Original Article

The Concept of Do Not Resuscitate for Students in King Abdulaziz University Hospital

Bashaer Abdulrahim Alsaati, Maram Nader Aljishi, Sunds Salah Alshamakh, Nujood Salah Banjar, Hadeel Ahmed Basharaheel, Rawan Saleh Alamri

Department of Medical Students, Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia

Abstract

Introduction: Do not resuscitate (DNR) is a medical procedure for patients who are suffering from critical, untreatable, and irreversible disease where the patient's life is predicted to end. DNR is considered a sensitive decision for patients and their relatives, as well as physicians. **Aim:** This study is aimed to assess the knowledge and attitude of medical students and interns toward the DNR order and the factors affecting their attitude at the King Abdulaziz University Hospital (KAUH) in Jeddah. **Methods:** Nonintervention cross-sectional study was conducted among 429 medical students (preclinical and clinical years) and interns who were given an online questionnaire between May and June in 2016 at KAUH in 18 Kingdom of Saudi Arabia. **Results:** Our study indicates that most of the participants (73.2%) were familiar with DNR order; however, more than half of them (58.3%) did not take any lecture or session on DNR. Large proportion of medical students had the opinion that attending a lecture or session on DNR would help them discuss it more skillfully with the patients and their relatives. More than half of the participants (55%) believed that there is a Fatwa that regulates DNR on the Islamic level. **Conclusion:** Participants, who were interns, were more familiar with the term DNR, whereas the 2nd-year medical students were less familiar with DNR. Considering the variation in the knowledge of participants about DNR, we conclude that additional lectures and sessions about DNR should be added to the medical school curriculum to make the students more confident and able in handling the DNR discussions.

Keywords: Critical care, do not resuscitate, interns, medical students, patient

Introduction

Cardiopulmonary resuscitation (CPR) is a medical intervention procedure that warrants the use of artificial ventilation and chest compression.[1] CPR allows the circulation of oxygenated blood to the vital organs. However, CPR does not succeed in all cases. Health-care practitioners are taught to perform CPR as a lifesaving procedure in cases of respiratory or cardiac arrest. However, in certain cases, the patient's condition might not be suitable for such a procedure. In such circumstances where the patient is suffering from an untreatable disease where death of the patient is imminent, do-not-resuscitate (DNR) decision has to be taken by the patient and his/her family members, and it closely involves the physician tool.[2,3]

There are different terms that are included for end-of-life care such as do not attempt resuscitation, no code, or palliative care. Until now, there have been a lot of discussions about end-of-life care decisions around the world, according to the differences in cultures and traditions of the place.[1,4] Many studies have discussed the DNR decisions that are based on multiple factors that play an important role in decision-making process such as ethical concerns, legal issues, and patient's and relative's preferences, which also take into account the patient's condition.[5,6]

Usually, DNR decisions are ordered by the physicians, but a study in Denmark suggested that the physicians and the patients should make the final decisions together.[7] In Saudi Arabia, there is Islamic Fatwa which is considered to be an essential part decision-making process because different systems and the authorities in Saudi Arabia follow the Islamic law. The Islamic opinion on DNR was published in 1988.[8] It states that "If three knowledgeable physicians approve that the patient's condition is desperate, it is not a must to offer cardiac and

Access this article online

Quick Response Code:

Website: www.jpalliativecare.com

DOI: 10.4103/IJPC.IJPC_78_19

Address for correspondence: Dr. Bashaer Abdulrahim Alsaati, Department of Medical Students, Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia.
E-mail: bashayer.alsaati@hotmail.com

How to cite this article: Alsaati BA, Aljishi MN, Alshamakh SS, Banjar NS, Basharaheel HA, Alamri RS. The concept of do not resuscitate for students in King Abdulaziz University Hospital. Indian J Palliat Care 2019;25:544-9.

respiratory support. The patient's relatives are involved in the discussion of DNR. However, the decision-making of DNR is purely a medical decision as the patients and their relatives are unprepared to make such decisions."[8]

Recently, DNR orders have been discussed in many countries. In Saudi Arabia, DNR is not a common decision, and there is a lack of studies that address this concept among the medical students and interns.

The aim of this study is to assess the knowledge and attitude of medical students and interns toward DNR order and to understand the important factors affecting their attitudes at King Abdulaziz University Hospital (KAUH) in Jeddah.

Materials and Methods

This study was approved by the ethical committee of KAUH and was performed using a nonintervention cross-sectional study at KAUH in Jeddah, Kingdom of Saudi Arabia, between May and June of 2016.

The sample size in this study included 429 participants, who involved medical students (preclinical years and clinical years) and interns at KAUH. Male and female participants were distributed equally, of which 215 were male whereas 214 were female.

Data were collected using an online modified questionnaire.[1] Statistical analysis was carried out by SPSS software package to estimate the knowledge of medical students and interns about DNR order and to determine their religious views about the same and whether they knew about the Islamic vision regarding the DNR order. We also tried to assess the attitude of medical students and interns toward DNR order and the factors affecting their attitude.

The knowledge of medical students and interns about DNR order and the factors affecting their attitude was compared and estimated with data obtained from a previous study about the DNR order.[1] This study presented a percentage of qualitative variables. The differentiation in the understanding the DNR order and the factors affecting the attitude of medical students and interns was assessed using Chi-square test. $P < 0.05$ was considered as a statistically significant.

Results

In this study, we aimed to assess DNR knowledge of medical students and interns, and several factors affect their attitude at King Abdulaziz University in Jeddah, Saudi Arabia. Major points were covered to understand their opinion over DNR. Online questionnaires were sent to the target groups of 429 students and their views on the questionnaire were submitted. The age of participants ranged from 20 to 25 years, and the participants were divided according to their medical year and gender [Tables 1 and 2].

Most of the participants were familiar with DNR order, and the lectures given in the medical schools regarding DNR were the primary source of information. However, it was also evident that more than half of the students did not take attend any lecture or session regarding DNR [Table 3]. The greatest proportion of medical students thought that if they had a lecture or session in DNR, they would be able to discuss the DNR order in a better way with patients and their relatives [Table 4]. The

Table 1: Student list

Medical (year)	Frequency, *n* (%)
2nd	67 (15.6)
3rd	61 (14.2)
4th	78 (18.2)
5th	76 (17.7)
6th	58 (13.5)
Interns	89 (20.7)

Table 2: Student's gender

Gender	Frequency, *n*(%)
Males	215 (50.1)
Females	214 (49.9)

Table 3: Student's familiarity to do not resuscitate and their source of information

Regarding DNR familiarity and information source	*n* (%)
Are you familiar with the term DNR?	
Yes	314 (73.2)
No	115 (26.8)
Have you ever had a formal lecture or other session on obtaining DNR orders?	
Yes	179 (41.7)
Medical school	133 (31)
Social media and internet	27 (6.3)
Newspaper and books	3 (0.7)
Heard from a friend and family member	16 (3.7)
No, I had not	250 (58.3)

DNR: Do not resuscitate

Table 4: Student's concern about do-not-resuscitate lecture efficacy in do-not-resuscitate discussion and their awareness about do-not-resuscitate policy at (King Abdulaziz University Hospital)

Regarding DNR discussion and awareness	*n* (%)
Do you think if you take a lecture or session in DNR, you will be able to discuss DNR order with patients or patient's family?	
Yes	190 (44.3)
No	48 (11.2)
Maybe	191 (44.5)
Are you aware if there is DNR policy in your hospital?	
Yes	120 (28)
No	22 (5.1)
Maybe	287 (66.9)

DNR: Do not resuscitate

majority of participants were not sure if there is a clear policy concerning DNR policy at KAUH [Table 4]. They considered the lack of DNR understanding in patients and their families about DNR as one of the most important barriers that impede an effective DNR discussion [Table 5].

Participants believe that patient's dignity, religious and legal concerns, risk of vegetative state, limited intensive care unit (ICU) space, efficient use of medical resources, and cost reduction classify as important factors while making the DNR decision [Table 6]. Regarding the inclusion of patients in DNR decisions, the majority of participants strongly agree that patients should be involved in decisions regarding their DNR status [Table 7]. Furthermore, they have the right to reject or request (advanced directive) their DNR status. Therefore, the hospital policies should include patient as a decision-maker. Moreover, most of the participants disagreed that the patients are not aware of their DNR status [Table 7].

Table 5: Student's opinion about do-not-resuscitate discussion barriers

Regarding DNR discussion barriers	*N* (%)
Do you think there are barriers to effective DNR discussions with patient and family?	
Yes, there are barriers	385 (89.7)
Lack of time	14 (3.3)
Inadequate training	116 (27)
Lack of patient or family understanding	255 (59.4)
No, there are no barriers	44 (10.3)

DNR: Do not resuscitate

Once the patient decides to choose DNR (DNR patient), the majority of participants believed that they have to be generous with analgesia in DNR patients, but favored withdrawing life-sustaining treatment, and also agreed in limiting the management of DNR patients. However, they disagreed about limiting the daily rounds to DNR patients [Table 8]. The majority of participants encourage organ donation discussion with DNR patients or their family members. More than half of the participants were of the opinion that we require a unified national DNR policy [Table 9].

More than half of the participants also believe that there is a Fatwa that regulates DNR on the Islamic level, and it states that more than one trusted doctors should decide the DNR decision [Table 10].

Participants, who are interns, were more familiar with the term DNR, and the 2nd-year medical students were less familiar ($P < 0.01$). With the progression through medical years, more participants thought that if they take a lecture or session in DNR, they will be able to discuss the DNR decision with the patient or patient's family ($P = 0.004$). Besides, there was a significant association between the participant's gender and their concern about Fatwa and regarding the person who takes the DNR decision. The majority of both the genders selected more than one trusted doctors. However, the variation was observed in the participants who did not have enough knowledge about the Fatwa. More males, who did not know about the Fatwa, selected that the patient's family should decide DNR decision whereas it was observed that the females were not aware of the Fatwa pertaining to the DNR ($P = 0.002$).

Table 6: Student's concern over religions and legal concerns

Regarding factors that are considered in making DNR decisions	Very important, *n* (%)	Important, *n* (%)	Slightly important, *n* (%)	Not important, *n* (%)	Not at all important, *n* (%)
Patient dignity	225 (52.4)	116 (27)	63 (14.7)	15 (3.5)	10 (2.3)
Religious concerns	250 (58.3)	113 (26.3)	39 (9.1)	21 (4.9)	6 (1.4)
Legal concerns	269 (62.7)	113 (26.3)	37 (8.6)	8 (1.9)	2 (0.5)
Risk of vegetative	187 (43.6)	152 (35.4)	73 (17)	15 (3.5)	2 (0.5)
Limited ICU space	117 (27.3)	97 (22.6)	104 (24.2)	67 (15.6)	44 (10.3)
Efficient use of medical resources and cost reduction	122 (28.4)	122 (28.4)	100 (23.3)	51 (11.9)	34 (7.9)

ICU: Intensive care units, DNR: Do not resuscitate

Table 7: Student's concern about patient inclusion in do-not-resuscitate decisions

Regarding the inclusion of patients in DNR decisions	Strongly agree, *n* (%)	Agree, *n* (%)	Natural, *n* (%)	Disagree, *n* (%)	Strongly disagree, *n* (%)
Patients should be involved in decisions regarding their DNR status	221 (51.5)	102 (23.8)	68 (15.9)	31 (7.2)	7 (1.6)
Policies should include patient as a decision-maker	175 (40.8)	116 (27)	81 (18.9)	49 (11.4)	8 (1.9)
Patients have the right to reject or request (advanced directive) their DNR status	190 (44.3)	113 (26.3)	83 (19.3)	34 (7.9)	9 (2.1)
It is best that patients are not made aware of their DNR status	60 (14)	77 (17.9)	77 (17.9)	95 (22.1)	120 (28)

DNR: Do not resuscitate

Table 8: Student's concern about do-not-resuscitate patient care

	Strongly agree, *n* (%)	Agree, *n* (%)	Natural, *n* (%)	Disagree, *n* (%)	Strongly disagree, *n* (%)
Being generous with analgesia in DNR patients, despite the risk of complication	100 (23.3)	131 (30.5)	95 (22.1)	83 (19.7)	20 (4.7)
Withdraw life-sustaining treatment from a DNR patient	61 (14.2)	118 (27.5)	115 (26.8)	82 (19.1)	53 (12.4)
Limiting the management in DNR patient	63 (14.7)	100 (23.3)	94 (21.9)	99 (23.1)	73 (17)
Limiting the daily round in DNR patient	58 (13.5)	76 (17.7)	94 (21.9)	94 (21.9)	107 (24.9)

DNR: Do not resuscitate

Table 9: Student's concern about organ donation among do-not-resuscitate patients and their opinion about needing a national do-not-resuscitate policy

	Strongly agree, *n* (%)	Agree, *n* (%)	Natural, *n* (%)	Disagree, *n* (%)	Strongly disagree, *n* (%)
The discussion of organ donation with DNR patient/family	231 (53.8)	137 (31.9)	43 (10)	16 (3.7)	2 (0.5)
Do you think unified national DNR policy is needed?	185 (43.1)	126 (29.4)	69 (16.1)	37 (8.6)	12 (2.8)

DNR: Do not resuscitate

Table 10: Students' thoughts about do-not-resuscitate Fatwa existence

Concerns on DNR fatwa	*n* (%)
Does a Fatwa exist that regulates DNR on national level? If yes, who should ultimately decide a DNR decision?	
Yes	357 (83.2)
Patient's family	54 (12.6)
One trusted doctor	16 (3.7)
More than one trusted doctors	236 (55)
Any health-care provider	10 (2.3)
The patient	41 (9.6)
No, there are no barriers	72 (16.8)

DNR: Do not resuscitate

Discussion

The attitude and knowledge of medical students and interns toward the DNR decisions is an important aspect in critical medical care, and in the present study, we have performed an in-depth analysis to understand the same at the KAUH in Jeddah, Saudi Arabia.

The extent of knowledge and experience regarding medical issues and orders varies among medical students and interns. In our study, it was evident that more than half of the participants were familiar with DNR order although majority of them did not take any lecture or session regarding DNR. It was interesting to note that the interns were more familiar with the term DNR than the 2nd-year medical students. A previous study performed in Saudi Arabia in 2016 concurs with our results as it highlights that more than half of the participants (interns and residents) were familiar with DNR term; the residents were more familiar with DNR than the interns because of their greater medical experience.[1] We believe that when the students progress in years of their training, they get more information which in turn guides them in handling sensitive medical issues and orders. Familiarity with the DNR order is considered as an important asset when faced with the DNR decisions.[3]

Residents can feel a certain discomfort during the discussing on DNR orders. It is primarily due to the sensitivity and difficulty surrounding the DNR discussion and the lack of information given by the health-care provider. In our study, we found that with progression through the medical years, more participants believed that by taking a lecture or session in DNR, they will be able to effectively discuss the DNR decision with the patients and their relatives. Another study originating from Saudi Arabia in 2015 supports our findings by highlighting the importance of giving additional lectures and training to residents in improving the quality of patient–doctor conversation and also makes the medical professionals more informed and confident about DNR decisions. This highlights the gap in teaching the skills related to end-of-life care orders such as DNR.[2] Another study in the USA found that most of their residents thought that more training in handling DNR discussions would improve their skills to discuss DNR orders with patients and their relatives.[5,4]

Many countries do not follow a clear policy regarding DNR orders.[6] Therefore, DNR order practice varies from hospital to hospital due to the existence of different policies in each country. In our study, the majority of participants were not sure if there is a clear policy regarding DNR at KAUH. It results in variation in DNR ordering and discussion process which then depends on the background and approach of an individual toward DNR. A study in the United Arab Emirates found that most of their participants (physicians) were not informed about their hospital DNR policy.[7] A study in Saudi Arabia indicated

that most of the participants were not sure about existence of a DNR policy in their hospitals.[1] Therefore, each hospital should have a clear DNR policy to help and guide physicians in their medical practice.[8]

DNR discussions may become ineffective and difficult due to the presence of many barriers such as lack of patient understanding, lack of skills in handling the conversations relating to DNR, and inadequate time. In our study, we observed that the lack of understanding in patients and their relatives regarding DNR is the most important barrier that impedes an effective DNR discussion. It was not surprising as a study based in New York showed that the DNR misunderstanding is a significant barrier in DNR discussion with the patients and their relatives.[9] Residents face many barriers during their DNR discussions.[4] A study in the United Kingdom indicated that a lack of training is a significant barrier in making DNR decisions. They thought that by having a clear DNR policy, good physician training and improvement in patient's understanding about DNR may contribute in improving DNR discussions.[10]

Different factors are taken into consideration when making a DNR decision. In our study, most of the participants believe that patient dignity, religious and legal concerns, risk of vegetative state, limited ICU space, efficient use of medical resources, and cost reduction classify as important factors when making the DNR decision. A study originating from Saudi Arabia in 2016 found that interns and residents considered patient's dignity and religious and legal concerns as important factors, whereas the risk of vegetative state was considered as an unimportant factor.[1] A study from the United Arab Emirates considered religion as an important factor which played an important role in DNR decision. They also considered limited ICU space as an unimportant factor.[7] Furthermore, a study in Hong Kong indicated the patient's age as an important factor to be considered in DNR decision-making. Most of their participants did not give any consideration to the cost of treatment in the DNR decision.[3] A study in Iran in 2013 considered patient's situation, time inadequacy, religious background, patients' and their family's response, and the availability of hospital beds as significant factors when making a DNR decision.[11]

Patient inclusion in DNR decisions depends on the physician perspective and hospital policies. In our study, the majority of participants strongly agree that the patients should be involved in decisions regarding their DNR status. Furthermore, the participants believed that the patients have the right to reject or request their DNR; therefore, policies should include patient as a decision-maker. Moreover, most of the participants strongly disagree that the patients should not be aware of their DNR status. In a previous study from Saudi Arabia in 2016, when asked about patient inclusion in DNR decision-making, the majority of the participants agreed with patient's involvement. Furthermore, they thought that the patients should be made aware about their DNR status.[1] This highlights the importance of patient's autonomy. All these results are similar to a study on interns and residents in Iran and a study on oncology and palliative care physicians and nurses in Singapore where the majority of the participants thought that the patient's liberty is essential in DNR decision-making, which also agrees with the findings of our study.[11,12] The study in Hong Kong found that most of the participants thought that the first priority in DNR decision-making is the patient's wish, then the family's wishes, and finally, the social status of the patient.[3] The study in the United Arab Emirates argued with our findings by showing that medical decisions depend on the physician rather than on patient's and family's wishes.[7] Therefore, according to our study and the previous studies, patient's wishes are an important factor in DNR decision-making, but in medical practice, most of the times the doctor is the main person who decides the DNR order.[11]

DNR patient's management differs in every hospital depending on the physician's approach and the hospital policies. In our study, the majority of participants believed that they must be generous with analgesia in DNR patients, supported the withdrawal of life-sustaining treatment, and also supported the limiting of the management of DNR patients. However, they disagreed with the limiting of daily rounds to DNR patients. Our team concluded that the participants would want to continue daily rounds for DNR patients to give the patient's family an appropriate psychological support and also demonstrate that the patient life is important to them whatever may be the patient's situation is. A previous study in the USA reported that the medical management and additional therapies which may prolong the patient's life should be limited.[13] Withholding of the medical therapy is now accepted around the world.[14] The study in Saudi Arabia found that the majority of participants disagree the withdrawal of life-sustaining treatments. However, they agreed being generous with analgesia in DNR patients. They also agreed with limiting the daily rounds on DNR patients.[1]

Organ donation, an important aspect in the global health care, should be encouraged in all societies. In our study, the majority of participants encourage organ donation discussion with DNR patient/family. A previous study in Saudi Arabia approved our findings by reporting that the majority of their participants (interns and residents) would encourage the organ donation discussion with DNR-labeled patients/families, which also reflects the importance of organ donation and its benefit in our culture.[1]

In Saudi Arabia, the systems and authorities follow the Islamic law. The Islamic opinion on DNR that was published in 1988[15] states that "If three knowledgeable physicians approve that the patient's condition is desperate, it is not a must to offer cardiac and respiratory support. The patient's relatives are involved in the discussion of DNR. However, the decision-making of DNR is purely a medical decision as the patients and their relatives are unprepared to make such decisions."[8] In our study, more than half of the participants believed that there is a Fatwa that regulates DNR on the Islamic level. We found a

significant association between the participant's gender and their concern about Fatwa and the doctor who decides on the DNR order. Majority of both the genders selected more than one trusted doctors; however, the variation was observed in participants who did not have enough knowledge about the Fatwa. More number of male participants, who did not know about the Fatwa, selected the patient's family as the main DNR decision-makers whereas the female participants were of the opinion that there is no Fatwa on DNR. However, a study in Hong Kong argued that gender did not have much influence on the choice of DNR decision.[3]

Conclusion

This study was aimed to assess the medical students and interns' knowledge and attitude toward DNR order and the factors affecting their attitudes at King Abdulaziz University in Jeddah. Our study findings indicated that most of the participants were familiar with DNR order; the majority of participants were not sure if there is a clear policy concerning DNR at KAUH. More than half of the participants believed that there is a Fatwa that regulates DNR on the Islamic level. However, more than half of them did not take any lecture or session regarding this term. The greatest proportion of medical students thought that if they attend a lecture or session in DNR, they would be able to discuss it skillfully with patients and their relatives. Participants, who are interns, were more familiar with the term DNR, and medical students in the 2nd year were less familiar. According to this variation in their knowledge about DNR, we think that KAUH medical system should add lectures and sessions about DNR to make the students more confident and able to handle DNR discussions.

Acknowledgments

We thank all medical students and interns for helping us in our questionnaire.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Amoudi AS, Albar MH, Bokhari AM, Yahya SH, Merdad AA. Perspectives of interns and residents toward do-not-resuscitate policies in Saudi Arabia. Adv Med Educ Pract 2016;7:165-70.
2. Aljohaney A, Bawazir Y. Internal medicine residents' perspectives and practice about do not resuscitate orders: Survey analysis in the Western region of Saudi Arabia. Adv Med Educ Pract 2015;6:393-8.
3. Sham CO, Cheng YW, Ho KW, Lai PH, Lo LW, Wan HL, *et al.* Do-not-resuscitate decision: The attitudes of medical and non-medical students. J Med Ethics 2007;33:261-5.
4. Siddiqui MF, Holley JL. Residents' practices and perceptions about do not resuscitate orders and pronouncing death: An opportunity for clinical training. Am J Hosp Palliat Care 2011;28:94-7.
5. Deep KS, Green SF, Griffith CH, Wilson JF. Medical residents' perspectives on discussions of advanced directives: Can prior experience affect how they approach patients? J Palliat Med 2007;10:712-20.
6. Takrouri M, Halwani T. An islamic medical and legal prospective of do not resuscitate order in critical care medicine. Internet J Health 2007;7:1-7.
7. ur Rahman M, Abuhasna S, Abu-Zidan FM. Care of terminally-ill patients: An opinion survey among critical care healthcare providers in the Middle East. Afr Health Sci 2013;13:893-8.
8. Khalaileh MA. Jordanian critical care nurses' attitudes toward and experiences of do not resuscitate orders. Int J Palliat Nurs 2014;20:403-8.
9. Morrison RS, Morrison EW, Glickman DF. Physician reluctance to discuss advance directives. An empiric investigation of potential barriers. Arch Intern Med 1994;154:2311-8.
10. Cohn S, Fritz ZB, Frankau JM, Laroche CM, Fuld JP. Do not attempt cardiopulmonary resuscitation orders in acute medical settings: A qualitative study. QJM 2013;106:165-77.
11. Ghajarzadeh M, Habibi R, Amini N, Norouzi-Javidan A, Emami-Razavi SH. Perspectives of Iranian medical students about do-not-resuscitate orders. Maedica (Buchar) 2013;8:261-4.
12. Yang GM, Kwee AK, Krishna L. Should patients and family be involved in "Do not resuscitate" decisions? Views of oncology and palliative care doctors and nurses. Indian J Palliat Care 2012;18:52-8.
13. Hedayat KM, Pirzadeh R. Issues in islamic biomedical ethics: A primer for the pediatrician. Pediatrics 2001;108:965-71.
14. Vincent JL. Forgoing life support in Western European intensive care units: The results of an ethical questionnaire. Crit Care Med 1999;27:1626-33.
15. Fatwas S. The General Presidency of Scholarly Research and Ifta. Riyadh: Kingdom of Saudi Arabia. Fatwa 12086, Part 25. p. 81-2.