90.04 (25.0)[b]	13.88 (2.7)[a]
41–50	39	92 (21.0)[b]	14.46 (1.9)[b]
Monthly income (JD)¥			
250–500	169	102.54 (21.6)**	11.17 (3.2)**
˃500	231	93.61 (24.5)	13.80 (2.8)
Education level§			
Diploma	22	104.18 (23.7)[a]**	13.14 (2.5)[b]**
Bachelor (BSN)	295	101.06 (21.8)[a]	12 (3.2)[b]
Master (MSN)	83	82.51 (24.5)[b]	15.01 (2.3)[a]
Marital status§			
Single	161	104.22 (21.7)[a]**	11.45 (3.3)[b]**
Married	228	92.50 (24.0)[b]	13.5 (2.9)[a]
Divorced/widow	11	98.45 (23.9)[b]	13.9 (3.0)[a]
Living status§			
Alone	28	95.75 (22.1)[b]**	13.21 (2.2)[a]**
Core family	186	92.58 (23.9)[b]	13.39 (2.9)[a]
Extended family	185	102.49 (22.79)[a]	11.90 (3.6)[b]
Job title§			
Charge nurse	51	90.23 (21.6)[b]**	14.82 (1.9)[a]**
Senior nurse	107	89.41 (22.7)[b]	13.98 (2.7)[a]
Clinical nurse	242	102.41 (23.3)[a]	11.66 (3.3)[b]
Experience in nursing (year)§			
<1	37	107.16 (19.8)[a]**	9.57 (4.1)[b]**
1–5	152	103.55 (22.3)[a]	11.68 (3.0)[b]
6–10	106	91.49 (25.7)[b]	13.66 (2.9)[a]
˃10	105	90.96 (21.6)[b]	14.26 (2.2)[a]
Experience in the COVID-19 unit (year)¥			
≤1	185	98.03 (21.3)	12.33 (3.5)
˃1	215	96.83 (25.6)	12.99 (3.0)
Previous experience of death¥			
No	32	97.71 (24.0)	14.06 (2.7)*
Yes	368	93.62 (19.6)	12.57 (3.3)

¥: Mann-Whiteny test, §: Kruskal Wallis tests

* Significant at p<0.05, ** Significant at p<0.001

Different subscripts indicate statistical differences across categories of each variable

to experience in nursing (X^2 (3) = 32.08, $p < 0.001$); we found statistically significant higher death anxiety levels among participants with nursing experience of less than 6 years compared to those with more experience in nursing ($p < 0.001$).

Differences in preparedness to care for the dying

On the other hand, the PPACD was statistically significantly higher among males (14.22) than females (11.52), (U = 10,611, z = -7.98, $p < 0.001$). In terms of monthly income, there was significantly lower scores (11.17 ± 3.2) among participants who had low monthly income (250–500 JD) compared to participants who had high monthly income (13.80 ± 2.8), (U = 10,474, z = -8.025, $p < 0.001$).

A significant difference in PPADC scores due to age groups was noted (X^2 (2) = 57.26, $p < 0.001$). There was statistically significant lower PPACD scores among the participants aged 20–30 years (11.51 ± 3.3) compared to those aged 31–40 (13.88 ± 2.7) (p < 0.001) or 41–50 (14.46 ± 1.9) (p < 0.001). Regarding the level of education, we found a significant difference in the PPACD levels (X^2 (2) = 55.33, $p < 0.001$). Subsequently, pairwise comparisons revealed statistically significant higher PPACD scores among master's degree holders (15.01 ± 2.3) than diploma degree (13.14 ± 2.5) (p = 0.010) and Bachelor's degree (12 ± 3.2) (p < 0.001) holders.

In terms of marital status, there was a significant difference in mean PPACD levels (X^2 (5) = 61.29, p<0.001). Post hoc analysis showed statistically significant lower PPACD scores among single (11.45±3.3) compared to married (13.5±2.9) (p < .001) and divorced/widow participants (13.9±3) (p= .017). Regarding living status, there was a significant difference in the mean PPACD scores (X^2(2) = 23.37, p<0.001). There was statistically significant lower PPACD scores among participants who lived with an expanded family (11.9±3.6) compared to those who lived alone (13.21±2.2) (p < .001) or with a core family (13.39±2.9) (p < .001).

In terms of differences in PPACD levels according to nursing characteristics; there were statistically significant differences according to job titles, X^2 (2) = 64.80, $p < 0.001$. Pairwise comparisons revealed statistically significant lower PPACD levels among clinical nurses (11.66 ± 3.3) than charge nurses (14.82 ± 1.9) (p < 0.001), and senior nurses (13.98 ± 2.7) (p < 0.001). The PPACD score also differed significantly due to experience in nursing (X^2 (3) = 74.26, $p < 0.001$). The PPACD levels among participants with nursing experience of more than 6 years were statistically significantly higher than those with low experience in nursing (p < 0.001). Further, participants with previous experience of death demonstrated significant lower PPACD levels (12.57 ± 3.3) than those with no prior experience of death (14.06 ± 2.7), U = 4000.5, z = -3.05, p = 0.002.

Discussion

The current study assessed the Jordanian nurses' death anxiety levels and preparedness to care for COVID-19 dying patients. Further, we examined the differences in nurses'

scores based on their characteristics, then the relationship between nurses' death anxiety and their preparedness and ability to care for the dying patients with COVID-19.

Death anxiety, a negative emotional reaction triggered by death, appears to be common among nurses and other healthcare professionals (Nia et al., 2016). During the COVID-19 pandemic, nurses' exhibited moderate levels of death anxiety. Taking into account the differences in tools used, the mean score for total death anxiety in the present population sample was close to that observed among nurses in Iran, Turkey, Mexico and Italy (Mokhtari et al., 2020; Karabağ & Fidan, 2022; Landeros-Olvera et al., 2020; Forte et al., 2020). A possible explanation for this could be that prolonged exposure to mortality tends to raise the level of death anxiety and increase the individuals' awareness about their mortality, which may cause concerns and anxiety (Peters et al., 2013; Mondragon-Sanchez et al., 2015). A previous study revealed that although Jordanians tend to accept death as a destination for their lives; they fear the unknown of the dying experience (Othman et al., 2022). Similarly, a previous study reported that nurses experienced death anxiety due to the high COVID-19 mortality rate, the inability to save patients, and transmitting the disease despite taking precautions (Galehdar et al., 2020).

Many factors may contribute to increased level of death anxiety among nurses, including working as front line workers during the pandemic (Fernandez et al., 2020), especially in emergency departments or intensive care units (Le et al., 2021), frequent contact with COVID-19 patients during shifts (Lai et al., 2020,), witnessing the death of COVID-19 patients (Pappa et al., 2020), and feeling powerless to do anything while patients were in respiratory distress (Galehdar et al., 2020).

In recent years, particularly during COVID-19, nurses have become particularly challenged in caring for the dying and terminally ill. We found that nurses have a moderate level of PPACD with COVID-19. Despite tool differences, the mean score for total PPACD in the current population sample was similar to previous studies (Emaliyawati et al., 2021; Gazi et al., 2021; van Riesenbeck et al., 2015). This might be due to increased levels of knowledge, attitude, and practice toward end of life care, palliative care, and dying care (Subih et al., 2022; Alwidyan et al., 2021).

Several interventions may alleviate nurses' death anxiety, improving their preparedness to care for dying patients. These interventions vary from therapeutic interventions, such as cognitive behavioral therapy (CBT), to death education interventions (Menzies et al., 2018). According to Naeem et al. (2020), CBT can enhance resilience and prevent emotional and mental health problems. In the same assertion, internet-CBT was suggested as an easy intervention delivered at a low cost that can be used during the times of COVID-19 (Ho et al., 2020; Zhang & Ho, 2017).

Differences in participants' death anxiety level and preparedness to care for the dying based on their demographic characteristics

The results showed a gender difference in death anxiety; female participants reported a higher death anxiety level than males, which agrees with previous studies in Jordan (Abu Hasheesh et al., 2013) and globally. This difference could be explained by societal norms, as Arab males do not find communicating their emotions and fears desirable. Females, conversely, are more compassionate and attentive to the needs of individuals facing terminal disease or death, which justifies their higher level of death anxiety. In terms of their preparedness to care for the dying, male participants reported a higher level of preparedness than females. The results come in agreement with Farajzadeh et al. (2017) and Mallon et al. (2021). This could be explained by the relationship between death anxiety and preparedness. As mentioned earlier, males have less anxiety, hence they are more prepared to care for the dying. Moreover, men receive more disaster training than women (Farajzadeh et al., 2017).

The results revealed that the death anxiety level was significantly higher for participants with high monthly income than for participants with a low monthly income. This result was comparable to those obtained by Chang et al. (2021) and Bibi and Khalid (2020), who reported that participants with a low income had a significantly higher anxiety level. According to the Lund study, individuals with low incomes are 1.5 to 3 times more likely to experience severe psychological distress, such as depression and anxiety (Lund et al., 2010). Perhaps low income is related to lack of health insurance and fear of treatment cost burden. Further, we found a higher preparedness level to care for the dying among participants who had higher monthly income. According to Wu et al., (2020) reported that reducing stress and burnout, and increasing income are the most important incentives to increase nurses' readiness to care orf COVID-19 patients.

Age has a statistically significant impact on the level of death anxiety, as well as fear of death. As a result, younger nurses reported a higher level of death anxiety. This could be linked to the fact that young nurses have less experience, and are exposed to many stressors at this stage of life. Age also has a statistically significant impact on the level of PPAC. As a result, nurses of higher age reported a higher level of PPACD, older nurses exhibited a more consistent pattern in their lives, which may be related to maturity level. According to some studies, senior nurses are more compassionate toward dying patients.

The finding from the current study supports that caring for dying patients reduces death anxiety and fear of death. The current finding is consistent with the findings of previous studies (Mondragon-Sanchez et al., 2015; Xu et al., 2019), which discovered that prior experience significantly

affects nursing students' fear of death. Because experiencing mortality improves understanding of terminally ill patients' concerns, it reduces anxiety among healthcare professionals and makes them more at ease when dealing with terminally ill patients. In the same assertion, caring for dying patients increase the nurse's preparedness to care for dying patients, which is consistent with previous studies (Lee et al., 2015; Xia & Kongsuwan, 2020). Nursing competency in providing end-of-life care for a patient was substantially correlated with direct experience with death and dying (Pratumwan & Unipun, 1995). Increasing a nurse's direct experience in caring for dying patients helps them learn and understand their role in caring for end-life patients.

We found that nurses with lower education degrees had higher scores of death anxiety and lower scores in PPACD. The results agree with Nienaber and Goedereis (2015), and Choi et al. (2022) results, probably as a result of their expanded knowledge and improved comprehension of the lifespan. Previous studies revealed that the level of education has a statistically significant correlation with the practice of nurses' end-of-life care (Xia & Kongsuwan, 2020; Farmani et al., 2018; Huang et al., 2019). Nurses with master's degrees were found to be better at end-of-life care (Farmani et al., 2018; Huang et al., 2019). Compared to someone with a lower educational level, someone with a higher educational level more readily demonstrates systematic thinking, proficiency, and skills in the pursuit of new knowledge (Pokpalagon, 2005). As nurses became more aware of their role in providing care for dying patients, they recognized the importance of emphasizing the importance of care content integration in nursing education (Wolf et al., 2015).

In terms of marital status, a single nurse had a higher death anxiety level. On the other hand, a married nurse had a higher PPACD score. It could be because of the country's collectivistic culture, where people provide unconditional support and rely on one another for their needs (Bibi & Khalid, 2020). Also, marriage increases self-efficacy (Reid et al., 2018), which correlates with better coping and lower anxiety (Sánchez-Anguita Muñoz et al., 2018).

In terms of job title, direct care nurses reported a higher level of death anxiety than charge and senior nurses, which could be connected to spending more time and having direct contact with patients (Yurtseven & Arslan, 2021). On the other hand, charge nurse participants reported a higher level of PPACD, which might be related to years of nursing experience.

Further, death anxiety decreases with increased years of experience in nursing. Numerous studies have found that nurses and physicians with extended clinical expertise, particularly in palliative and hospice units, have frequent exposure to mortality and lower death anxiety levels (Halliday & Boughton, 2008; Mondragón-Sánchez et al., 2015; Xu et al., 2019). They also have lower PPACD scores. More professional

experience enhances nurses' confidence in managing terminal symptoms (Coffey et al., 2016).

Strength and limitations of this study

This is the first study to investigate the relationship between the level of death anxiety and PPACD during the COVID-19 pandemic in Jordan and the Middle East. Furthermore, this is one of the studies conducted to examine variables influenceing death anxiety levels and investigate demographic characteristics that influence PPACD. Nonetheless, there are a few limitations to this study; first the study employed a cross-sectional descriptive design, which limited the study's generalizability and the generation of any causal inferences. Second, because the data through a self-administered questionnaire, the subjective self-reported measurement might have induced a bias. Third, the study participants included intensive care nurses from only six of Jordan's government hospitals, which did not cover all healthcare sectors in Jordan.

Study implications and recommendations

The current study provides a deeper understanding of the death anxiety level and the fear of death among nurses caring for the dying patients with COVID-19. Furthermore, the current study highlighted the main factors that affect the death anxiety level, preparedness and ability to care for the dying patient with COVID-19. Educational courses and continuous teaching regarding death, palliative care, and end-of-life care significantly improve the nurses' preparedness and ability to care for dying patients, as well as decrease the death anxiety level and fear of death among nurses. Consequently, care of dying patients, the dying process, as well as death topics should be incorporated into the curriculum of the nursing students to enhance their preparedness to care for the dying and deal with the fear of death and end-of-life care.

Furthermore, newly graduated nurses should be given special attention and extensive training about death and care of the dying as part of their orientation programs and continuing education courses. Managers should create a comfortable environment that supports narrative reflection where nurses can express their fear and anxiety regarding death.

Conclusion

During the COVID-19 pandemic, nurses are among the first healthcare who exposed to dying patients and death. The current study aimed to assess the relationship between the level of death anxiety and the nurse's preparedness and ability to care for the dying patients with COVID-19 in Jordan. According to the findings of this study, the nurses who care for dying patients with COVID-19 had a moderate level of

death anxiety and a moderate level of PPACD. Moreover, there is a moderate statistically significant negative relationship between death anxiety level and PPACD among nurses.

Male, charge nurses, and master's degree holders with more experience in nursing are better equipped to care for dying patients. Moreover, higher monthly income improves nurses' preparedness and ability to care for dying patients. Lastly, based on the findings of the current study, gender, monthly income, age, education level, marital status, living status, nursing experience (year), and job title significantly influence the death anxiety level among nurses.

Future research studies that explore the effectiveness of educational and psychological interventions in enhancing nurses' readiness for and capacity to care for patients who are dying are strongly advised based on the study's findings. This will help to lessen and prevent nurses' anxiety related to death.

Data availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethical approval statement This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of The University of Jordan.

Informed consent Informed consent was obtained from all individual participants included in the study

Competing interest The authors have no competing interests to declare that are relevant to the content of this article.

References

Abu Hasheesh, M., AboZeid, A., El-Said, G., & Alhujaili, A. (2013). Nurses' characteristics and their Attitudes toward Death and Caring for Dying Patients in a Public Hospital in Jordan. *Health Science Journal, 7*(4), 384–395.

Adegoke, O., & Ajuluchukwu, J. N. (2019). Demographic characteristics and causes of death for persons brought in dead to emergency department of tertiary health facility in South-West Nigeria. *Nigerian Postgraduate Medical Journal, 26*(1), 45–52.

Afshar, P., Javadian, H., Sadeghmoghaddam, L., & Farhadi, A. (2021). Relationship between death anxiety and Mental Health of Nurses Working in Bushehr Persian Gulf Martyrs Hospital at the Time of Coronavirus Virus. *Quaternary Journal of Nursing Management, 10*(2), 68–75.

Al Qadire, M. Jordanian Student Nurses' Attitudes towards the Care of Dying Patients. (2020), OMEGA—Journal of Death and Dying, 1–13. https://doi.org/10.1177/0030222820971077.

Alwidyan, M., Oteir, A., Mohammad, A., & Williams, B. (2021), Are healthcare professionals in Jordan willing to work and provide care for COVID-19 patients? Australasian Journal of Paramedicine, 18, https://doi.org/10.33151/ajp.18.924 .

Barrett, C. (2013) Death Anxiety. In: Encyclopedia of Behavioral Medicine, edn. Edited by Gellman MD, Turner JR. New York, NY: Springer New York, 541–542.

Bibi, A., & Khalid, M. A. (2020). Death anxiety, perceived social support, and demographic correlates of patients with breast cancer in Pakistan. *Death Studies, 44*(12), 787–792. https://doi.org/10.1080/07481187.2019.1614108

Brady, M. (2015). Death anxiety among emergency care workers. *Emergency Nurse, 23*(4), 32–37. https://doi.org/10.7748/en.23.4.32.e1448

Buttler, R., Monsalve, M., Thomas, G. W., Herman, T., Segre, A. M., Polgreen, P. M., & Suneja, M. (2018). Estimating time physicians and other healthcare workers spend with patients in an intensive care unit using a sensor network. *The American Journal of Medicine, 131*(8), 972.e9-972.e15. https://doi.org/10.1016/j.amjmed.2018.03.015

Chang, H. T., Lin, M. H., Kuo, W. H. (2021), Primary care staff's willingness to participate in compassionate community network and palliative care and the barriers they face: a mixed methods study. BMJ open, 11(9), https://doi.org/10.1136/bmjopen-2020-046961.

Chew, N. W., Lee, G. K., Tan, B. Y., Jing, M., Goh, Y., Ngiam, N. J., ... & Sharma, V. K. (2020). A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. Brain, behavior, and immunity, 88, 559–565.

Choi, J., Gu, M., & Oh, S. (2022). Relationship between End-of-Life Care Stress, Death Anxiety, and Self-Efficacy of Clinical Nurses in South Korea. *International Journal of Environmental Research and Public Health, 19*(3), 1082. https://doi.org/10.3390/ijerph19031082

Coffey, A., McCarthy, M. G., & Weathers, E. (2016). Nurses' Knowledge of Advance Directives and Perceived Confidence in End-of-Life Care: A Cross Sectional Study in Five Countries. *International Journal of Nursing Practice, 22*(3), 247–257. https://doi.org/10.1111/ijn.12417

Collett, L. J., & Lester, D. (1969). The Fear of Death and the Fear of Dying. *Journal of Psychology: Interdisciplinary and Applied, 72*(2), 179–181. https://doi.org/10.1080/00223980.1969.10543496

Emaliyawati, E., Ibrahim, K., & Trisyani, Y. (2021). Determinants of nurse preparedness in disaster management: A cross-sectional study among the community health nurses in coastal areas. *Open Access Emergency Medicine: OAEM, 13*, 373–379. https://doi.org/10.2147/OAEM.S323168

Farajzadeh, M., GhaneiGheshlagh, R., & Beiramijam, M. (2017). Preparedness of nurses for crises and disasters in imam Khomeini and social security hospitals of Saqqez. *Health in Emergencies and Disasters Quarterly, 3*(1), 57–63.

Farhadi, A., Javadian, H., & Afshar, P. (2021). Prediction of Mental Health by Religious Orientation and the Mediating Role of Death Anxiety Among Nurses in the Covid-19 Pandemic. *Research Square.* https://doi.org/10.21203/rs.3.rs-620594/v1

Farmani, H. A., Mirhfez, R. S., & Kavosi, A. (2018). Dataset on the Nurses' Knowledge, Attitude and Practice towards Palliative Care. *Data in Brief, 22*, 319–325. https://doi.org/10.1016/j.dib.2018.11.133

Fernandez, R., Lord, H., & Halcomb, E. (2020). Implications for COVID-19: A systematic review of nurses' experiences of working in acute care hospital settings during a respiratory pandemic. *International Journal of Nursing Studies, 111*, 103637. https://doi.org/10.1016/j.ijnurstu.2020.103637

Forte, G., Favieri, F., & Tambelli, R. (2020). COVID-19 pandemic in the Italian population: Validation of a post-traumatic stress disorder questionnaire and prevalence of PTSD symptomatology. *International Journal of Environmental Research and Public Health, 17*(11), 4151. https://doi.org/10.3390/ijerph17114151

Galehdar, N., Toulabi, T., & Kamran, A. (2020). Exploring nurses' perception of taking care of patients with coronavirus disease (COVID-19): A qualitative study. *Nursing Open, 8*(1), 171–179. https://doi.org/10.1002/nop2.616

Gazi, M., Rashid, H. U., & Mr, A. (2021). Readiness of nurses to provide nursing care for COVID-19 patients at COVID dedicated hospitals in Dhaka, Bangladesh. *Bangladesh Medical Research Council Bulletin, 46*, 161–167. https://doi.org/10.3329/bmrcb.v46i3.52250

Gillan, P. C., van der Riet, P. J., & Jeong, S. (2014). End of life care education, past and present: A review of the literature. *Nurse Education Today, 34*(3), 331–342.

Halliday, L. E., & Boughton, M. A. (2008). The moderating effect of death experience on death anxiety: Implications for nursing education. *Journal of Hospice & Palliative Nursing, 10*(2), 76–82.

Ho, C. S., Chee, C. Y., & Ho, R. C. (2020). Mental health strategies to combat the psychological impact of COVID-19 beyond paranoia and panic. *Annals of the Academy of Medicine, Singapore, 49*(1), 1–3.

Huang, L. C., Tung, H. J., & Lin, P. C. (2019). Associations among Knowledge, Attitudes, and Practices toward Palliative Care Consultation Service in Healthcare Staffs: A Cross-Sectional Study. *PLoS ONE.* https://doi.org/10.1371/journal.pone.0223754

Karabağ Aydın, A., & Fidan, H. (2022). The Effect of Nurses' Death Anxiety on Life Satisfaction During the COVID-19 Pandemic in Turkey. *Journal of Religion and Health, 61*(1), 811–826.

Kudubes, A. A., Akıl, Z. K., Bektas, M. & Bektas, A. (2019), Nurses' attitudes towards death and their effects on spirituality and spiritual care. Journal of Religion and Health, 1–9. https://doi.org/10.1007/s10943-019-00927-2.

Labrague, L. J., & De Los Santos, J. A. A. (2020). COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. *Journal of Nursing Management, 28*(7), 1653–1661. https://doi.org/10.1111/jonm.13121

Labrague, L. J., & McEnroe-Petitte, D. M. (2018). Job stress in new nurses during the transition period: An integrative review. *International Nursing Review, 65*(4), 491–504.

Lai, J., Ma, S., & Wang, Y. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open, 3*(3), e203976.

Landeros-Olvera, E., Mondragon-Sanchez, E. J., & Pérez-Noriega, E. (2020). Validation of Collett-Lester Fear of Death Scale in a Mexican University Nursing student. *MedUNAB, 23*(1), 23–34.

Lázaro-Pérez, C., Martínez-López, J. Á., Gómez-Galán, J., & López-Meneses, E. (2020). Anxiety about the risk of death of their patients in health professionals in Spain: Analysis at the peak of the COVID-19 pandemic. *International Journal of Environmental Research and Public Health, 17*(16), 5938.

Le, X. T. T., Nguyen, Q. T., Onyango, B., Nguyen, Q. N., Pham, Q. T., Ta, N. T. K., ... & Ho, C. S. (2021). Perception toward exposure risk of COVID-19 among health workers in Vietnam: Status and correlated factors. Frontiers in public health, 9, 589317.

Lee, K. A., Brennan, W. C., & Meterko, M. (2015). Organization of Nursing and Quality of Care for Veterans at the End of Life. *Journal Pain Symptom Manage, 49*(3), 570–577. https://doi.org/10.1016/j.jpainsymman.2014.07.002

Lee, S. A., Jobe, M. C., Mathis, A. A., & Gibbons, J. A. (2020). Incremental validity of coronaphobia: Coronavirus anxiety explains depression, generalized anxiety, and death anxiety. *Journal of Anxiety Disorders, 74*, 102268.

Lester, D. (1990). The collett-lester fear of death scale: The original version and a revision. *Death Studies, 14*(5), 451–468. https://doi.org/10.1080/07481189008252385

Lester, D., & Abdel-Khalek, A. (2003). The Collett-Lester Fear of Death Scale. *Death Studies, 27*, 81–85. https://doi.org/10.1080/07481180390136946

Lund, C., Breen, A., & Flisher, A. J. (2010). Poverty and common mental disorders in low and middle income countries: A systematic review. *Social Science & Medicine, 71*(3), 517–528.

Mallon, A., Hasson, F., & Casson, K. (2021). Young adults understanding and readiness to engage with palliative care: Extending the reach of palliative care through a public health approach: A qualitative study. *BMC Palliative Care, 20*(1), 1–13. https://doi.org/10.1186/s12904-021-00808-0

Mateo, J. D., Carlos, M. A., & Chua, W. R. V. (2020). You'll get used to it: A lived experience of Filipino nurses in dealing with death and dying patient. *Enfermería Clínica, 30*(107–112), 955–959. https://doi.org/10.1188/08.ONF.955-959

Menzies, R. E., Zuccala, M., Sharpe, L., & Dar-Nimrod, I. (2018). The effects of psychosocial interventions on death anxiety: A meta-analysis and systematic review of randomised controlled trials. *Journal of Anxiety Disorders, 59*, 64–73.

Mokhtari, R., Moayedi, S., & Golitaleb, M. (2020). COVID-19 pandemic and health anxiety among nurses of intensive care units. *International Journal of Mental Health Nursing, 29*(6), 1275.

Mondragón-Sánchez, E. J., Cordero, E. A. T., Espinoza, M. D. L. M., & Landeros-Olvera, E. A. (2015). A comparison of the level of fear of death among students and nursing professionals in Mexico. *Revista Latino-Americana De Enfermagem, 23*(2), 323–328. https://doi.org/10.1111/inm.12800

Naeem, F., Irfan, M., & Javed, A. (2020). Coping with COVID-19: Urgent need for building resilience through cognitive behaviour therapy. *Khyber Medical University Journal, 12*(1), 1–3.

Neto, M. L. R., Almeida, H. G., & Esmeraldo, J. D. (2020). When health professionals look death in the eye: The mental health of professionals who deal daily with the 2019 coronavirus outbreak. *Psychiatry Research, 288*, 112972.

Nia, H. S., Lehto, R. H., Ebadi, A., & Peyrovi, H. (2016). Death anxiety among nurses and health care professionals: A review article. *International Journal of Community-Based Nursing and Midwifery, 4*(1), 2–10.

Nienaber, K., & Goedereis, E. (2015). Death anxiety and education: A comparison among undergraduate and graduate students. *Death Studies, 39*(8), 483–490. https://doi.org/10.1080/07481187.2015.1047057

Othman, E. H., Khalaf, I. A., Alosta, M. R., Abualruz, H., & Zeilani, R. (2022). Death and Dying Through the Lens of Jordanian Muslim Patients and Caregivers. OMEGA-Journal of Death and Dying, 00302228221133505.

Pappa, S., Ntella, V., & Giannakas, T. (2020). Prevalence of Depression, Anxiety, and Insomnia Among Healthcare Workers During the COVID-19 Pandemic: A systematic review and meta-analysis. *Brain, Behavior, and İmmunity, 88*, 901–907. https://doi.org/10.1016/j.bbi.2020.05.026

Peters, L., Cant, R., & Payne, S. (2013). How Death Anxiety Impacts Nurses' Caring for Patients at the End of Life: A Review of the Literature. *The Open Nursing Journal, 7*, 14–21. https://doi.org/10.2174/1874434601307010014

Pokpalagon, P. (2005). Knowledge, attitude, and caring behavior for end of life patients among professional nurses in governmental hospital, Bangkok, Unpublished master's thesis, Mahidol University, Bangkok, Thailand.

Pratumwan, R., & Unipun, J. (1995). The relationship between selected factors and competencies of professional nurses in caring the dying patients. *Journal of Nursing Science Chulalongkorn University, 4*(2), 51–67.

Reid, C., Jones, L., Hurst, C., & Anderson, D. (2018). Examining relationships between socio-demographics and self-efficacy among registered nurses in Australia. *Collegian, 25*(1), 57–63.

Sánchez-Anguita Muñoz, Á., Pulido López, M. F., & Conde Vieitez, J. (2018). Self-efficacy and anxiety in female hospital healthcare workers. *Ansiedad y Estrés, 24*(2–3), 1134–7937. https://doi.org/10.1016/J.ANYES.2018.08.002

Subih, M., Al-Amer, R., & Malak, M. Z. (2022). Knowledge of Critical Care Nurses About End-of-life Care Towards Terminal Illnesses: Levels and Correlating Factors. *The Journal of Health Care Organization, Provision, and Financing, 59*(1–9), 00469580221080036.

Tamrakar, P., Pant, S. B., and Acharya, S. P. (2021), Anxiety and Depression Among Nurses in COVID and non-COVID Intensive Care Units. Nursing in Critical Care.

Todaro-Franceschi, V. (2013). Critical Care Nurses' Perceptions of Preparedness and Ability to Care for the Dying and Their Professional Quality of Life. *Dimensions of Critical Care Nursing, 32*(4), 184–190. https://doi.org/10.1097/DCC.0b013e31829980af

Van Riesenbeck, I., Boerner, K., & Barooah, A. (2015). Preparedness for Resident Death in Long-term Care: The Experience of Frontline Staff. *Journal of Pain and Symptom Management, 50*(1), 9–16. https://doi.org/10.1016/j.jpainsymman.2015.02.008

Wolf, A. L., Delao, M. A., & Perhats, C. (2015). Exploring the Management of Death: Emergency Nurses' Perceptions of Challenges and Facilitators in the Provision of End-of-Life Care in the Emergency Department. *Journal of Emergency Nursing, 41*(5), e23–e33. https://doi.org/10.1016/j.jen.2015.05.018

World Health Organization. Novel Coronavirus (2019-nCoV), Situation Report -1. 2020. World Health Organization, (2007) mental health definition.

World Health Organization, (2020). WHO Coronavirus (COVID-19) dashboard. https://covid19.who.int

Wu, B., Zhao, Y., & Xu, D. (2020). Factors associated with nurses' willingness to participate in care of patients with COVID-19: A survey in China. *Journal of Nursing Management, 28*(7), 1704–1712. https://doi.org/10.1111/jonm.13126

Xia, L., & Kongsuwan, W. (2020). Factors relating to nurses' end-of-life care. *Journal of Biosciences and Medicines, 8*(6), 189–200.

Xu, F., Huang, K., and Wang, Y. (2019), A Questionnaire Study on the Attitude Towards the Death of the Nursing Interns in Eight Teaching Hospitals in Jiangsu, China. BioMed Research International, 3107692. https://doi.org/10.1155/2019/3107692 .

Yurtseven, Ş, & Arslan, S. (2021). Anxiety levels of university hospital nurses during the Covid-19 pandemic. *Perspectives in Psychiatric Care, 57*(4), 1558–1565. https://doi.org/10.1111/ppc.12719

Zhang, M. W., & Ho, R. (2017). Moodle: The cost effective solution for internet cognitive behavioral therapy (I-CBT) interventions. *Technology and Health Care, 25*(1), 163–165.