

Insights into Chinese perspectives on do-not-resuscitate (DNR) orders from an examination of DNR order form completeness for cancer patients

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Abstract

Purpose Discussing end-of-life care with patients is often considered taboo, and signing a do-not-resuscitate (DNR) order is difficult for most patients, especially in Chinese culture. This study investigated distributions and details related to the signing of DNR orders, as well as the completeness of various DNR order forms.

Methods Retrospective chart reviews were performed. We screened all charts from a teaching hospital in Taiwan for patients who died of cancer during the period from January 2010 to December 2011. A total of 829 patient records were included in the analysis. The details of the DNR order forms were recorded.

Results The DNR order signing rate was 99.8 %. The percentage of DNR orders signed by patients themselves (DNR-P) was 22.6 %, while the percentage of orders signed by surrogates (DNR-S) was 77.2 %. The percentage of signed DNR forms that were completely filled out was 78.4 %. The percentage of DNR-S forms that were completed was 81.7 %, while the percentage of DNR-P forms that were completely filled out was only 67.6 %.

Conclusion Almost all the cancer patients had a signed DNR order, but for the majority of them, the order was signed by a surrogate. Negative attitudes of discussing death from medical professionals and/or the family members of patients may account for the higher number of signed DNR-S orders than DNR-P orders. Moreover, early obtainment of signed DNR orders should be sought, as getting the orders earlier could promote the quality of end-of-life care, especially in non-oncology wards.

Keywords Chinese culture · Palliative care · Do-not-resuscitate (DNR) · End-of-life care discussion · Cancer

Introduction

Cancer has been the leading cause of death in Taiwan since 1982. When the cancer patient could not be cured, the objective of treatment should be shifted to palliative care. Generally speaking, cancer patients should receive referrals for palliative care earlier than they typically do at present in order to ensure quality end-of-life (EOL) care [1]. In Asian countries, surrogates are often involved in decision making for such patients [2]. Therefore, medical professionals need to offer information on end-of-life (EOL) care to patients and their surrogates. The proper handling, however, of such discussions and related decisions remains a challenge for many medical professionals. Firstly, it is important that the medical personnel respect their patients' wishes, but in some cases, the patients are unconscious and unable to render any decision, so their surrogates must make these important decisions for them. To obtain appropriate care and a less difficult death, cancer patients can sign a do-not-resuscitate

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(DNR) consent in advance to avoid receiving cardiopulmonary resuscitation (CPR). This approach can enhance human dignity and prevent needless suffering from unnecessary treatments. However, there has been little research exploring how Chinese cultural influences might affect the signing of DNR orders for cancer patients of Chinese background. The signing of DNR orders by patients in Taiwan has typically been delayed [3]. The average interval between the signing of a DNR and death has been short [4]. In a study by Huang et al. (2008), 17.9 % of DNR consents were signed by patients, with the remainder signed by surrogates [5]. Therefore, DNR consents are usually filled out by surrogates in Taiwan. The same phenomenon has been observed not only in Taiwan but also in Korea [6] and Singapore [2, 7]. In all these countries, doctors tend to discuss the DNR issue with family members instead of patients. This is markedly different from normal practice in non-Asian countries [8–13]. The literature regarding discussions about signing DNR orders for cancer patients is limited, the percentage form signed by patients themselves is low, and the data regarding DNRs are doubtful.

The Patient Self-Determination Act ensures patient autonomy and self-determination in the USA. In Taiwan, the Legislative Yuan of the Republic of China has enacted the Hospice and Palliative Regulation, and DNRs have been legal since May 2000. The value of both laws is that they advocate and ensure guarantees for patient EOL care. A DNR is a legal form that declares a refusal of CPR when a person suffers cardiac arrest. Informing a patient of his or her terminal condition is a requirement of the Hospice and Palliative Regulation. However, complete and entire truth telling in this regard is not defined. In the USA, if a patient does not want CPR, a formal document to that effect must be signed [14]. Similarly, based on the Hospice and Palliative Regulation in Taiwan, a DNR-P consent in Taiwan can be filled out and signed by an adult older than 20 years of age. It will include spaces for the name, ID number, and the address of patient, as well as for the signing date and two witnesses [15].

In Taiwan, there are two types of DNR consent: one is a DNR consent signed by the patient (DNR-P), and the other is a DNR consent signed by a surrogate (DNR-S). In accordance with the Hospice and Palliative Regulation, the surrogate can choose to sign a DNR-S when a patient loses consciousness and cannot indicate his or her will. The surrogate is always a family member of the patient. If a cancer patient at EOL does not have a DNR-P or DNR-S, medical professionals are required to use every means to prolong the life of the patient.

Theoretically, patients or surrogates in Taiwan can sign a DNR order when medical professionals explain EOL conditions. When they sign a DNR order, they will not receive traditional CPR in situations that would otherwise require it. Death, for such patients, is to be natural. Telling patients the truth should be an essential part of a dignified death for

cancer patients. The Bureau of Health Promotion of the Department of Health in Taiwan conducted a large survey of 2,188 cancer patients and 1,657 of their families regarding EOL care discussions in Taiwan [16]. The results of the survey found that 68 % of patients accept DNR when they are in critical condition, 16 % of patients want CPR, and 15 % of patients were uncertain of their choice. Most cancer patients who have had EOL care discussions do not want CPR. Personal philosophies and thoughts are related to decisions about signing DNR orders. If patients would have poor quality of life after CPR, they do not have to undergo it [17]. Although the medical system in Taiwan is modeled on those of Western nations, the culture and choices regarding EOL care are different between Asian and Western countries. There is a lot of evidence regarding EOL care discussions in Western countries, but cultural attitudes towards death are different in Chinese societies from those in Western countries. Nevertheless, there are few studies on Chinese cultural attitudes toward death [18].

Physician's attitude is a factor associated with discussions about EOL care [19]. A research by Mack et al. [20] indicated that 87 % of patients had discussions with their medical professionals about death before death occurred. We hope that medical professionals in Chinese cultures respect patients by telling them the truth of their situations, especially for impending death, instead of avoidance. If so, then EOL discussions could enhance care quality. In the present study, we sought to explore several issues: (1) the frequency of a signed DNR form among cancer patients at EOL and (2) the frequency by type of DNR consent. With this information, we provide guidance to practitioners regarding EOL discussions.

Methods

Study design and population

A retrospective chart review was adopted as the method of investigation in this study. It was approved by the Institutional Review Board of Taiwan University Hospital. We screened all the charts of patients who died of cancer at a teaching hospital in northern Taiwan during the period from January 2010 to December 2011.

Variables of data collection

Three researchers with more than 20 years of experience in EOL care collected data. The first researchers reviewed each individual chart to find relevant information which was then taken down on paper. Another researcher entered these data into an Excel file. To ensure the consistency of the data, the third researcher checked the Excel file against the paper

records. The data included three parts: (1) demographic information, (2) disease-related information, and (3) the signed DNR consent information.

The demographic information included age and gender, and the disease-related information included characteristics of ward, cancer type, and pattern of discharge from hospital. The signed DNR consent information contained the type of DNR consent and its completeness. Completeness of the DNR-P consent was determined by the inclusion or omission of the following pieces of information: diagnosis, patient's signature, patient's basic data, including ID number, address, telephone number, and birth date, in addition to signing date and the signatures, ID numbers, addresses, and telephone numbers of two witnesses. Completeness of the DNR-S consent was determined by the inclusion or omission of the diagnosis, surrogate's signature, signing date, and surrogate's basic data, including ID number, address, telephone number, and birth date, in addition to the surrogate's relationship with the patients. All items filled out completely were considered to be complete; otherwise, they were deemed incomplete.

Statistical analysis

Demographic information, disease-related information, type of DNR consent, and completeness of DNR consent forms were analyzed using descriptive analyses. Furthermore, the chi-square test was used to examine associations among demographic information, disease-related information, and the DNR consent variables (i.e., type of DNR consent and DNR consent completeness). All reported *P* values were two sided, and *P* values <0.05 were considered significant. All statistical analyses were performed using the PASW, version 18.0 (SPSS Inc., Chicago, IL).

Results

Patient and disease-related information

A total 829 patients died of cancer at the study hospital from January 2010 to December 2011. There were 378 cancer deaths in 2010. The average age at death was 67.54

Table 1 Patients' information (*N*=829)

| Variables | Number | Percentage | Mean | Standard deviation |
|-----------|--------|------------|-------|--------------------|
| Age | 829 | 100 | 67.54 | 14.58 |
| Gender | | | | |
| Male | 487 | 58.7 | | |
| Female | 342 | 41.3 | | |

(SD=14.58) years old. A total of 58.7 % of the deceased patients were men. Table 1 contains the patient characteristics.

The percentage (71.7 %) of deaths in the oncology and palliative ward was higher than that of other wards. Fifty-two percent of the patients chose discharge against medical advice (AMA). They were diagnosed with various types of cancer, including gastrointestinal (52.6 %), lung (17.2 %), head and neck (7.8 %), genitourinary (6.3 %), breast (3.6 %), hematological (3.3 %), and other cancers (9.1 %). The disease-related information for the patients is listed in Table 2.

The type and the completeness of DNR consent

There were 77.2 % of DNR orders signed by surrogates. The rate of total completeness was 78.4 %. Of these, the rate of total completeness for the DNR-S forms (81.7 %) was higher than that for the DNR-P (67.6 %) forms (Table 3). The missing items of DNR-P forms was deficit of information regarding witnesses (*n*=46, 75.4 %), patient's signature (*n*=19, 31.1 %), diagnosis (*n*=15, 24.6 %), information regarding patient (*n*=6, 9.8 %), and signing date (*n*=3, 4.9 %). The missing items of DNR-S forms was deficit for diagnosis (*n*=91, 77.8 %), information regarding surrogate (*n*=17, 14.5 %), surrogate's signature (*n*=9, 7.7 %), and signing date (*n*=7, 6.0 %).

Table 2 Disease-related information (*N*=829)

| Variables | Number | Percentage |
|------------------------------------|--------|------------|
| Characteristics of ward | | |
| Oncology and palliative ward | 594 | 71.7 |
| Outpatient department | 80 | 9.7 |
| Emergency | 4 | 0.5 |
| General wards | 132 | 15.9 |
| Intensive care unit | 19 | 2.3 |
| Cancer type | | |
| Head and neck | 65 | 7.8 |
| Gastrointestinal | 436 | 52.6 |
| Lung | 144 | 17.2 |
| Genitourinary | 52 | 6.3 |
| Gynecologic | 22 | 2.7 |
| Breast | 30 | 3.6 |
| Male genital cancer | 21 | 2.5 |
| Dermatology | 4 | 0.5 |
| Hematological | 27 | 3.3 |
| Orthopedics | 11 | 1.3 |
| Others | 17 | 2.1 |
| Pattern of discharge from hospital | | |
| AMA | 431 | 52.0 |
| Expired | 398 | 48.0 |

Table 3 DNR consent completeness ($N=829$)

| Variables | Number | Percentage |
|-----------------------|--------|------------|
| Type of DNR | | |
| No signing | 2 | 0.2 |
| DNR-S | 640 | 77.2 |
| DNR-P | 187 | 22.6 |
| Completeness | | |
| Completed | 650 | 78.4 |
| Uncompleted | 177 | 21.4 |
| No signing | 2 | 0.2 |
| Completeness of DNR-S | 640 | 100 |
| Completed | 523 | 81.7 |
| Uncompleted | 117 | 18.3 |
| Completeness of DNR-P | 187 | 100 |
| Completed | 126 | 67.6 |
| Uncompleted | 61 | 31.4 |

Differences between variables and types of DNR consents

The number of signed DNR-P forms in the oncology and palliative ward was more than that of other wards, but the distribution was not statistically different between them ($\chi^2=0.03$, $P=0.87$). Different types of cancer showed differences in the type of DNR signed ($\chi^2=20.62$, $P=0.02$); however, for all the types of cancer, the ratio of DNR-S consents was higher than that of DNR-P consents. The ratio of DNR-P consents was higher for those patients who expired in the hospital than for those who left AMA ($\chi^2=5.01$, $P=0.03$). The completeness of the DNR-S consents was higher than that of the DNR-P consents ($\chi^2=17.61$, $P<0.001$) (Table 4).

Differences between DNR consent completeness and variables

Some disease-related information was found to be statistically different between complete and uncompleted DNR consent. Information regarding the oncology and palliative ward was more complete than information regarding other wards ($\chi^2=68.67$, $P<0.001$). The completeness of forms for those patients who died from hospitals was found to be significantly higher than the completeness of the forms for those who were discharged AMA ($\chi^2=6.04$, $P<0.01$) (Table 5).

Discussion

The study's results indicated that the percentage of signed DNR-P forms was 22.6 %, which is much lower than the percentage of signed DNR-S forms (77.2 %). The percentage of signed DNR-S forms was higher than that found in a

Korean study [2]. In addition, for both DNR-P and DNR-S forms, the date of signing was usually near the date of death, and the patient condition was typically serious. DNR discussion is insufficient and comes too late for patients, meaning that patient autonomy in decision making is not assured [2, 21]. For clinical care in Taiwan, families are more often a patient's delegate, making the decisions for the patient. This creates an ethical dilemma. According to law, a DNR order can only be established with sufficient communication. Only when a patient is clear-minded and claims that he does not want to know his condition can DNR consent be signed by a surrogate. After sufficient communication, a patient can understand his situation and prepare for death. This is the significance of signing a DNR order. In Chinese society, a patient may want to know about and discuss his condition, but family members or medical professionals may conceal such information from him. These actions, however, violate common medical ethical principles. We suggest that EOL care discussions should be included in the treatment plan and adequate discussion should be undertaken to allow for patient autonomy and to preserve the best interests of cancer patients.

The literature about DNR consents in Taiwan prior to August 12, 2009, may not be completely relevant now because DNRs were divided into the aforementioned two kinds on that date. Therefore, this is the first study to explore the completeness of the two types of signed DNR orders in Taiwan. The chart review procedure used was rigorous and detailed.

The phenomenon of insufficient EOL discussions is found not only in Chinese society but also in Western countries. Physicians are not sufficiently trained to discussing resuscitation and can not properly provide information for patients or family members [20]. Moreover, even physicians make erroneous judgments regarding advance directives [22]. If medical professionals express themselves clearly, then that will help patients to understand EOL methods of caring for patients. Cancer patients have in advance EOL discussions and a higher quality of EOL [9, 23]. However, medical professionals often evade important questions in favor of easy explanations. The meaning of an uncompleted DNR order may indicate that patients do not understand the entire story. Only clearly implemented truth telling can make the DNR consent complete. Therefore, education on filling up and signing a DNR order is needed for completeness.

A research by Mack et al. [20] indicated that 87 % of dying patients had discussions with their medical professionals before death. Seventy-three percent of dying patients had such discussions within 1 year of death. However, in Chinese society, informing bad news is not only a shocking event in traditional culture, but also related to major issues for the family. Moreover, families do not want to let patients

Table 4 Differences among DNR consent and variables ($N=827$)

| Variables | DNR-S ($n=640$) | DNR-P ($n=187$) | χ^2 | P value |
|------------------------------------|----------------------|----------------------|----------|-----------|
| Characteristics of ward | | | 0.03 | 0.87 |
| Oncology and palliative | 459 | 133 | | |
| Others | 181 | 54 | | |
| Gender | | | 0.68 | 0.41 |
| Male | 372 | 115 | | |
| Female | 268 | 72 | | |
| Cancer type | | | 20.62 | 0.02 |
| Head and neck | 52 | 13 | | |
| Gastrointestinal | 323 | 111 | | |
| Lung | 122 | 22 | | |
| Genitourinary | 35 | 17 | | |
| Gynecologic | 22 | 0 | | |
| Breast | 20 | 10 | | |
| Male genital cancer | 17 | 4 | | |
| Dermatology | 3 | 1 | | |
| Hematological | 24 | 3 | | |
| Orthopedics | 9 | 2 | | |
| Others | 13 | 4 | | |
| Pattern of discharge from hospital | | | 5.01 | 0.03 |
| AMA | 347 | 84 | | |
| Expired | 293 | 103 | | |
| Completeness | | | 17.61 | <0.001 |
| Complete | 523 | 126 | | |
| Uncompleted | 117 | 61 | | |

know about the terminal conditions because they do not know how to deal with the attendant emotions, and even medical teams often do not know how to handle such families. As a consequence, EOL discussions are often not conducted in such health-care systems. Medical professionals always wait until a patient loses consciousness and cannot make a decision. Then, the DNR order is decided and signed more easily by the family. In the Chinese society, only when patients fully recognize the coming and unavoidable death that they would start to prepare the EOL issues and choose for a dying place, especially the hospital. On the

other hand, family members always signed the DNR-S and decided to bring the patient home in a rush when the patient lost consciousness and was dying. This is a special situation for Chinese culture that may explain why the patients who expired in the hospital had more DNR-P consents. While family members that signed a DNR order, especially when the family member is a son or daughter, need to consider societal views at the same time. Because filial duty is the first priority and a fundamental moral in Chinese culture, the patient's children may fear being accused of behaving without sufficient filial devotion by signing a DNR-S order.

In our study, the completeness of the DNR-S consents was higher than that of the DNR-P consents. The reasons might be that the obtainment of the DNR-S is easier than the DNR-P, and the items of the DNR-S consents are fewer than those of the DNR-P. Moreover, the DNR-S does not require two witnesses and patient's signature. In view of the law, medical professionals should always tell the truth to patients about their conditions, but different professionals have perceived the specifics of that injunctive differently. At the least, EOL care discussions should include a decision regarding a DNR. Missing diagnoses on the DNR-P forms resulted in incompleteness in our study; the reason would be supposed that writing down the "diagnosis" was troublesome because all the DNR consents have been clearly printed except the space of cancer diagnosis which should be written by the physician. If the explanation of the patient's condition is complete, the signed DNR order is more likely to be filled out completely. Moreover, the completeness of a DNR order is indicated as discretion explanation. To promote the appropriate hospice spirit, we suggest that such completeness is needed in order to provide patients with autonomy regarding important decisions, such as those regarding EOL care and DNR consent. Thus, the signing of DNR is not only a document but also a care strategy.

A study by Huang et al. [5] suggested that improvements in the medical decisions of terminal cancer patients could result from early truth telling and continuing education for medical professionals. Medical professionals are important factors influencing, and sometimes impeding, the completion of DNR orders. For improvement of EOL care, the attitude of medical professionals could enhance some strategies, such as the establishing policy, renewing of the establishing policy of

Table 5 Differences among DNR consent completeness and variables ($N=821$)

| Variables | Completed ($n=650$) | Uncompleted ($n=171$) | χ^2 | P value |
|------------------------------------|-----------------------|-------------------------|----------|-----------|
| Characteristics of ward | | | 68.67 | <0.001 |
| Oncology and palliative | 509 | 79 | | |
| Others | 141 | 92 | | |
| Pattern of discharge from hospital | | | 6.04 | 0.01 |
| AMA | 352 | 74 | | |
| Expired | 298 | 97 | | |

DNR, improving communication skill, and giving rewards. It could safeguard the patient from unnecessary intervention and maintain their autonomy [21]. Because we adopted retrospective chart reviews as the method of investigation, it was unclear whether the omissions of information on the forms were the result of willful omissions by the patient or oversights on the part by the doctor. This was a limitation in this study. Moreover, we suggest that more research is needed to explore the physicians' training, the reasons for the timing of EOL care discussions, and the relationships of different variables to the type of DNR consent form used. Clear information on such matter could have an impact on the professional practice of physicians in the future.

In conclusion, our study indicated that terminal cancer patients in Taiwan typically have a signed DNR consent prior to death, but most of these DNR consents were signed by the family rather than by the patients. The reasons for this phenomenon need to be further explored. Disease-related information and different characteristics of the ward did influence DNR consent signing patterns. In any case, rates of completeness for DNR consents need to be improved. Our findings provide guidance to practitioners regarding EOL discussions. In sum, medical professionals need to make complete EOL care discussion with cancer patients to improve the quality of care.

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Conflict of interest The authors declare no conflict of interest. We have full control of all primary data and agree to allow the journal to review the data if requested.

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