

# The Efficacy of Hospice Care for Terminally Ill Emergency Patients During the Coronavirus 2019 Pandemic

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**Objective:** This study aimed to explore the efficacy of hospice care for terminally ill emergency patients in the COVID-19 context.

**Methods:** A total of 86 terminally ill emergency patients at the authors' hospital from February 2020 to October 2020 were included in this study, they were randomly allocated into a control (n = 42) and an intervention (n = 44) group, respectively. The control group received routine nursing care, and the intervention group received hospice care.

**Results:** Following treatment, the survival time (as the primary outcome) in the intervention group was longer than in the control group ( $P < 0.05$ ). Distress thermometer and psychological pain-related factor scores for the intervention group were lower than those of the control group ( $P < 0.001$  for both). The comfort scores of all dimensions in the intervention group were higher than in the control group ( $P < 0.05$ ). The scores for survival puzzle, symptom distress, independence, and mental well-being in all dimensions related to a sense of dignity were lower in the intervention than in the control group ( $P < 0.05$  for all). The intervention group's yield, avoidance, and total scores were lower than in the control group, whereas the face score was higher than in the control group ( $P < 0.05$  for all).

**Conclusion:** In the current COVID-19 context, the telehealth (psychological, physical, online remote support, critical illness communication, and death education) approach adopted by the Anning care team for terminally ill emergency patients and other aspects of peace care could help improve the physical and mental health of patients. Hospice care can minimise the physical and psychological pain of terminally ill patients in the emergency department and assist them in their final stage of life by providing a calming and comfortable environment.

**Keywords:** COVID-19, deathbed, emergency department, hospice care, mental state, comfort

## Introduction

In December 2019, the novel coronavirus 2019 (COVID-19) and its strong infectivity and lethality gave rise to significant global uncertainty and a shortage of medical resources. The virus spread to many countries, causing patients and their families to experience anxiety, fear, helplessness and other negative emotions.<sup>1,2</sup> In addition, due to the implementation of prevention and control policies, firm restrictions on adopted systems and closed management made it impossible for patients to be accompanied by their family members, further aggravating patients' loneliness and the physical and mental stress of caregivers, particularly for terminally ill patients in the emergency department. It can be difficult for patients to accept and face their illness; many evidence negative emotions or even give up on their treatment. Therefore, in the pandemic context, strengthening palliative care, providing patients with hospice care that is in line with their actual needs and enhancing their confidence in treatment have become a focus of clinical research.

“Hospice care” primarily refers to the comprehensive care provided by healthcare workers and volunteers, including psychological, physical, spiritual and social support to eliminate anxiety and fear of death for dying patients and their families. The goal is to help the terminal individual die peacefully, comfortably and with dignity.<sup>3–5</sup> The COVID-19 pandemic has created significant challenges for hospice care, making it difficult to guarantee effective and high-quality care. Uncertainty remains about the use of hospice care and telehealth in the treatment of terminally ill emergency patients; in the context of COVID-19, emergency departments often have to be closed, which may cut terminally ill emergency patients and their families off from receiving medical assistance. This study aimed to further explore the pandemic situation and hospice care for emergency end-of-life patients and examined the hypothesis that telehealth and hospice care could improve patient survival rates and life quality by addressing their physical symptoms and mental health.

## Data and Method

### General Information

The present study presents a secondary analysis of an emergency department-based program. The purpose of this program is to understand the interaction modes related to terminal issues within the family and the experience of family members against the cultural background of our country, thereby enabling medical staff to better understand the needs of those involved and provide them with help and support.

The present research was conducted as a single-centre, randomized controlled study. A total of 86 emergency patients were selected from the Xuanwu Hospital Capital Medical University from February to October 2020 and included in the study. The patients were randomly allocated to a control ( $n = 42$ ) and intervention ( $n = 44$ ) group, respectively, using cluster randomization and a random number table. The allocation was performed by independent investigators who had been blinded to the patient characteristics and the sequence was concealed. The terminally ill emergency patients were defined as all emergency patients who had been treated at our hospital during the pandemic who were conscious after first-aid treatment and received life support in a stable condition. Patients receiving life support, with incomplete clinical data, abnormal mental states, nervous system dysfunction and an inability to carry on effective communication were excluded from the study. The control group in this project received standardized treatment, which was applicable and did not violate any ethical concerns. This study’s protocol was approved by the local institutional review board and informed consent for their inclusion was obtained from all the participants.

### Intervention Methods

In the control group, routine care was given to improve relevant examinations; changes in patients’ condition following critical care treatment was actively observed, and timely treatment was delivered. Patients’ condition and clinical practice were combined with symptom control, psychological support, comfort care, humane care, and other aspects of scientific and effective nursing intervention.<sup>6–10</sup>

### Physiological Support

Terminal patients often experience physical symptoms such as pain and even acute aspiration syndrome. Providing physiological support, eg relieving pain and aspiration, is essential to ensure that these patients are as comfortable as possible.

#### A: Pain Support

**Pain medication:** Medication was given for pain as directed according to the World Health Organization’s (WHO) three-step pain management protocol as follows: step 1) non-opioid analgesics were given, such as paracetamol, aspirin and ping tong xin; step 2) if the pain was not relieved, weak opioid analgesics were given, eg hydroxy dihydrocodeine or codeine; step 3) if pain relief was still not apparent, strong opioid analgesics were used, eg sildenafil or morphine.

**Non-drug pain relief:** For relaxation and visualisation exercises, the patients were encouraged to visualise a peaceful scene, such as the gentle lapping of waves on a beach, or were instructed to breathe in slowly and deeply while

visualising pain leaving their body. For relaxation therapy, the patients were asked to inhale more than 20 times continuously at an inhalation frequency of 10–15-times per minute, hands slowly clenched into fists when breathing in and bending the wrists slightly, holding their breath for three seconds and then exhaling slowly and relaxing their hands so that the muscles were in a relaxed state. The patients were told to train in a highly concentrated, single-minded state and eliminate all distracting thoughts.

## B: Digestive System Support

Terminal patients often experience vomiting, nausea and loss of appetite. Nurses were instructed to keep the environment clean and tidy, provide fresh air, use clean and aesthetically pleasing tableware and provide patients with as much enjoyable food as possible to encourage increasing their nutrition and to create a pleasing environment for them.

## C: Skin Integrity

The patients were assisted in scrubbing and turning over in bed; they were massaged frequently according to their physical condition and given a regular bed bath 0–1-times a day to ensure their physical comfort.

Implementation: Based on each patient's physical condition, pain and visual analogue scale scores, the methods noted above for pain relief should be reasonably identified and medication administered 1–2 times/day; non-drug pain relief should be provided 10–15 min at a time.

Based on the above, hospice care was carried out for the intervention group. A hospice care team was established comprising a hospice care specialist, an emergency specialist (with more than five years of hospice care experience), two nurses in charge of delivering hospice care (one supervisor and one psychological consultant), a chief nurse (with more than 10 years of clinical nursing experience) and one social volunteer. Compared with the control group, the intervention group received systematic psychological counselling and intervention to reduce pain and increase patient comfort; corresponding intervention measures were also delivered according to the psychological state of the patients. To avoid the potential influence of other factors, these interventions were implemented according to the following standards.

## The Implementation of Hospice Care

1. Physiological support: The physiological support provided to the intervention groups was as same as for the control group.
2. Psychological support: Psychological support was provided by a psychological response psychologist. The psychology of terminally ill patients was divided into five stages, ie denial, anger, agreement, hesitation and acceptance as detailed below.

## The Denial Stage

Patients in this stage are often suspicious and nursing staff must adopt a sincere attitude to guide patients and explain the status quo, treatment methods, and development of modern medical technology and prognoses. It is important not to divulge too many clinical aspects of a patient's condition but to help them gradually accept reality and face their present situation positively. During this period, medical staff should pay attention to their own use of non-verbal communication, eg giving a “thumbs-up”, approving and admiring eyes, hugging the patients and shaking their hands, making sure they are warm and making them feel that they are not alone, that all medical staff are there to support them and that they are “fighting with them”. When staff talk to patients, they need to listen carefully and reflect warmth, support and understanding to ensure that patients do not feel abandoned but cared for.

## The Anger Phase

When patients' feelings (eg jealousy, anger, resentment) turn to hopelessness following denial (*why me; this is so unfair*), they tend to direct their discontent onto medical staff and close relatives. Health practitioners can provide practical advice to angry patients who reject all hope of survival using tools (beaten small people, release pressure rebound doll) and listen to their fears and anxieties but must not “fight anger with anger”.

## The Agreement Phase

In this phase, the patient acknowledges that their death is imminent. To prolong the life of a patient, “agreed-upon” requirements should be put forward on aspects such as the relief of symptoms and pain and life extension. Medical staff should try to meet the patient’s needs as best they can, making a positive effort even when these are difficult to achieve.

## Indecision/Acceptance Phase

In this stage, patients generally become extremely sad, depressed, fatigued and often lethargic, with an indifferent expression and a lack of confidence or enthusiasm for life. Medical staff can discuss specific issues with them, such as the following:

- Important memories: “When do you feel you lived the most fully?”
- Life roles: “What important roles have you played in your life (eg career, family and social roles)? What did you do in these roles?”
- Personal accomplishments: “What is the greatest accomplishment of your life? What are you most proud of?”
- Wishes: ‘Do you have any wishes for or expectations of someone you love? What would you most like to do with them?’

Through communication concerning the above issues, medical can stimulate patients’ thinking and help them to cultivate a positive attitude and optimism, regardless of their situation.

## Specific Implementation

The five stages of psychological changes in terminal patients do not follow a specific order; they sometimes overlap and are sometimes advanced or delayed. Nurses must be able to accurately grasp the psychological states of patients to provide the corresponding effective care.

### Online Remote Support

The nursing team provided online remote guidance and support to the patients and their families using WeChat videos, phone calls and other means to enable patients to experience the care and warmth of their families. The power of family affection helped to renew patients’ hope, actively cooperate with treatment and prolong their survival to the best extent possible.

### Serious Illness Communication

Since a terminal patient’s condition is unstable, an effective emergency plan must be in place and throughout the entire treatment process, nurses may let the patient and their family members participate in decision-making. Through WeChat or telephone communication with each patient’s family, the medical staff informed them that a patient may experience unanticipated physical symptoms and, accordingly, may require rescue measures. Family members may be consulted in advance to ascertain the procedures that should be followed in these instances; they may also be told to monitor their phones/ WeChat messages at all times for the foreseeable future and answer phone calls from the hospital promptly as these may require the family’s opinions on the patient’s treatment plan.

### Death Education

Death education is an integral part of hospice care and aims to help alleviate patients’ fear of death, enabling them to spend the terminal stage of their life in a peaceful and tranquil state. In the early stages of the exchange, a patient’s perspective on life and death is likely to be explored through news, current events, television programs and other sources of information for exploring the concepts of life and death. For those with religious beliefs, support can be provided via a spiritual interpretation of death so that patients can accept the end of their lives with equanimity. For those with a more materialist outlook, the intrusion of death will be a natural development process and they may be able to adopt a more composed outlook of their end-of-life stage. By engaging with patients in an overview of their life, this abstract concept can be channelled, thereby helping them to remember the meaningful events that occurred throughout their lives, and

enabling them to gain a sense of the value of life. Healthcare practitioners must understand the needs of patients and provide sincere help accordingly; they must communicate these needs to family members, assist the patient to the greatest extent possible to complete the missing and help them not to be regretful.

### Family Therapy

Healthcare practitioners must support terminal patients to manage and deal with any worries they may have. They must communicate with family members through phone calls or WeChat videos, be sympathetic and understanding regarding the grief of a loved one who is nearing the end of their life, and encourage them to provide more companionship during the final days of a patient affected by the pandemic. Patients were provided with care and company via telephone calls, WeChat videos, Douyin videos and other means to help alleviate their suffering. Concurrently, family members must be assisted in making funeral arrangements. The hospice care must continue until the patient's death.

### Outcome Measures

Presently, no single indicator is widely accepted as a primary outcome. Therefore, this study adopted end-of-life as the primary outcome with several secondary outcomes, including the patient's state of mind, comfort, sense of dignity, and coping style. These indicators can reflect the effectiveness of a hospice care method from multiple perspectives and do not involve multiple comparisons. Before and after treatment, changes in the indicators of the two groups were assessed as follows.

1. End-of-life: With a clear consciousness and no communication barriers, the patient signed the informed consent form and voluntarily accepted the dignity scale evaluation. The scale evaluation was given seven days after the patient had been hospitalised.
2. State of mind: The distress management screening measure was assessed using a screening tool.<sup>11</sup> The questionnaire comprised two parts, ie a psychological pain thermometer (distress thermometer [DT]) and a psychological pain-related factor questionnaire (PL). The former had 11 scales, with scores ranging from 0 to 10, with 0 being no pain and 10 being extreme pain; the higher the score, the more serious the psychological pain of the patient. The latter comprised 40 items, including practical questions (6 items), communication questions (4 items), emotional questions (9 items), physical questions (20 items), and spiritual and religious belief questions (1 item). On a five-point Likert scale, a higher score indicated higher corresponding indicators. Cronbach's coefficient alpha of internal consistency was 0.79.
3. Comfort: For this aspect, 30 items, including physiology (5 items), sociocultural (8 items), environment (7 items) and psychological (10 items) factors were assessed with Kolcaba's simplified comfort theory scale (general comfort questionnaire [GCQ]). The results showed that the scale had good reliability and validity, and the Cronbach's coefficient alpha of internal consistency was 0.83.
4. Sense of dignity: The patient dignity index (PDI) was used to evaluate this aspect.<sup>12</sup> The Cronbach's coefficient alpha of internal consistency was 0.92, and the retest reliability was 0.84. The scale included dimensions of survival distress, symptom distress, independence and mental peace; the higher the score, the lower the sense of dignity.
5. Coping style: A medical coping method questionnaire<sup>13</sup> was used to evaluate 20 items, including yield (5 items), avoidance (7 items) and face (8 items). The results showed that the Cronbach's coefficient alpha of internal consistency for each item was 0.70, 0.79 and 0.76, respectively.

### Statistical Methods

For data processing, the SPSS Statistics 23.0 software program was used and included the measurement data ( $\bar{x} \pm s$ ) expression, a *t*-test, and count data (%) expression and testing. The *t*-test was conducted to the score data for pain, comfort, sense of dignity and coping style were normally distributed. A nonparametric test was used when the data were not normally distributed. Chi-squared or Fisher's exact tests were used to analyse categorical data. A value of  $P < 0.05$  was considered statistically significant.

## Results

There was no significant difference in sex, age, primary disease, complications or medical expenses between the two groups ( $P > 0.05$ ) (see Table 1).

## End-of-Life Changes in Both Groups

Compared with the control group, the intervention group was in the terminal stage ( $P < 0.05$ ). This indicated that the end-of-life stage in the intervention group was slightly longer than in the control group (see Table 2).

## Change in Psychological Pain

The DT and PL scores in the intervention group were lower than those in the control group after treatment ( $P < 0.05$ ), which indicated that the degree of pain in the intervention group was less severe (see Table 3).

## Changes Concerning Comfort in the Two Groups

There was no significant difference in the comfort scores between the two groups before treatment ( $P > 0.05$ ), and the GCQ scores in the intervention group were higher than those in the control group ( $P < 0.05$ ). This indicated a higher level of comfort among the patients in the intervention group (see Table 4).

**Table 1** Comparison of General Data Between the Two Groups

Project	Intervention (n=44)	Control (n=42)	$t/\chi^2$	P
Gender (male/female)	24/20	21/21	0.178	0.673
Age (years)	52.25±6.21	54.31±6.69	1.481	0.142
Primary disease				
Severe pulmonary infection	7 (15.91)	6 (14.29)	0.401	0.982
COPD Acute exacerbation	11 (25.00)	9 (21.43)		
Pulmonary embolism	9 (20.45)	10 (23.81)		
Acute heart failure	8 (18.18)	9 (21.43)		
Advanced cancer	9 (20.45)	8 (19.05)		
Complications				
Hypertension	9 (20.45)	12 (28.57)	0.767	0.381
Diabetes	11 (25.00)	8 (19.05)	0.442	0.506
COPD	4 (9.09)	5 (11.90)	0.005	0.941
Hypertension and Diabetes	5 (11.36)	7 (16.67)	0.594	0.483
Medical expense				
At one's own expense	8 (18.18)	9 (21.43)	0.143	0.706
Social security	36 (81.82)	33 (78.57)		

**Abbreviation:** COPD, chronic obstructive pulmonary disease.

**Table 2** Comparison of End-of-Life Between Two Groups ( $\bar{x} \pm s$ , d)

Group	n	Terminal Stage	Average value
Intervention	44	5~42	18.99±3.22
Control	42	2~40	15.10±4.10
t			4.950
P			<0.001

**Notes:** The terminal period refers to the 10–14 days before the death. In this paper, the terminal period refers to the calculation of the length of time after the patient enters the intensive care unit for treatment and nursing, and the termination of the patient's death (telephone follow-up for discharged patients).

**Table 3** Comparison of Psychological Distress Between the Two Groups ( $\bar{x}\pm s$ , Score)

Group	n	DT		t	P	PL		t	P
		Before Intervention	After Intervention			Before Intervention	After Intervention		
Intervention	44	7.11 $\pm$ 1.10	3.79 $\pm$ 1.01	14.747	<0.001	146.32 $\pm$ 12.35	82.36 $\pm$ 8.10	28.726	<0.001
Control	42	6.87 $\pm$ 1.32	5.00 $\pm$ 1.48	6.190	<0.001	150.10 $\pm$ 15.47	120.32 $\pm$ 11.10	10.136	<0.001
t		0.918	4.446			1.255	18.176		
P		0.361	<0.001			0.213	<0.001		

**Abbreviations:** DT, distress thermometer; PL, psychological pain-related factor questionnaire.

**Table 4** Comparison of Comfort Between Two Groups ( $\bar{x}\pm s$ , Score)

Time	Group	n	Physiology	Society and Culture	Environment	Psychological Spirit
Before intervention	Intervention	44	9.12 $\pm$ 1.25	13.85 $\pm$ 2.11	18.36 $\pm$ 2.00	18.25 $\pm$ 3.68
	Control	42	8.56 $\pm$ 1.36	14.79 $\pm$ 2.36	17.78 $\pm$ 2.36	19.12 $\pm$ 3.87
	t		1.989	1.949	1.232	1.069
	P		0.051	0.055	0.222	0.288
After intervention	Intervention	44	12.32 $\pm$ 2.22	22.52 $\pm$ 3.00	24.11 $\pm$ 1.98	27.65 $\pm$ 4.11
	Control	42	10.11 $\pm$ 2.01	18.77 $\pm$ 2.75	20.33 $\pm$ 2.11	22.78 $\pm$ 2.85
	t		4.832	6.034	8.571	6.357
	P		<0.001	<0.001	<0.001	<0.001

## Both Groups Experienced Changes in Their Sense of Dignity

There was no significant difference in the PDI scores before and after treatment ( $P > 0.05$ ), and the PDI scores in the intervention group were lower than those in the control group ( $P < 0.05$ ). This indicated that a sense of dignity among those in the intervention group improved more significantly than in the control group (see [Table 5](#)).

## Group Two Experienced a Change in Coping Style

There was no significant difference in the coping style scores between the two groups before treatment ( $P > 0.05$ ). After treatment, the yield, avoidance and total scores of the intervention group were lower than those of the control group, and the face-to-face score of the intervention group was higher than that of the control group ( $P < 0.05$ ). This indicated that the intervention group had a more positive attitude towards life and could cooperate with the treatment more actively (see [Table 6](#)).

**Table 5** Two Groups Were Compared in Terms of Their Sense of Dignity ( $\bar{x}\pm s$ , Score)

Time	Group	n	Survival Puzzle	Symptom Distress	Independence	Spiritual Peace
Before intervention	Intervention	44	3.00 $\pm$ 1.01	3.21 $\pm$ 1.12	2.24 $\pm$ 0.85	2.21 $\pm$ 0.72
	Control	42	3.11 $\pm$ 1.20	3.02 $\pm$ 1.10	2.32 $\pm$ 0.92	2.32 $\pm$ 0.83
	t		0.461	0.793	0.419	0.657
	P		0.646	0.430	0.676	0.513
After intervention	Intervention	44	2.00 $\pm$ 0.74	2.10 $\pm$ 0.98	1.39 $\pm$ 0.62	1.00 $\pm$ 0.54
	Control	42	2.85 $\pm$ 0.83	2.76 $\pm$ 0.88	1.75 $\pm$ 0.73	1.63 $\pm$ 0.62
	t		5.018	3.231	2.469	5.032
	P		<0.001	0.002	0.016	<0.001



**Table 6** Coping Styles Were Compared Between the Two Groups ( $\bar{x} \pm s$ , Score)

Time	Group	n	Yield	Avoid	Face	Total Score
Before intervention	Intervention	44	16.32 $\pm$ 3.06	23.13 $\pm$ 4.15	13.47 $\pm$ 4.07	53.36 $\pm$ 5.15
	Control	42	15.19 $\pm$ 3.74	21.85 $\pm$ 4.36	14.77 $\pm$ 4.28	52.13 $\pm$ 4.86
	t		1.537	1.395	1.444	1.166
	P		0.128	0.167	0.153	0.247
After intervention	Intervention	44	6.25 $\pm$ 1.47	8.09 $\pm$ 1.36	28.28 $\pm$ 2.16	42.28 $\pm$ 3.53
	Control	42	10.17 $\pm$ 2.07	15.15 $\pm$ 2.48	22.25 $\pm$ 3.32	48.43 $\pm$ 4.12
	t		10.162	16.469	10.029	7.445
	P		<0.001	<0.001	<0.001	<0.001

## Discussion

Anxiety, fear and pain are the most intense psychological reactions experienced by dying patients, particularly those in the emergency department. It may be difficult for these patients to accept and face the sudden reality of impending death. They may be unable to cope with both their mental and physical pain, resulting in a negative emotional experience. In addition, the prevalence of COVID-19 has exacerbated the psychological needs of terminally ill patients concerning aspects such as hope, interconnectedness and safety, and the uncertainty of the pandemic and strong infectiousness of the virus can make these needs difficult to meet. In addition, in the inpatient hospital's family ward, visits and the number of visitors are limited, restricting patients' connection with the outside world. Due to COVID-19 restrictions, terminally ill patients may not even be able to receive family visits; as such, their emotional needs cannot be met, and their end-of-life experience is unsatisfactory.

Treatment plans can be developed according to specific patient requirements and have had remarkable results related to cancer and other medical fields. Accordingly, this study applied hospice care to terminally ill patients in the emergency department. The results showed that the average psychological pain score of the intervention group was lower than in the control group under routine care. The results also indicated that the effect of hospice care was significant for improving the mental state of dying patients, which was consistent with the results of existing research.<sup>14</sup> The reason for this was that, in addition to the threat of disease and death, dying patients' psychological fears and pain were increased in the pandemic context. This study focused on the psychological management of terminally ill patients, and the palliative care team was formulated around a professional psychologist. According to Elisabeth Kübler-Ross, there are five stages during which psychological support can be provided to terminal patients. However, this psychological process does not necessarily follow a specific order but varies according to patients' psychological activity and stage. Nurses should provide targeted psychological support, which is paramount to the psychological construction of patients and providing support for facilitating a strong among terminal patients. Rather than providing useless and ineffective treatment to dying patients, Such an approach can deliver humanistic hospice care that allows patients to live with dignity.<sup>15–17</sup> At present, however, there is a general lack of focus aimed at hospice care in China and other developed countries, which often puts doctors and nurses in the awkward position of “neither saying nor doing” anything when treating dying patients. In cases where a doctor adopts palliative therapy, it appears that medical staff do not implement any treatment measures, which the patient's family members understandably find unacceptable.

The current study found a low level of dignity among end-of-life emergency patients. However, following the delivery of attentive hospice care, the sense of dignity of patients in the intervention group improved significantly. It is not only the responsibility of medical staff in the general ward to enable terminal patients to experience the final stages of their lives with dignity but also an important responsibility of emergency medical staff. To protect the dignity of patients, attention must be paid to the physiological support they require beyond first aid; therapies, such as pain treatment, assisted inhalation and skin management should be provided to reduce their pain and help them suffer less during their final stages of life and to live with dignity.



The importance of clear communication with patients in the event of a serious illness, with full respect for their views and their joint participation in the formulation of a treatment plan, must also be noted. Patients must remain autonomous and proactive in the final stage of their life, which is essential for enhancing their sense of dignity and initiative, regardless of their situation.

## Implications for Emergency Clinical Care

With the transformation of the medical model and the advancement of nursing concepts, nursing has shifted from focusing on the single function of restoring a healthy body to educational and health activities aimed at meeting the physical and mental health needs of individuals.<sup>18</sup> Therefore, improving the comfort of patients has become an aspect that all nurses must be able to address. In addition, terminal patients affected by disease generally experience pain, dyspnoea, nausea, vomiting and other discomforts; allowing them to live comfortably for the rest of their lives and alleviating their pain through a realisation of self-will is thus of significant importance.<sup>19–21</sup> In this study, a hospice care team made the best effort to improve patients' degree of comfort by, eg providing physiological support (relieving their pain), providing psychological support (strengthening their psychological state of mind) and facilitating patients being in a state of mental relaxation, thus further increasing their comfort. Concurrently, nurses should enhance death education services and help patients to accept death as part of the natural process of birth, old age, illness and death, which can help them to avoid experiencing psychological torment and improve their levels of comfort. In addition, persuading patients not to give up on treatment to extend their survival outlook is also critical emergency work. It has been found that most terminally ill patients react negatively to terminal illness and relinquish their treatment voluntarily.

The current COVID-19 context has also impacted the healthcare environment, leading to family visits to hospitals being limited. In the context of hospice care, this study attempted to provide communication opportunities to the patients and their family members to enable them to interact with each other through, eg telephone calls, WeChat videos and short Douyin videos, which provided significant comfort to the patients. It is imperative to encourage patients to receive treatment and actively cooperate with medical healthcare workers to prolong their survival time. This study indicated that the end-of-life stage in the intervention group was slightly longer than in the control group.

## Conclusion

In summary, using science-based psychological counselling, skilful nursing techniques and palliative support, hospice care can minimise the physical and psychological pain of terminally ill patients in the emergency department and assist them in their final stage of life by providing a warm and caring atmosphere in which to experience a peaceful and dignified death, without a sense of regret for the patient or shame for family members.

## Data Sharing Statement

All data generated or analyzed during this study are included in this published article.

## Ethics Approval and Consent to Participate

This study was conducted in accordance with the declaration of Helsinki. This study was conducted with approval from the Ethics Committee of Xuanwu Hospital, Capital Medical University, People's Republic of China (No.:19YJC840059). Written informed consent was obtained from all participants.

## Consent for Publication

The manuscript is not submitted for publication or consideration elsewhere.

## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically

reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

## Disclosure

The authors declare that they have no competing interests.

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