Original Article

Investigating the Attitude of Healthcare Providers, Patients, and Their Families toward "Do Not Resuscitate" Orders in an Iranian Oncology Hospital

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Abstract

Aim: The decision-making process for do-not-resuscitate (DNR) order has always been challenging. Cultural and religious issues have limited the issuance and execution of DNR orders in Iran. The purpose of this study was to assess the attitude of the nurses, physicians, patients, and their families toward the DNR order. **Subjects and Methods:** In this cross-sectional study, 343 participants (201 patients, 95 family members, and 47 healthcare providers) from Omid Oncology Hospital, Mashhad, Iran, were surveyed during 2017–2018. All the participants were asked to fill in a checklist of demographic information and a validated questionnaire about their attitude toward DNR orders after giving consent. The data were analyzed using SPSS software and values of $P < 0.05$ were considered statistically significant. **Results:** Overall, 201 patients and 95 of their family members, as well as 47 healthcare providers (doctors and nurses), were surveyed. The mean age of participants was 48.75 ± 15.62 years. The attitude of the participants regarding the DNR order was significantly different in 10 of the 11 items ($P \leq 0.005$). Among the three groups of participants, healthcare providers showed the most positive attitude regarding the DNR order. The attitude of participants regarding the DNR orders was significantly associated with age, occupation status, residential place, educational status, and income level ($P < 0.05$). **Conclusions:** Various factors, such as economic status, level of education, place of residence, and gender, can be effective on decision-making regarding the DNR orders. Unified and sustained education regarding moral and cultural issues can be helpful in the reconciliation of the attitudes between caregivers and patients.

Keywords: Attitude, do-not-resuscitate, nurse, patient, physician

Introduction

The emergent procedure of cardiopulmonary resuscitation (CPR) intends to help patients with respiratory and cardiac arrest live longer. However, not all patients who undergo CPR can be revived, and only 7.6%–21.7% of them are reported to survive until discharge. The survival chance is not equal in all patients, and those with better prognoses have higher survival rates after CPR. It can postpone inevitable deaths in patients with poor prognosis, extend their suffering, aggravate the healthcare workers burnout, and consume limited resources. Moreover, even patients who survived a successful CPR, often suffer from serious and sometimes life-long complications because of the invasive nature of CPR.[1-6]

All of the above led to the introduction of "do-not-resuscitate" (DNR) order in the 1970s in the United States. These orders are defined as not to initiate CPR in times of cardiac or respiratory arrest and are usually used when the patient's prognosis is very poor. DNR order is undoubtedly among the most important decisions in patient care, but the essentials of the physician–patient relationship are often neglected in this regard. On the one hand, physicians often lack the necessary awareness of their patients' preferences regarding their end of life care. On the other hand, although DNR only relates to the CPR procedure, it may lead to biased behavior of caregivers in other aspects of patient care.[2,4,7,8]

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Many patients and their families lack the general information about DNR orders and their confusion in this regard may result in stressing over their decision-making for DNR order. Furthermore, their understandings of the survival chance in patients undergoing CPR are often incorrect and sometimes unreal. The family members and surrogates of patients make DNR decisions based on their own opinions rather than the preferences of the patient, especially if the patient is ill or incompetent.[9,10]

Although physicians are often the major people involved at the end of life care of the critically ill patients, in many situations they are unaware of the patient's preferences because DNR conversations have not taken place. Improved knowledge about patient preferences will lead to an easier task of the end of life caregivers with respect to patient's autonomy as well as fewer unwanted or unnecessary interventions.[11]

Literature suggests that there are contrasting views regarding the DNR and end of life preferences in different regions of the world. Cultural and religious issues, as well as common local beliefs of the region, play important roles in the social perception of the end of life issues.[12,13] These factors have limited the possibility of issuance and execution of DNR orders in Iran. Few studies have investigated the attitude toward DNR orders in the Iranian population. Therefore, this study was aimed to assess the attitude of the nurses, physicians, patients, and their families about the DNR orders. In this way, we can investigate the perceptions of the community, their willingness, and readiness toward accepting and applying DNR orders.

Subjects and Methods

This cross-sectional study was conducted in Omid Oncology Hospital, Mashhad, Iran, between March 2017 and March 2018. All the patients consented to enter the study through written forms after the researchers explained the objectives and protocol of the study to them. This study was approved by the Ethics Committee of Mashhad University of Medical Sciences under the approval code IR.MUMS.fm.REC.1394.112.

A total of 201 end-stage cancer patients and 95 persons from their families, as well as 47 healthcare providers (nurses and doctors with at least 6 months of work experience in the oncology hospital), were selected through random available sampling method. Our inclusion criteria were being literate and having the ability to read and write Persian. Patients aged under 18 years or those who did not wish to continue the survey were excluded from the study.

All the included participants were contacted by face-to-face interviews, in which they were asked to fill in a checklist of demographic information, including age, sex, occupational status, living residence (rural or urban), educational status, and economical status. Then, they were given a brief explanation about the DNR orders and were asked to fill in a questionnaire about their attitude toward DNR orders.

We used an 11-item questionnaire that was designed and validated by Falahi *et al.* in the Persian language.[14] The questionnaire contained 11 questions in a 5-point Likert scale starting with 1 "completely disagree" and ending with 5 "completely agree." The 11th question that had a negative concept about DNR was interpreted inversely with 1 being "completely agree" and 5 being "completely disagree." Higher scores from this questionnaire indicated more positive attitude of participants toward DNR orders.[14,15]

Data were extracted from checklists and questionnaires and entered into SPSS software (version 22 for Windows, IBM Statistics, Chicago, IL, United States) for data analysis. Descriptive statistics were used to present the data. Chi-square test, Independent samples *t*-test, ANOVA test, and their nonparametric equivalents were used where appropriate to analyze the data.

Results

Overall, 343 participants (201 patients, 95 family members, and 47 healthcare providers) attended in this study, of whom 201 (58.6%) were male and 142 (41.4%) were female. The demographic characteristics of participants are shown and compared in Table 1.

There were significant differences in the attitude of participants regarding the DNR in the first ten questions of the questionnaire, between the three groups ($P < 0.005$). However, the participants in different groups showed no significant difference in their attitude toward the 11th question [Table 2].

The caregivers had the most positive attitude toward the DNR orders (mean score = 38.37 ± 5.22), compared to the patients (30.22 ± 5.15) and their family (32.04 ± 8.17). One-way ANOVA test showed a significant difference between the groups in this regard ($P < 0.0001$). The Bonferroni *post hoc* test revealed statistically significant differences between the total score in caregivers and both the patients ($P < 0.0001$) and the families ($P < 0.0001$). However, the difference in total scores between the patients and their families did not reach the significance level ($P < 0.059$).

Table 3 compares the mean total scores between different subgroups of the participants. As the table implies, there was a significant difference between participants of different age levels ($P < 0.0001$). The most positive attitude was observed in participants aged 18–39 years (mean score = 34.45 ± 7.65). However, there was no statistically significant difference between male and female participants ($P = 0.671$).

There was a significant difference among participants with different occupational states ($P < 0.0001$), with the employees having the most positive attitude (mean score = 35.72 ± 6.39). Besides, the urban residents had a significantly higher mean total score, compared to the participants residing in rural areas ($P = 0.002$).

The educational status of participants had a significant association with their attitude toward DNR orders ($P < 0.0001$). Individuals with B. S. or higher educational degrees had the most positive attitude (mean score = 35.92 ± 6.26). Moreover, the income level of the participants was significantly associated with their attitude regarding the DNR orders ($P = 0.017$), and

Table 1: Demographic characteristics of participants

Variable	Patients (n=201), n (%)	Family (n=95), n (%)	Caregivers (n=47), n (%)	P
Age (years)	57.19±11.37	39.26±14.30	32.04±7.08	<0.0001*
Gender				
Male	115 (57.21)	61 (64.21)	25 (53.19)	0.376**
Female	86 (42.79)	34 (35.79)	22 (46.81)	
Occupation status				
Nonoccupied	60 (30.45)	36 (42.36)	0	<0.0001**
Worker	27 (13.70)	1 (1.17)	0	
Employee	37 (18.80)	14 (16.47)	47 (100)	
Self-employed	41 (20.81)	31 (36.47)	0	
Retired	32 (16.24)	3 (3.53)	0	
Residence				
Urban	159 (80.30)	85 (89.47)	47 (100)	0.001**
Rural	39 (19.70)	10 (10.53)	0	
Education status				
Illiterate	15 (7.53)	1 (1.37)	0	<0.0001**
Primary school	46 (23.11)	3 (4.11)	0	
High school	66 (33.16)	15 (20.55)	0	
Diploma	56 (28.14)	34 (46.57)	4 (8.50)	
B.S. or higher	16 (8.04)	20 (27.40)	43 (91.50)	
Income level				
Insufficient	44 (21.89)	22 (23.91)	1 (2.13)	0.014**
Sufficient	152 (75.62)	65 (70.65)	45 (95.74)	
Over-sufficient	5 (2.49)	5 (5.44)	1 (2.13)	

*One-way ANOVA test was used, **Chi-square test was used, *P* values below 0.05 were considered as statistically significant

Table 2: Comparison of the attitude of participants regarding the 11 items of the questionnaire

Question	Patients (n=201)	Family (n=95)	Caregivers (n=47)	P*
1. The issuance and execution of DNR order is necessary for patients who are in final stages of the disease	2.22±0.76	2.83±1.41	3.45±1.15	<0.0001
2. The DNR order protects the patient from unnecessary pain and suffering	2.47±0.94	3.07±1.33	3.57±1.15	<0.0001
3. The issuance and execution of DNR order is morally acceptable and right	3.20±0.89	2.97±1.36	3.72±0.94	0.002
4. The issuance and execution of DNR order is in line with maintaining the human dignity	3.27±0.79	2.57±1.17	3.60±0.94	<0.0001
5. The DNR order helps determine the plan for patient resuscitation in the final stages of life	2.99±0.75	2.81±1.18	3.79±0.95	<0.0001
6. If CPR seemed futile to the medical team, it should not be done for the patient	3.37±0.89	3.19±1.22	3.81±1.07	0.005
7. Patients who are on the verge of an imminent definite death should have a DNR order	2.68±0.86	3.24±1.38	3.79±1.02	<0.0001
8. Patients with definite death estimated to occur in the next 6–12 months must have a DNR order	1.98±0.63	2.34±1.15	2.81±1.09	<0.0001
9. If CPR is futile for them, I want my family to have a DNR order	2.26±1.08	3.17±1.20	3.55±0.99	<0.0001
10. The DNR order is not in contrast with my religious beliefs	2.97±1.07	3.34±1.19	3.43±1.13	0.003
11. My culture makes it hard for me to encounter DNR orders	2.56±0.97	2.40±1.19	2.57±1.37	0.224

*Kruskal–Wallis test was used. *P* values below 0.05 were considered as statistically significant. DNR: Do-Not-Resuscitate, CPR: Cardiopulmonary resuscitation

as the income increased the attitude of participants became more positive toward DNR [Table 3].

Discussion

The decision-making process for DNR order is unique because it is so far the only medical decision that should be planned before the condition arises. The literature suggests that medical professionals, including nurses and physicians, are uncertain about the DNR order and its moral and ethical issues. The proper behavior and attitude in treating the patients who are in their last days of life have always been a challenge to the healthcare providers, especially physicians.[16-18]

A study by Vincent , which investigated the attitudes toward the DNR order in different European countries, indicated

Table 3: Comparison of total questionnaire score between different subgroups of participants

Basis of comparison	Subgroups	Total score	*P*
Age (years)	0-17	30.75±4.50	<0.0001*
	18-39	34.45±7.65	
	40-64	31.18±6.19	
	≥65	29.96±5.37	
Gender	Male	31.97±6.87	0.671**
	Female	31.66±6.46	
Occupation status	Nonoccupied	29.54±6.67	<0.0001*
	Worker	29.15±3.95	
	Employee	35.72±6.39	
	Self-employed	31.82±5.82	
	Retired	30.06±5.86	
Residence	Urban	32.26±6.88	0.002**
	Rural	29.51±5.23	
Education status	Illiterate	28.06±6.03	<0.0001*
	Primary school	28.94±4.48	
	High school	31.00±5.69	
	Diploma	31.74±6.90	
	B.S. or higher	35.92±6.26	
Income level	Insufficient	29.61±6.26	0.017*
	Sufficient	32.29±6.75	
	Over-sufficient	34.64±5.92	

*One-way ANOVA test was used, **Independent samples *t*-test was used, *P* values below 0.05 were considered as statistically significant

that generally there are significant differences in DNR decision-making between the healthcare professionals in different countries.[19] This underlines the importance of assessing the attitudes of healthcare providers in different regions to find out their preferences and thoughts about the necessity and usefulness of DNR in dying patients and the hindrances in the way of issuance and execution of these orders.

Our findings showed a significant difference among the surveyed groups in their attitude toward DNR orders. We found that healthcare providers had the most positive outlook on DNR orders, compared with the patients and their families. However, all the three groups showed overall positive attitude to DNR. We also found that the attitude of participants regarding the DNR orders was significantly associated with age, occupation status, residential place, education status, and income level.

Fallahi *et al*. studied the attitude to DNR orders among medical staff of university hospitals in Kermanshah, Iran, with the same data collection tools as ours, and found an overall positive attitude between them. They also found that caregivers who experienced and executed CPR and DNR orders had a more positive attitude toward DNR, compared with those without these experiences.[14] This finding is in line with our results, in which the caregivers, including physicians and nurses, had a positive overall attitude toward DNR orders. However, we did not assess the experiences of medical professionals regarding the execution of CPR and DNR.

Fallahi *et al*. in a similar study with the same settings on 152 physicians found a positive overall attitude to DNR orders, which was significantly associated with the education level of the participants, which is consistent with our findings. However, they did not find any association between the overall score and age group, sex, and experiences of participating in DNR orders, which is in contrast with our findings.[15]

Some other similar studies performed in Iran also yielded similar results. A study by Emami-Razavi *et al*. found a positive attitude among 67% of nurses in a university hospital in Tehran. They also reported that 61% of the nurses thought DNR orders are sporadically necessary.[20] Ghajarzadeh *et al*. surveyed 185 medical students and residents in Tehran and found a positive attitude between them toward the use of DNR order in medical settings. They reported that 74% of residents and 53% of medical students thought the DNR orders are sporadically necessary.[21]

Inconsistently, Mogadasian *et al*. reported a generally negative attitude toward the DNR orders in nurses working in university-affiliated hospitals of East Azerbaijan and Kurdistan provinces. They also observed willingness to knowing more about DNR orders among the participants. They also reported no significant difference in overall attitude to DNR orders between the nurses with Shiite and Sunni religious beliefs.[22] This discrepancy can be attributed to different cultural and ethnic beliefs of the people in the western and eastern provinces of Iran as well as different educations in terms of moral and ethical aspects of medical care.

Several studies from different countries have indicated the association of manifold factors with the attitude towards DNR orders. Consistent with our results, Hileli *et al*. found the education status and income level to be associated with the decision-making of DNR order.[23] Abdallah *et al*. reported that most of the Palestinian physicians and nurses, who-like our participants-are Muslim, thought that their religion and culture influence their attitude to DNR orders.[24]

A recent qualitative study by Cheraghi *et al*. revealed that although the Iranian physicians approve the use of DNR orders because they provide dignity for the dying patients, they do not issue DNR orders themselves, because there is no efficient legal and religious support in this regard.[25] This supports those of other qualitative studies that emphasize the need for new clinical guidelines and policies that authorize the legal issuance of DNR orders for patients who are in their final dying moments.[26,27]

Conclusions

Various economic, educational, ethnic, and personal factors can influence the attitude and decision-making of people regarding DNR orders. Unified and continuous education regarding the moral and cultural issues can be helpful in the reconciliation of the attitudes between caregivers and patients.

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Conflicts of interest

There are no conflicts of interest.

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