



Original Article

Application of signs of dying identified in traditional Chinese, Tibetan, and modern Western medicine in terminal care

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ABSTRACT

Objectives: The purpose of this study was to promote culturally sensitive hospice care by understanding the concepts of approaching death in traditional Chinese and Tibetan medicine.

Materials and Methods: We searched for information on signs of dying in Western medicine using MEDLINE and the Cochrane Library Database. We conducted in-depth interviews using a semi-structured questionnaire with six traditional Chinese medical doctors qualified to practice both Western and Chinese medicine. A literature review of Chinese and Tibetan medicine included an analysis of the classical textbooks of these traditional medicine systems. The literature was analyzed using qualitative analysis software.

Results: Western medicine uses physiologic phenomena to describe signs of dying, while traditional Chinese medicine believes that signs of dying can be summarized as different symptom complexes and can be used to predict disease prognosis. Tibetan medicine views dying as a complex and interdependent process in which the patient's body and mind simultaneously disintegrate. Traditional Chinese and Tibetan medicine pay more attention to the observable signs of disease.

Conclusions: In Taiwan, Western medicine is the main treatment option delivered during hospice care, but many patients and families are still influenced by traditional medicine concepts. The understanding of traditional medicine can provide culturally sensitive care for terminally ill patients of different cultures.

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1. Introduction

Terminally ill patients show many typical signs and symptoms during the process of death. Apart from being indicators of death, these signs also serve to remind hospice care providers of their responsibilities to these patients. These responsibilities include steps such as ensuring that patients receive proper treatment for their symptoms, ensuring that patients' emotional needs have been adequately addressed, that families can cope with the death of patients, and that funerals have been arranged [1–5]. Thus, an analysis of the signs of dying can help improve hospice care for terminally ill patients.

Patients who are discharged too early may not receive the best terminal care, resulting in enormous care-giving burdens for their

family members. On the other hand, delaying this decision may mean that the patient's wish of dying at home is not fulfilled, causing great regret for family members. This preference for dying at home is common in both Western and Chinese societies [2,6–8]. Thus, identification of patients who are close to death and assessment of decisions to let these patients return home before death have become important topics for medical doctors. Many studies have provided a variety of methods to predict a patient's survival. However, the assessment methods and techniques used in Western medicine studies have many limitations [5,6,9]. Traditional Chinese and Tibetan medicine hold fairly unique and different views from Western medicine on the cause and treatment of disease, as well as on the nature of signs of dying. These ancient medical systems largely depend on observation of the disease process. An understanding of end-of-life concepts in traditional Chinese and Tibetan medicine may enable doctors to more precisely predict the deaths of patients. This information could also allow hospice care givers to provide appropriate care for patients in the last stages of terminal illness. To our knowledge,

Conflict of interest: none.

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this is the first study comparing predictions of dying between Western and ancient Asian medicine.

2. Materials and methods

We searched the databases of MEDLINE (January 1966–February 2009) and the Cochrane Library Database for information on signs of dying in Western medicine. The search strategy included the use of terms such as terminally ill, hospice, palliative care, end-of-life, end-stage, and dying. Related articles and references were also hand searched. Our inclusion criteria were articles with a clear observational design, and the dying period was defined as the last hours or days of life. Sample sizes in the included articles ranged from 85 [3] to 882 patients [4]. Most patients included in the research articles died of cancer.

We interviewed six traditional Chinese medical doctors with licenses to practice both Western and Chinese medicine. They all had experience caring for terminally ill patients. The research question posed to them was, “What did you observe during the dying process of patients based on the concepts of traditional Chinese medicine?” We conducted in-depth interviews with these doctors, and some keywords related to the dying process were identified in the interview. Then, we used these key words to perform qualitative analysis with the NVivo 8 software (QSR International Pty Ltd, Australia) and hand-searched Chinese medical literature, including medical textbooks, for information on signs of dying. Using the same criteria, we also searched the Chinese Electronic Periodical Services for Chinese medical research articles. Information from seven classical textbooks that discuss signs of dying and provide information on predicting patients’ deaths was also included [10–16]. These textbooks are regarded as the most important references in traditional Chinese medicine and are used to train traditional Chinese medicine doctors.

The search process to identify signs of dying in Tibetan medicine was similar to that for traditional Chinese medicine and was performed using qualitative analysis software. Information from three books, namely, *The Four Medical Classics* [17], *The Tibetan Book of the Dead* [18], and *The Tibetan Book of Living and Dying* [19], was included in the study because these references are the major textbooks for training Tibetan medicine doctors.

3. Results

Several clinical features have been identified as indicators of a fast approaching death, but very few studies have investigated the reliability of these signs [6]. In contemporary Western medicine, studies commonly show that the physiologic symptoms of impending death include dyspnea, change in the level of consciousness, pain, and death rattle (Table 1) [3,6,8,20–23]. The reported incidences of respiratory symptoms such as dyspnea and death rattle were 50%–62% [8,21] and 39%, respectively [8]. The mean (median) durations from the onset of death rattle and severe dyspnea (respiration with mandibular movement) to actual death were 57 (23) hours and 7.6 (2.5) hours [20], respectively. The incidence of loss of consciousness within 48–72 hours before death

ranged from 7%–45% [8,21–23], and delirium occurred in 29% of patients [8]. The reported incidences of symptoms varied depending on the underlying disease. For example, only 20% of patients with heart failure or lung cancer lost consciousness [21]. Pain was another important issue for dying patients. About 40%–44% of patients experienced severe pain [8,21]. Analgesic use usually increased as the patient came closer to death [20]. Other common signs included fatigue, cyanotic extremities, absence of pulse in the radial artery, nausea, and vomiting [8,20,21]. In one study, 53% of the patients had three or more of these signs [8]. As the patient came closer to death, the number of severe signs increased [3].

In the analysis of interviews with traditional Chinese doctors, several words or phrases about the dying process, such as dyspnea with a flushed face and staring without focus, were noted. These words were then used as key search words in traditional Chinese literature.

End-of-life symptoms and signs were described in the book *Huangdi Neijing (Yellow Emperor’s Inner Canon)* [10], a significant record on traditional Chinese medicine that was written 2000 years ago. Other important ancient medical texts included the *Shanghanlun (Treatise on Cold Damage Disorders)* [24], the *Maijing (The Pulse Classic)* [11], and the *Four Scholastic Sects of Jin-Yuan Dynasties*, all of which have detailed descriptions of procedures for identification of dying patients. Generally, traditional Chinese medicine does not lay emphasis on a single symptom but stresses a series of syndrome complexes to describe signs of dying. For example, *The Pulse Classic* shows that a syndrome complex comprising dyspnea, vomiting, cellulitis, pressure sores, blindness, pain in the bones, and beads of perspiration indicates death [11]. Traditional Chinese medicine also lays emphasis on the importance of the time of death and draws inferences on the time of death on the basis of different syndrome complexes. For instance, the *Jing Yue Quan Shu (The Complete Works of Zhang Jing-Yue)* states that patients who present with the syndrome complex of deafness, retraction of the scrotum, refusal to eat or drink, and disturbance in consciousness will die in 6 days [12]. An analysis of the traditional Chinese medical literature on signs of dying based on various physiologic systems revealed that the most commonly mentioned symptoms were dyspnea, delirium, cyanosis, panting, and staring without focus [10–13,24]. Some dying signs, such as a ruddy face of a cachexia-affected patient [11,13], a dark-yellowish, dry tongue [11], and a paradoxical pulse [25], are only mentioned in traditional Chinese medical literature. The symptoms of various diseases can be compared with those described in contemporary Western medicine. For instance, the syndrome complex composed of tachypnea, hemoptysis, swelling of the extremities and abdomen, yellowing of the skin, and the inability to speak [11] that has been described to predict death in *The Pulse Classic* are consistent with the end-stage symptoms of liver cirrhosis with esophageal varices described in Western medicine.

Tibetan medicine postulates that all parts of the body will show signs of dying when the patient is close to death. These are divided into distant signs of death and imminent signs of death. Distant signs are mainly symptoms occurring in each organ system, such as nasal flaring, darkening of the tongue, lips turning outward, bulging eyes, and sunken, dark eye sockets [17], which are similar to terminal signs in Western medicine. In Tibetan medicine, the body is considered to be composed of five elements, i.e., earth, water, fire, wind, and space. In the process of dying, the five elements dissolve one after the other (Table 2). The first element to dissolve is earth. As a result, the body becomes weak and loses strength. The mind becomes agitated and delirious. When the water element dissolves, the body begins to lose fluids. The patient experiences faecal and urinary incontinence and dryness in the mouth and throat. When

Table 1
Symptoms and signs of impending death in Western medicine.

Dying sign/symptom	Frequency (%)
Dyspnea	50–6% [8,21]
Death rattle	39 ^b
Change in consciousness	7–45 [8,21–23]
Delirium	29 ^b
Pain	40–44 [8,21]

Table 2
Irreversible dying signs in Tibetan medicine.

Stages	Dying signs
Earth dissolution	Felt weakness, agitated mind
Water dissolution	Body fluid loss, incontinence, lips are drawn and bloodless, mouth sticky and clogged
Fire dissolution	Mouth and nose dry up, the warmth of body seeps away from the feet and hands, poor digestion, difficult to perceive anything outside of us
Air dissolution	Felt difficult to breath, short and labored breath, longer expiration, no response to outside stimulus
Space dissolution	All the vital signs stop

the fire element dissolves, the mouth and nose completely dry up. The body temperature decreases, usually starting in the hands and feet. The patient cannot digest food. When the wind element dissolves, the patient experiences difficulties breathing, accompanied by rasping and panting. The patient experiences a state of confusion, and is unaware of the outside world. When the space element dissolves, all vital signs are lost, and the process of dying enters the stage of dissolution of one’s inner consciousness, which occurs over the next 49 days; during this period, the patient would have been certified as ‘dead’ in Western medicine [17,19]. Thus, the dying process in Tibetan medicine is a sequence of intricate changes with a proper order. The body and the mind gradually dissolve in the process. Each step in this process has its specific manifestations [19]. Furthermore, Tibetan medicine lays emphasis on the presence of company during the dying process. Therefore, by observing the detailed changes in dying signs, doctors can provide optimal care to patients by ensuring that the families of patients keep them company at their death.

4. Discussion

4.1. Comparison of the dying process in traditional Chinese, Western, and Tibetan medicine

The diagnostic methods used to describe dying signs in Western medicine are simple and can be easily performed. The criteria for diagnosis usually depend on the occurrence of symptoms in each individual. Symptoms do not seem to be interrelated, and there is a large variance among individuals [20]. In traditional Chinese medicine, dying signs are commonly described as symptom complexes, and sole symptoms are rarely presented as signs of impending death. The interrelation and order of occurrence of these signs might not be obvious, but their occurrence at the same time or one after the other is thought to be valuable for diagnosis. In Tibetan medicine, signs of dying are generally interrelated and have a proper order. The process of dying is considered similar for each individual, but the duration of this process is believed to vary. Without the aid of radiology or reliable data from the laboratory, physicians who practice traditional Chinese and Tibetan medicine carefully observe the patient’s symptoms. Therefore, their descriptions of the signs and symptoms of dying are unique and intricate and are naturally different from descriptions in Western medicine in some aspects.

Although the descriptions and the concepts of the dying process among traditional Chinese medicine, Tibetan, and Western medicine vary, the observations of occurrence of symptoms or signs show many similarities, including the occurrence of fatigue, dyspnea, delirium, and unconsciousness. Both traditional Chinese and Tibetan medicine suggest some common symptoms, including low body temperature with flushing over the face and a contracted scrotum; however, Western medicine does not describe these symptoms (Table 3). Traditional Chinese and Tibetan medicine

Table 3
Symptoms and signs mentioned in all three medicine systems.

Dying signs in different medicine systems	Western medicine	Traditional Chinese medicine	Tibetan medicine
Fatigue, dyspnea, delirium, unconsciousness	+	+	+
Lower body temperature but flush over face, retracted scrotum ^a	–	+	+
Staring without focus, beads of perspiration, paradoxical pulse ^b	–	+	–
Contracted penis, drooping scrotum, tongue turning black, lips turning outward ^c	–	–	+

+ = Have been mentioned; – = Have not been mentioned.

^a Dying signs and symptoms mentioned in both traditional Chinese and Tibetan medicines.

^b Dying signs and symptoms mentioned only in traditional Chinese medicine.

^c Dying signs and symptoms mentioned only in Tibetan medicine.

mention few treatments for the symptoms manifested before death, especially pain.

4.2. Duration from the occurrence of signs until death cannot be precisely predicted

In Western medicine, studies on predicting the timing of death usually apply a prospective cohort design [26] and select patients with a median survival of more than 3 weeks. The results show that the survival of individual patients cannot be predicted with certainty. Traditional Chinese medical literature usually focuses on specific prognosis of dying periods within a few days or hours of the first manifestation of signs of dying. Although Tibetan medicine divides the observation of dying signs into distant and imminent signs of death, Tibetan medical books do not specify the demarcation between these two periods, the occurrence of each sign, and possible survival periods [20]. Moreover, signs of dying vary from person to person, and this variation also affects the accuracy of predictions of survival periods [20].

4.3. End-of-life care in traditional Chinese and Tibetan medicines

Traditional Chinese, Tibetan, and Western medicine all have their own theories and treatments for dying patients. The notion of hospice care has been widely developed in the West in recent years. Enabling patients to feel comfortable is an important aspect in end-of-life care in Western medicine. In traditional Chinese medicine, descriptions of signs are more commonly cited in medical literature than methods of treatment in the care of patients with terminal illnesses. It is considered that one’s appearance represents the result of the balance or imbalance of one’s internal systems. Therefore, even if signs of dying are observed in patients, Chinese physicians will continue to treat the source of the disease. But they tend to be more conservative in treatment and may leave patients to endure enormous pain in the process of dying. However, traditional Chinese medicine lays emphasis on the clarity of mind, which can enable the body to protect itself against outside invasion as well as improve symptoms. It is feasible to apply Qigong, acupuncture, Tui Na massage, and Chinese herbal medicine to achieve clarity of mind [27]. We can develop end-of-life care in traditional Chinese medicine on the basis of this concept. In principle, Tibetan medicine is similar to traditional Chinese medicine with regard to treating signs of dying, mainly treating the source of disease. The distant signs of death might improve and disappear if patients receive active treatment; when imminent signs of death occur, death is inevitable, even though the illness has improved [17]. Tibetan medicine has a strong relationship with religious

beliefs in the spiritual aspect. Tibetan Buddhism has a systematic method called Phowa to help dying people. The love, care, emotional, and practical support from surrounding people leads the patient's consciousness to the "Pure Land" and to its peaceful end [19].

The findings in this study may lead to further prospective observational studies of terminally ill people and detailed recording of the dying process by applying knowledge from Western and traditional Asian medicine.

5. Conclusion

The predictions of clinicians are highly correlated with actual survival [28]. Without referring to laboratory data, traditional Chinese and Tibetan medicine give priority to observed signs and symptoms in patients. These theories of traditional medicine are valuable for clinical reference. Although Western medicine is predominant in hospice care, the notion of traditional Chinese medicine deeply influences the decisions of patients and their families in the choice of treatment. Therefore, a deeper understanding of traditional medicine could enable us to advance our knowledge of patient symptoms as well as improve the quality of care for dying patients.

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