J Anal Res Clin Med, 2019, 7(4), 122-8.
doi: 10.15171/jarcm.2019.023, *http://journals.tbzmed.ac.ir/JARCM*

Original Article

Attitude of nurses in intensive care units towards Do Not Resuscitate order

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Article info
Article History:
Received: 31 Oct. 2019
Accepted: 24 Nov. 2019
ePublished: 20 Dec. 2019

Keywords:
Cardiopulmonary Resuscitation,
Nurses,
Attitude

Abstract

Introduction: Do Not Resuscitate (DNR) order has been studied ethically, legally, and religiously in different countries after presentation by the American Medical Association (AMA) in 1974. This study was conducted to investigate the attitude of nurses in intensive care units (ICUs) of hospitals of Tabriz University of Medical Sciences, Tabriz, Iran, towards DNR order.

Methods: 255 nurses working in ICUs were included in a descriptive-analytical study at Tabriz University of Medical Sciences in 2018. The utilized checklist contained two sections: demographic information and 11 questions with a 5-point Likert scale about the attitude towards the DNR order. The scores relating to each question were collected and analyzed.

Results: The average of the total score of the questionnaire was 29.97 ± 8.39. The attitudes of participants were negative in all questions except for the 8th and 11th questions. The total score of the questionnaire was 29.49 ± 8.09 in the group with work experience of 15 years and less and 32.49 ± 9.50 ($P = 0.036$) in the group with a more than 15 years of work experience; which indicates more positive attitude towards the DNR order in individuals with more work experience.

Conclusion: The results showed that in general, the participant nurses did not have positive attitudes concerning the DNR order; however, people with more than 15 years of work experience had more positive attitude towards this order and the investigation of this factor and the causes of its impact on the change of people's attitude should be carried out in further studies.

Citation: Naghshbandi S, Salmasi S, Parsian Z, Rahmani F. **Attitude of nurses in intensive care units towards Do Not Resuscitate order.** J Anal Res Clin Med 2019; 7(4): 122-8. Doi: 10.15171/jarcm.2019.023

Introduction

Cardiopulmonary resuscitation (CPR) is successful in some cases and unsuccessful in most cases[1] and its success depends on the previous medical histories of the patients and prognosis of the background problems and the associated disorder.[2] If the definition of success is considered "return to high-quality life without disability", the percentage of successful cases will be lower.[3,4] On the other hand, the CPR process is accompanied by complications such as rib fracture, permanent neurological problems, retropharyngeal hemorrhage, tracheal damage, and in rare cases damage to abdominal internal organs. The general incidence of these resuscitation-related injuries have been reported 21%-65%.[5,6]

In the late 1960s, numerous reports regarding the complications of CPR and augmentation and prolongation of patients' suffering, due to the temporary return of physiological stability after resuscitation, were submitted. Considering the presence of a condition in which medical staff believe that resuscitation would not have any benefits, withholding the "resuscitation code" or not proceeding for complete resuscitation, expressions such as "demonstrative code", "slow code", etc. gradually became common.[7] Eventually, the American Medical Association (AMA) suggested "DO Not Resuscitate (DNR) code" in 1974 for the first time in patients' treatment process due to the scarcity of successful

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CPRs, costs of inefficient treatments, high possibility of different complications, and increased suffering followed by resuscitation in some patients. Studies have demonstrated that doctors and nurses are uncertain about the DNR order, its ethical aspects, and issuing and implementing of it. This is affected by the attitudes and demands of health care providers and different factors such as culture, religion, race, and geographical features. Thus, in comparison with European countries, the fewer implementation of DNR order in Asian and Muslim countries can be justified to some extent.[8]

Other factors affecting the decision-making of medical staff regarding DNR include level of education, level of individual's participation in patient daycare, type of specialty, duration of education, and job experience. Numerous studies have expressed the effect of the above items on positive attitudes of doctors and nurses concerning the DNR order.[9]

Considering the specific view of Islam on life, such a trend (DNR order) is not accepted in many Islamic countries such as Iran. On the other hand, considering the significant role of medical staff and their attitude in affecting the society's attitude on the ethical challenges regarding medical sciences and development of ethical and legal instructions in this respect, we decided to design a study for investigation of the attitude of nurses in intensive care units (ICUs) of hospitals of Tabriz University of Medical Sciences, Tabriz, Iran, towards the DNR order.

Methods

This descriptive-analytical study was conducted in all ICUs of hospitals of Tabriz University of Medical Sciences in 2018. In this research, all nurses in ICUs of hospitals of Tabriz University of Medical Sciences were the statistical population; they were included in the study by the census method. The final size of the study sample was 255 people. Imperfect completion of the study questionnaire and discontent to participate in the study were the exclusion criteria of the study. This study was approved by Research and Ethics Committee of Islamic Azad University, Tabriz Branch.

The data collection tool in this study was a questionnaire about the attitude towards the resuscitation order. The validity of the questionnaire had been confirmed during the initially-performed studies and in terms of reliability evaluation, the Cronbach's α coefficient was obtained 0.878.[8] This questionnaire contained two sections, demographic data and attitudes towards the DNR order. The demographic questions included age, sex, job experience, and experience of participating in resuscitation team and DNR order. The attitude questionnaire about DNR order contained 11 questions that were designed according to 5-point Likert scale. The options in this questionnaire were graded from 1 to 5. The choices were: completely agree, agree, no idea, disagree, and completely disagree, respectively assigned for grades 5, 4, 3, 2, and 1. Consequently, higher scores demonstrated positive attitudes towards the DNR order. However, on question 11, score 1 was associated with completely agree, score 2 with agree, score 3 with no idea, score 4 with disagree, and score 5 was related to completely disagree. Moreover, for each question, the average score between 1 and 2 represented very negative attitude, between 2 and 2.99 negative attitude, score 3 neutral attitude, between 3.01 and 4 positive attitude, and finally between 4 and 5 represented very positive attitude towards the DNR order. For sample collection, the researcher presented in the ICUs and delivered the study questionnaire to the nurses of the wards after obtaining permission for research and explaining about the aims and the research execution method and obtaining informed consent. The researcher collected the questionnaires after completion by them.

The data obtained from the questionnaires were inserted into SPSS software (version 17, SPSS Inc., Chicago, IL, USA). Descriptive statistics including frequency, distribution tables, average, and standard deviation (SD)

were used for the assessment of variables. The Kolmogorov-Smirnov test was used for analytical statistics in order to investigate the normality of the data. Furthermore, independent t-test was used for comparison of the quantitative data and chi-square test was used for comparison of the qualitative data. P-value was considered less than 0.05 in all cases.

Results

The studied sample included 255 nurses employed in the ICUs of the university hospitals. The average age of people was 33.04 ± 6.61. In terms of sex, 230 people (90.2%) were women and the rest were men. The average of work experience of the nurses was 9.03 ± 6.21 years. In terms of experience, 214 people (83.9%) had work experience of 15 years and less and 41 people (16.1%) had more than 15 years of work experience.

The queries of the questionnaire, the responses of the nurses to the queries, and their scores are presented in table 1. The average of the total score of the questionnaire was 29.97 ± 8.39 among the participants. The attitude of the participants was negative in all questions except for questions 8 and 11.

The impact of the participants' work experience on their attitudes towards the DNR order is presented in table 2. As it can be observed in table 2, the attitudes of two groups were different from each other in questions 1, 6, and 7 and the rate of positive attitude was higher in all three questions for people with more than 15 years of experience. The total score of the questionnaire was 29.49 ± 8.09 in the group with work experience of 15 years and less and 32.49 ± 9.50 (P = 0.036) in the group with work experience of more than 15 years which indicates a more positive attitude regarding the DNR order in people with higher work experience.

In terms of work experience based on table 2, the nurses with more than 15 years of experience had more positive attitude in comparison with the other group in three questions: "If CPR is pointless and inappropriate from the viewpoint of therapeutic team, the patient should not be resuscitated.", "Patient whose death is definite and imminent should have a DNR order.", and "Issuance and implementation of DNR order is essential for patients who are in the final stages of their disease." The difference was statistically significant (P < 0.050).

The evaluation of final score of the questionnaires for each gender demonstrated that the average score was 29.56 ± 9.12 in men's group and 30.02 ± 8.33 in women's group (P = 0.796). In terms of experience of participating in resuscitation with a DNR order, 172 participants (67.5%) had positive history. The average score was 29.88 ± 8.32 in the group which had positive history and 30.16 ± 8.56 (P = 0.808) in the group with a negative history. There was not a significant statistical difference between both mentioned groups.

Discussion

The current study investigated the attitudes of nurses in the ICUs of university hospitals of Tabriz University of Medical Sciences towards DNR order. The attitudes of participants to the research questions were negative in most cases and history of participating in resuscitation with a DNR order did not have any effects on their attitudes. According to the results of this study, DNR order was conducted in health centers despite the lack of legal and specific instruction for this order, as 67.0% of participated nurses had the experience of implementing the DNR order. This issue is also confirmed in other studies conducted in Iran[3,8,10] and the need for the presence of a national ethical guide has been emphasized.[9] The results of the current study concerning the attitudes of nurses towards DNR demonstrate that in general nurses did not have positive attitudes towards the DNR order.

Falahi et al. concluded in their study that nurses with an average the final score of questionnaire of DNR of 3.25 and doctors with an average of 3.22 had positive attitudes towards the DNR order.[8] In another study by Emami-Razavi et al., 61.0% of nurses propounded the necessity of the presence of a DNR order.

Table 1. Queries of the questionnaire, the responses of the nurses to the queries, and their scores

Questions	Completely agree [n (%)]	Agree [n (%)]	No idea [n (%)]	Disagree [n (%)]	Completely disagree [n (%)]	Score (mean ± SD)
Issuance and implementation of DNR order is essential for patients with end-stage disease.	71 (27.8)	90 (35.3)	51 (20.0)	29 (11.4)	14 (5.5)	2.32 ± 1.50
DNR orders protect the patients from suffering.	66 (25.9)	97 (38.0)	42 (16.5)	40 (15.7)	10 (3.9)	2.34 ± 1.14
Issuance and implementation of DNR order is morally correct.	43 (16.9)	63 (24.7)	82 (32.2)	48 (18.8)	19 (7.5)	2.75 ± 1.16
Issuance and implementation of DNR order maintains the dignity of the patient.	41 (16.1)	81 (31.8)	73 (28.6)	51 (20.0)	9 (3.5)	2.63 ± 1.08
DNR order helps clarify the treatment plan for patients in the later stages of life.	42 (16.5)	90 (35.3)	75 (29.4)	37 (14.5)	11 (4.3)	2.55 ± 1.06
The CPR should not be initiated if it is vain based on treatment team's idea.	52 (20.4)	94 (36.9)	39 (15.3)	58 (22.7)	12 (4.7)	2.55 ± 0.17
A patient whose death is definite and imminent should have DNR order.	61 (23.9)	86 (33.7)	41 (16.1)	55 (21.6)	12 (4.7)	2.51 ± 1.19
A patient whose death is certain but estimated at 6 months to one year later should have DNR order.	14 (5.5)	39 (15.3)	53 (20.8)	99 (38.8)	50 (19.6)	3.52 ± 1.13
If the CPR for my loved ones is in vain, I would like to order DNR for them.	53 (20.8)	79 (31.0)	64 (25.1)	38 (14.9)	21 (8.2)	2.59 ± 1.19
DNR order is not in conflict with my religious beliefs.	53 (14.5)	68 (26.7)	78 (30.6)	48 (18.8)	24 (9.4)	2.83 ± 1.16
My culture makes me difficult to deal with the non-recovery order.	40 (15.7)	84 (32.9)	76 (29.8)	46 (18.0)	9 (3.5)	3.39 ± 1.06

DNR: Do Not Resuscitate; CPR: Cardiopulmonary resuscitation; SD: Standard deviation

Table 2. Impact of the participants' work experience on their attitudes towards the Do Not Resuscitate (DNR) order

Questions	Work experience (year)	Score (mean ± SD)	P
Issuance and implementation of DNR order is essential for patients with end-stage disease.	≥ 15	2.23 ± 1.11	0.005
	< 15	2.78 ± 1.23	
DNR orders protect the patients from suffering.	≥ 15	2.28 ± 1.11	0.069
	< 15	2.63 ± 1.26	
Issuance and implementation of DNR order is morally correct.	≥ 15	2.70 ± 1.16	0.138
	< 15	3.00 ± 1.14	
Issuance and implementation of DNR order maintains the dignity of the patient.	≥ 15	2.60 ± 1.07	0.263
	< 15	2.80 ± 1.14	
DNR order helps clarify the treatment plan for patients in the later stages of life.	≥ 15	2.52 ± 1.05	0.380
	< 15	2.68 ± 1.13	
The CPR should not be initiated if it is vain based on treatment team's idea.	≥ 15	2.47 ± 1.17	0.023
	< 15	2.93 ± 1.13	
A patient whose death is definite and imminent should have DNR order.	≥ 15	2.43 ± 1.19	0.029
	< 15	2.88 ± 1.17	
A patient whose death is certain but estimated at 6 months to one year later should have DNR order.	≥ 15	3.50 ± 1.16	0.485
	< 15	3.63 ± 0.91	
If the CPR for my loved ones is in vain, I would like to order DNR for them.	≥ 15	2.56 ± 1.18	0.399
	< 15	2.73 ± 1.25	
DNR order is not in conflict with my religious beliefs.	≥ 15	2.84 ± 1.15	0.652
	< 15	2.76 ± 1.22	
My culture makes me difficult to deal with the non-recovery order.	≥ 15	3.34 ± 1.06	0.740
	< 15	3.66 ± 0.99	

DNR: Do Not Resuscitate; CPR: Cardiopulmonary resuscitation; SD: Standard deviation

In this study, 66.0% of participants had the experience of participating in the execution of DNR order particularly in patients with cancer who were at the final stages of life.[11] By investigation of the attitudes of nurses in ICUs regarding life-sustaining treatments (LSTs) in south-east of Iran, Razban et al. concluded that although 77.0% of nurses did not have personal desire to use LST including CPR and mechanical ventilation, they had negative or neutral attitude on the general use of LSTs. This can be representative of their positive attitude towards the DNR order. This study concludes that training Muslim nurses in respect of religious aspects of LST may improve their attitude.[12]

The results of above study were not consistent with our study, as in our study, the experience of participation in resuscitation with a DNR order and the sex of participants did not have any effects on their attitudes. In another study in Iran, which Mogadasian et al. conducted for the investigation of attitudes of Iranian nurses towards the DNR order at Tabriz University of Medical Sciences and Kurdistan University of Medical Sciences, the general attitude of nurses towards DNR was reported negative. The results of this study showed that despite the tendency to obtain more information concerning various aspects of DNR by participants and their positive attitudes towards considering the autonomy of patients, their care providers, and parents in decision-making and implementation of the DNR order, they had negative attitudes towards the DNR verdict in most phrases. Whereas, health care providers have an important role in questioning patients and their care providers about this order.[2]

Considering that all nurses in our study were employed in ICUs and had more ongoing connection with patients who were in more critical conditions, they did not have positive attitudes towards the DNR order when compared with the nurses of other wards. The phrase "Patients whose death is certain and estimated within 6 months to one year should have a DNR order." had the highest average in our study. The underlying disabling diseases, futility of the resuscitation in patients for whom there is no hope for recovery, and accepting the role of death in the comfort of these patients and their families are the factors in construction of positive attitudes towards DNR among medical staff. This is also confirmed in other studies.[3,10]

Although numerous studies regarding DNR have been conducted in different places of the world, doctors and medical staff still face challenges on this subject.[9] In most cases, the implementation of the DNR order is carried out in an informal and oral manner. The presence of underlying disabling diseases, inappropriate cardiac condition before recent cardiac arrest, improper prognosis of the underlying disease, and asystole for more than 20 minutes are the main contributing factors for implementation of this order.[3] Considering that the religiosity of doctors affects their approaches to regarding end-of-life cares, a study was carried out for investigation of the beliefs about the end-of-life cares among Muslim physicians in the United States (US) and other countries. The result of this survey revealed that the viewpoint of Muslim physicians on the issues of end-of-life cares was highly affected by religious beliefs, country of origin, country of practice, and previous experience regarding the soothing cares in final days of life.[13]

In the studies performed in Islamic countries, it was found that religion affects the decision-making of medical staff about the DNR order which shows the necessity of presence of a single and specific instruction about this order.[14-16] The study about Islamic view on the DNR order by Saiyad stated that we should seek treatment in life-threatening conditions and the treatment would become optional when the benefits of therapy are doubted and it is not recommended to continue the treatment if it is futile. On the other hand, Muslim patients have been encouraged to have a testament in order to make decisions regarding the continuation of their treatment process in particular

conditions in which they are not able to express their desires. However, they are inhibited from including the DNR order which is more general and covers all conditions. In other words, if there is a reasonable chance for return and recovery, the resuscitation should be done for them.[17]

One of the limitations of our study is the study design which was carried out in one province only and its results cannot be generalized to the whole country and it was carried out only in one group of medical staff (nurses of ICUs). Moreover, the knowledge of people concerning the DNR order has not been investigated.

Conclusion

The attitudes of ICU nurses towards the DNR order were investigated in our study; the general attitudes of people were negative about this subject. The history of participating in resuscitation with a DNR order and the sex of the participants did not have any effects on the attitudes of the participants in the study. In terms of impact of experience on the attitudes of people, significant difference was observed between the two groups; the attitudes of people with more work experience was positive and there is a need for further investigation of this subject in the future studies.

The highest score of participants was in respect to the phrase "A patient whose death is certain but it is estimated to be within 6 months to one year, should have a DNR order." This result can be explained by the career of the participants who were involved in the treatment of patients with unstable and more critical conditions. Nevertheless, according to the result of the current study and the response to the phrase "My culture causes problem in facing with the DNR order", the culture of people affects their attitude.

Acknowledgments

The authors are grateful to all health personnel and patients who participated in the study, in addition to the data collectors, supervisors, and administrative staff of the ICUs of Tabriz University of Medical Sciences. This article was written based on dataset of Shima Naghshbandi's medical degree thesis entitled "Attitude of nurses in intensive care units of hospitals of Tabriz University of Medical Sciences towards Do Not Resuscitate order". This study was approved in Islamic Azad University, Tabriz Branch.

Authors' Contribution

All authors have read and approved the manuscript. Zahra Parsian and Shima Naghshbandi conducted data collection, literature review, and drafting of the manuscript; Farzad Rahmani and Shiva Salmasi undertook the major parts of the study design and performed the statistical analysis and data interpretation.

Funding

This article is not supported by any funding organization. There is no sponsor for this work.

Conflict of Interest

Authors have no conflict of interest.

Ethical Approval

This study was approved by Research and Ethics Committee of Islamic Azad University, Tabriz Branch. There was no ethical issue in our study.

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