The Decision not to Resuscitate Order for Children and Related Ethical Issues from Students' Perspective

sawsan abuhammad (Shabuhammad@just.edu.jo)
Jordan University of Science and Technology https://orcid.org/0000-0001-5817-8950
Suhiab Mufleh
Jordan University of Science and Technology
Karem H Alzoubi
Jordan University of Science and Technology

Research article

Keywords: DNR, CPR, Nursing students, PharmD, Children

Posted Date: July 29th, 2020

DOI: https://doi.org/10.21203/rs.3.rs-45481/v1

Abstract

Background : Nurses and PharmD have communicated the for elaborate and properly documented DNR orders for terminally ill children and informed child with terminally ill diseases and relatives to offer excellent care attention, such as more family support, assisting the child with terminally ill disease in passing on peacefully, and preventing unnecessary CPR This research aimed to survey attitudes of nursing and PharmD (PharmD) undergraduate students about the “do not resuscitate” order for children with terminally ill diseases.

Method: Across-sectional correlational design was used. More than 400 nursing and PharmD students were recruited in this study. All nursing and doctors of pharmacy undergraduate students were E-mailed information regarding the study, including the web survey link.

Results: Approximately 60% of the nursing and PharmD students would disclose the need for the do not resuscitate order for children with terminally ill diseases. The results showed that there was a significant difference in perception toward DNR order between nursing and PharmD. PharmD students had more positive attitude toward DNR than nursing students.

Conclusion: The results of this study showed that all demographic variables not associated with the perception toward DNR orders (p value > 0.05). This study shows that Jordanian nursing and PharmD students are willing to learn more about different aspects of DNR orders for terminally ill children and analyzing their responses to many items showed their misconception about DNR orders for terminally ill children.

Background

There are frequent do not resuscitate (DNR) decisions in the circumstances involving end of life; that is choosing not to trigger the heart in the event of a heart attack. DNR decisions are made when a child with terminally ill disease refuses resuscitation, poor diagnosis, or if it is evident that the child with terminally ill disease will not survive cardiopulmonary resuscitation (CPR) with better life quality [1,2]. WHO defines the quality of life as the subjective perception of how and where an individual resides, associated objectives, anticipations, quality, and concerns [2]. Orders of DNR entails avoiding basic CPR, compressing the chest combined with or without concurrent ventilation, and exceptional CPR that involves defibrillation and medication [3].

According to western regulations, if there is no DNR order for a child with terminally ill disease, CPR must commence within 60 seconds, and defibrillation within three minutes [3]. Provisions of western laws dictate that child with terminally ill disease DNR's decision lies with the responsible doctor [4]. After discussing with other qualified experts (other providers of healthcare like physicians, nurses and doctors of pharmacy), the decision should be made after consulting the child with terminally ill disease. However, the physician usually makes the final decision [4, 5].

The child with terminally ill disease Act gives a child with terminally ill disease more privilege to be involved in his/her care and the right of information [5]. If the children with terminally ill disease and their families cannot receive the information, a relative should receive the news [5]. The DNR decisions should be recorded in the medical records of the child with terminally ill disease, including information regarding why the resolution was arrived at and who participated in the decision making.

Additionally, there should be documentation of the details on whether or not the children with terminally ill disease and their families were consulted before the decision, modes of conveying the decision to the child with terminally ill disease and relatives, and the attitude they expressed regarding the decision [4]. The first description of DNR was at the beginning of the 1970s. In 1974, the Medical Association in America suggested that the decision should be recorded in the medical records of the child with terminally ill disease, while medical staff members who care for the child with terminally ill disease be informed [6]. Based on studies, DNR orders for terminally ill children can be ambiguous [7, 8], and that there can be inconsistent and varying DNR documentation [7, 9, 10]. Besides, results indicate that there are often late DNR decisions while caring for child with terminally ill diseases [11–13].

Lack of proper documentation predisposes child with terminally ill diseases to unnecessary CPR [15, 16]. Reviews of nurses, doctors of pharmacy, and other healthcare providers have revealed that representatives of these occupations may approach DNR decisions differently. Although the decision lies with the other providers of healthcare with extensive medical understanding, nurses and PharmD who spend a lot of time with the sick, offering bedside nursing and medical attention within several hours of their duty shift and, therefore, frequently start discussing DNR [7, 17, 18]. Besides, nurses and PharmD have communicated the for elaborate and properly documented DNR orders for terminally ill children and informed child with terminally ill diseases and relatives to offer excellent care attention, such as more family support, assisting the child with terminally ill disease in passing on peacefully, and preventing unnecessary CPR [7, 15].

According to Pfeil et al., healthcare providers could play an active role by conveying the DNR decisions to each child with terminally ill disease, or a passive duty where they wait for the child with terminally ill disease to start discussing DNR. Generally, DNR's process can be complicated, involving future nurses, doctors of pharmacy, and other healthcare providers with varying backgrounds and approaches. Future healthcare staff may have different DNR perspectives from outsiders in the field of health. The attitudes of an individual towards DNR decisions may have changed due to medical training, particularly clinical education.

Exploring the attitudes of future nurses and PharmD regarding whether or not to opt for a DNR will be worthwhile since it may indicate the impact of their education. Besides, it is helpful to explore the varying attitudes between nursing and PharmD students, since it may reveal the impact of clinical contact on their opinions. Noting any difference in attitudes between undergraduate students in the healthcare field during DNR decisions would be helpful. Therefore, this study aims aimed to survey attitudes of nursing and PharmD undergraduate students about do not resuscitate order for children with terminally ill diseases and whether differences in attitudes existed between nursing and PharmD students.

Method

The descriptive correlational study, utilizing an online survey as a beginning point, was conducted. A total of 800 nursing and PharmD undergraduate students were contacted, and flyer sent to them to participate in the study. Information regarding the background and objectives of this study were sent to the prospective respondents. This information had a web survey link. Since the web survey was undisclosed, all potential respondents were reminded at least twice. First, the researcher gave brief details regarding the study and which project the study constitutes. Online surveys were disseminated to undergraduate students who preferred this manner of completing the survey. Data collection began in April 2020 and closed in June 2020.

Two hundred sixty-two nursing students and 160 doctors of pharmacy students were participated and filled the web survey. The total number who participated in the study was 402 undergraduate students. Data collection began in April 2020 and closed in June 2020.

Data Collection

The web survey included two sections: first, undergraduate students were requested to complete background information (see Table 1). The second part was based on a tool about DNR developed by Dunn (2000). This tool consisted of 25 statements (items), which were scored based on a five-point Likert scale. Likert scale from 1 (not significant/probable) to 5(very substantial/likely) was used. This tool was subdivided into three categories: overall perception, expertise, and personal opinions about the issue of DNR. It was acquired from comparable research of nurses 'perception toward DNR order in Saudi Arabia; a Cronbach alpha of 0.82 confirmed the accuracy and suitability of this questionnaire for use in the current study context (Alfallahi, 2018).

Data Analysis

Social Sciences [SPSS], version 24 (S1 File), was used to conduct data analysis. Numbers, percentages, measures of central tendency, and ranges were used to represent descriptive data. Multiple regressions test was conducted to determine the predictors of attitude toward DNR in nursing and PharmD students.

Ethical Consideration

An ethical approval was given from Jordan University of Science and Technology IRB (2020243). The research was carried out while adhering to the national and international empirical research guidelines and regulations. All nursing and doctors of pharmacy undergraduate students were E-mailed information regarding the study, including the web survey link. Respondents agreed that the findings be published in a scientific journal when they responded to the survey. The survey did not ask questions deemed sensitive or inappropriate. Significance and probability results- Elements of the process of DNR decision, table 2 show the undergraduate students' responses regarding DNR.

Results

Demographic Characteristics

Total of 402 nursing and PharmD students participated in the study include 242 nursing students and 160 doctors of pharmacy students. Students from both gender participated in this study male 90 (22.4%) and female 312 (77.6%). Demographic characteristics of the study participants are shown in Table 1.

Perceptions toward DNR amongNursing and PharmD Students

Attitude toward DNR among nursing and doctor of nursing students was satisfactory (M= 69.9, SD=10.3). Many students respond to the following question correctly "DNR orders for terminally ill children help keep patients from suffering unnecessarily (M=3.99, SD=5.7) and " The patient or the patient's family must give written permission in orders for the physician to initiate DNR orders for terminally ill children. (M=3.97, SD=1.6). Many students answered I would like to know more about patient's rights. (M= 2.31, SD= 1.54) If my child was end-

stage terminally ill, my religious beliefs greatly influence my view of DNR (2.63, SD= 1.12).Table 2 shows the responses to perception toward DNR order with child with terminally ill disease

Differences between nurses and PharmD Students regarding DNR

T-test was used to compare attitude toward DNR between nursing and PharmD students. For nursing students' DNR score (M= 84,15 , SD=12.8) and for PharmD students 'DNR scores were M=85.19, SD= 18.6. Thus, a significant difference in perception toward DNR order between nursing and PharmD students (t=-1.3, p=.013) was detected.

Multiple regression analysis

Multiple regressions were used to predict nurses' knowledge of barriers to participation in research according to demographic variables (age, gender, education level, work experience, and job role). Table 3 summarizes the outcomes of the multiple regression tests. All of the listed factors are not associated with the perception toward DNR orders (p value > 0.05) except prevention reasons for doing DNR (t=-2.180, p=.030).

Discussion

This study is the first to investigate the attitude of Jordanian nursing and PharmD students toward DNR orders for terminally ill children. The findings indicate that, despite favorable perspectives on a few elements, Jordanian nursing and PharmD students retain a pessimistic attitude for "DNR orders for terminally ill children" in various important elements on the "attitude on the DNR" survey. In a systematic literature review study, only a few studies have investigated the perspectives of students regarding 'DNR orders for terminally ill children or adult. In a study, Al- Mobeireek revealed, recommendation of DNR for healthy adult patients were made by just 16% of Saudi physicians. [23] Another study by Iyilikci found that 66% of anesthesiologists in turkey had ordered written/oral 'DNR orders for terminally ill children.' [24] Further research performed by Varon in Singapore observed some misconception regarding 'DNR orders for terminally ill children' in healthcare service providers. [25] These findings show that the DNR implementation differs based on the Muslim healthcare service providers from one country to another.

Moreover, the response of children show that many students answered I would like to know more about patient's rights and their religious beliefs greatly influence their attitude toward DNR (2.63, SD= 1.12). Our literature, show no prior studies investigating the perception toward DNR orders for terminally ill children in Jordanian nursing and PharmD students. It's noteworthy, in few studies, medical students and nurses [26,27] attitude on euthanasia were analyzed. In Moghadas [26] and Rastegari-Najafabadi [27] found that almost 50 % nurses in Iran accepted the practice of euthanasia during surgery. In another observation study found 50% medical scholars in Iran described encouraging opinion in the use of euthanasia.[28] previous literature can be compared to our study since most undergraduate students from the same religion. Followed by every Islamic sects, any kind of euthanasia are not allowed.[29] But "DNR orders for terminally ill children" are not going against the fundamental regulations Islamic.[30] Islam assumes life as sacred [30] while comprehends death to be unavoidable aspect of life.[20] Muslims acknowledges death is authorized by God.[31] Thus,, treatments are not implied when they just prolong the sufferings of terminal sickness.[30] Removing life-enduring remedies in that situation may appear to allow death to make its natural approach.[31] Hence, the pessimistic impression of Jordanian nursing and PharmD students over "DNR orders for terminally ill children" is not explained in contrast of religious principle. It's

noteworthy that undergraduate students' are showing favorable opinion to additionally understand distinct characteristics of DNR orders for terminally ill children. On the other hand, many undergraduate students revealed that their strict religious convictions greatly impact their attitude toward DNR. One main explanation of the pessimistic approach on "DNR orders for terminally ill children" might arise from absence of deep understanding over DNR orders for terminally ill children. The same way earlier studies indicated that nursing and PharmD students have limited information about many ethical dilemmas.[32]. Though many differences in point of view is observed between Muslims, the perspectives on death remained the same.[30]

Multiple regression tests conducted in the current study to understand the impact of nurses' demographic characteristics on their perceptions of DNR orders for terminally ill children showed that these characteristics were not linked substantially to the nursing and PharmD students' attitudes toward the DNR issue. However, this finding is in contrast to a prior study, which revealed that religious convictions significantly affect more than 70% of the undergraduate students concerning their opinion of DNR orders for terminally ill children [34]. Nevertheless, the finding of the current study does correspond with the outcomes of several studies in this area [34-36}. The current study revealed that religion had no role in the perception of DNR because nurses from different religions participated. Further clarification of the religion plays role as a significant part in life. In many ways, spiritual and religious problem is generally awakened or worsened for dying patients [34]. Many researchers and investigators have examined the influence of religion and culture to ensure an appropriate end to life (Puchalski & Romer, 2000; Astrow, Puchalski, & Sulmasy, 2001). Furthermore, consideration of the impact of cultural and faith on the attitude and posture of nursing and PharmD students should be an essential part of any strategy that is developed to aid patients when it's a life and death situation (Blackhall, Frank, Murphy, Michel, & Palmer, 1999). Based on our results, gender did not significantly influence the DNR decision. However, there is a need for more research to substantiate this claim.

DNR related Ethics

Ethical reasoning and justification of the *do-not-resuscitate* (*DNR*) order in critically ill patients with prolonged suffering should be based on the clinical reality, patient preferences, quality-of-life considerations, and the likelihood of surviving cardiopulmonary resuscitation (CPR). Physicians use their knowledge and skills to make reasonable actions to optimize patients’ health outcomes in accordance with professional judgment. Physicians are also obligated to provide care for patients and make all necessary efforts to provide life support and symptom management at the end of life. However, when the potential benefits of resuscitation are low and a high risk of death is consistently predicted by physicians, hard decisions to stop life-prolonging treatments could be emotionally stimulating for patients and their families, which create intriguing and challenging ethical dilemmas in DNR practices. When curative care and technological interventions are not feasible or unlikely to benefit the patient, the goal of DNR at the end of life is to provide comfort to the patients. Although physicians are cognizant about factors that influence the goal of medical care, yet medical decision-making regarding resuscitation must be made promptly based on the potential benefits and risks of resuscitation. Further, studies showed that survival rates for patients had CPR was unpredictable due to several influencing factors such as age, comorbidities, presence of early defibrillation, and cardiac activity. Accordingly, the American Heart Association Guidelines recommend resuscitation for all patients unless they signed DNR orders and expressed clear signs of death. Despite resuscitation is associated with a low success rate of survival and subnormal levels of function, many physicians opt to resuscitate to avoid litigation or criticism, which might result into overwhelming financial issues, excessive resource utilization, and suboptimal quality of life [37].

Studies revealed that the lack of public knowledge regarding CPR led to inaccurate beliefs and over-expectation regarding the outcomes and the success rate of CPR, which might have influence patients' inclinations to DNR orders. As CPR may only prolong the dying process accompanied by adverse health sequences that might extend the length of hospital stay, DNR can be ethically acceptable, especially when death is welcome by the patient as a natural process of life. Since physicians are portioned to communicate with patients and families about end-of-life care and some hard decisions to make with a great focus on patients' preferences and autonomy, they may be aware of the emotional pressure they may exert on patients and family members when assisting with communication about DNR orders, although it could be justified, potentially helpful, and aligned with autonomy preferences of patients [38]. Without prior singed DNR orders, the role of physicians can be more complex. One of the big ethical challenges of end-of-life care is withholding and withdrawing care that is unlikely to provide physiological benefits for patients. Thus, standards for excellent care should be established to respect the autonomy of patients at the end of life, which in turn can help physicians make effective decision-making without being hesitant from providing care for desperately ill patients [38,39]. Education of patients regarding DNR orders that might be considered near the end of life and how likely resuscitation attempts can benefit those patients and whether these orders comply with patients' values, beliefs, and the goals of receiving treatment, are essential to improving their decision-making and enhance physicians' aptitudes to deal with patients' needs.

Implications for practice

The outcomes of this research have suggestions for real life exercises. Results showed that Jordanian nursing and PharmD students have a negative attitude toward many key aspects of DNR orders for terminally ill children. This means that Jordanian nursing and PharmD students are one of the obstacles to legalized DNR orders for terminally ill children. Besides, this study shows that Jordanian nursing and PharmD students are willing to learn more about different aspects of DNR orders for terminally ill children and analyzing their responses to many items showed their misconception about DNR orders for terminally ill children. So, it is important to provide education programs during studying program about DNR or other ethical issues face nursing and PharmD students. Also, Addition of such courses in educational curriculums of Baccalaureate nursing students will be beneficial. According to the study outcome, the attitude of Jordanian nursing and PharmD students about DNR orders for terminally ill children may change by such education.

Conclusion

. A non-Western nation adds to knowledge as it extends our understanding of this particular subject in another context. The findings of the current study suggest that further consideration should be given to the effect of religious and cultural issues on nursing and PharmD students' perceptions toward the DNR. This study shows that Jordanian nursing and PharmD students are willing to learn more about different aspects of DNR orders for terminally ill children and analyzing their responses to many items showed their misconception about DNR orders for terminally ill children.

Declarations

Abbreviations

PPC

Pediatric Palliative Care
PCQN
Palliative Care Nursing Questionnaire

Declarations

Ethics approval and consent to participate: This research got an Approval from Jordan University of Science and Technology IRB(#20202343). Consent form was signed from all the participants.

Consent to publish: We gave the right to BMC Palliative Care to publish
Availability of data and materials: data will be sent upon request
Competing interests: no conflict of interest for any author in this paper
Funding Section: This project was carried out as part of “The Research Ethics Education Program in Jordan” and has been supported by NIH grant number (1R25TW010026-01). The funder support data collection and fees for publication.
All authors have read and approved the manuscript”, and ensure that this is the case.

Acknowledgment: DNR Questionnaire was approved to use from Dunn (2000).

The instrument was developed by Dr Dunn and permission was given to use it.

Authors' Contributions

SA and SM: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing.

KA: Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing

References

1. Swedish Society of Medicine, Swedish Society of Nursing and Swedish Resuscitaion Council Ethical Guidelines for CPR (Etiska riktlinjer för HLR). 2013 Apr 05. [cited 1 May 2018]. In Ethics in CPR [Internet]. Stockholm: Svenska Rådet för Hjärt-lungräddning. Available from: https://www.hlr.nu/wp-content/uploads/2018/03/Etiska-riktlinjer-för-HLR-Maj-2013.pdf.

2. WHO. WHOQOL: Measuring Quality of Life. 2018 [cited 15 August 2018]. In Health statistics and information systems [Internet]. Geneva: WHO. Available from: http://www.who.int/healthinfo/survey/whoqol-qualityoflife/en/

3. . Burns JP, Truog RD. The DNR Order after 40 Years. N Engl J Med. 2016 Aug 11. pmid:27509098

4. Pettersson M, Hedstrom M, Hoglund AT. Striving for good nursing care: Nurses' experiences of do not resuscitate orders within oncology and hematology care. Nurs Ethics. 2014 Jun 9. pmid:24913543

5. Silen M, Svantesson M, Ahlstrom G. Nurses' conceptions of decision making concerning life-sustaining treatment. Nurs Ethics. 2008 Feb 15. pmid:18272607

6. Clements M, Fuld J, Fritz Z. Documentation of resuscitation decision-making: a survey of practice in the United Kingdom. Resuscitation. 2014 Feb 25. pmid:24560825

7. Adhikari S, Rijal S. Attitude of doctors working in a tertiary hospital towards Do-not-resuscitate decisions. Journal of General Practice and Emergency Medicine of Nepal. 2019 Dec 31;6(8):13 – 6.

8. Naghshbandi S, Salmasi S, Parsian Z, Rahmani F. Attitude of nurses in intensive care units towards Do Not Resuscitate order. Journal of Research in Clinical Medicine. 2019 Dec 20;7(4):122-8.

9. Shayestefar S, Mardani-Hamooleh M, Kouhnavard M, Kadivar M. Ethical challenges in pediatrics from the viewpoints of Iranian pediatric residents. Journal of Comprehensive Pediatrics. 2018;9(1).

10. Schwartz JA. Innovation in pediatric surgery: the surgical innovation continuum and the ETHICAL model. J Pediatr Surg. 2014;49(4):639–45. doi: 10.1016/j.jpedsurg.2013.12.016. [PubMed: 24726128].

11. Asemani O, Parsaei H. Decisionmaking on the prolongation of the life of severely diseased newborns: reinspection of criteria. Iranian J Med Ethics Hist Med. 2012;5(5):36–52.

12. Salem A, Salem AF. Breaking bad news: current prospective and practical guideline for Muslim countries. J Cancer Educ. 2013;28(4):790–4. doi: 10.1007/s13187-013-0523-8. [PubMed: 2387295

13. Levin T, Li Y, Weiner J, Lewis F, Bartell A, Piercy J. How do-not-resuscitate orders are utilized in cancer patients: Timing relative to death and communicating-training implications. Palliat Support Care. 2008 Dec. pmid:19006588

14. Duplan KL, Pirret AM. Documentation of cardiopulmonary resuscitation decisions in a New Zealand hospital: A prospective observational study. Intensive Crit Care Nurs. 2016 Dec. pmid:27575617

15. Peimani M, Zahedi F, Larijani B. Do not resuscitate order across societies and the necessity of a national ethical guideline. Iranian J Med Ethics Hist Med. 2012;5(5):19–35. 30

16. Izadikhah A, Changiz YN, Mirshahjafarey I. Developing codes of ethics for clinical medicine educators. Iranian J Med Ethics Hist Med. 2013;6(1):37–52.

17. Jensen HI, Ammentorp J, Johannessen H, Ording H. Challenges in end-of-life decisions in the intensive care unit: an ethical perspective. J Bioeth Inq. 2013 Mar. pmid:23299401

18. Mockford C, Fritz Z, George R, Court R, Grove A, Clarke B, et al. Do not attempt cardiopulmonary resuscitation (DNACPR) orders: a systematic review of the barriers and facilitators of decision-making and implementation. Resuscitation. 2015 Mar. pmid:25433293

19. Pfeil TA, Laryionava K, Reiter-Theil S, Hiddemann W, Winkler EC. What keeps oncologists from addressing palliative care early on with incurable cancer Health, 2016; 4(2): 55–59.

20. Dunn MC. MS Dissertation. Long Beach: Department of Social Work, California State University; 2000. Attitudes of medical personnel toward do-not-resuscitate orders

21. Fallahi M, Banaderakhshan H, Abdi A, Borhani F, Kaviannezhad R, Karimpour HA. The Iranian physicians attitude toward the do not resuscitate order. Journal of multidisciplinary healthcare. 2016;9:279.

22. Mahon MM, McAuley WJ. Oncology nurses' personal understandings about palliative care. Oncol Nurs Forum. 2010 May. pmid:20439199

23. Iyilikci L, Erbayraktar S, Gökmen N, Ellidokuz H, Kara H, Günerli A. Practices of anaesthesiologists with regard to withholding and withdrawal of life support from the critically ill in Turkey. Acta Anaesthesiol Scand. 2004;48:457–62.

24. Al-Mobeireek AF. Physicians' attitudes towards 'do-not-resuscitate'orders for the elderly: A survey in Saudi Arabia. Arch Gerontol Geriat. 2000;30:151–60.

25. Varon J, Bisbal Z, Vargas B, Fromm RE, Jr, Tai DY. Cardiopulmonary resuscitation preferences among health professionals in Singapore. Crit Care Shock. 2004;7:219–25.

26. Moghadas T, Momeni M, Baghaeei M, Ahmadi S. Intensive care unit of nurses' attitudes toward euthanasia. Iranian J Med Ethics Hist Med. 2012;5:80–86.

27. Rastegari-Najafabadi H, Sedaghat M, Saeedi Tehrani S, Aramesh K. Nurses' attitudes Tehran of Medical University hospitals towards euthanasia. Iranian J Med Ethics Hist Med. 2010;3:37–44.

28. Tavosian A, Sedaghat M, Aramesh K. Attitudes of interns Tehran University of medical sciences towards euthanasia. Iranian J Med Ethics Hist Med. 2009;3:43–51.

29. Takrouri M, Halwani T. An Islamic medical and legal prospective of do not resuscitate order in critical care medicine. Internet J Health. 2008;7:12–16

30. Sarhill N, LeGrand S, Islambouli R, Davis MP, Walsh D. The terminally ill Muslim: Death and dying from the Muslim perspective. Am J Hosp Palliat Care. 2001;18:251–5. .

31. Zahedi F, Larijani B, Tavakoly Bazzaz J. End of life ethical Issues and Islamic views. Iran J Allergy Asthma Immunol. 2007;6:5–15.

32. Zahedi F, Larijani B. Cancer ethics from the Islamic point of view. Iran J Allergy Asthma Immunol. 2007;6:17–24.

33. Zarghami M, Valaie N, Sartakhti AA, Mehraban M, Mahmoudi R, Moonesi FS. Attitudes of iranian interns and residents towards euthanasia. World Appl Sci J. 2010;8:486–9.

34. Jung JY, Shin SY. Awareness and Ethical Attitudes about DNR of Emergency Department Students: Differences in Recognition According to Bioethics Education. □□□□□□□□ □□□. 2014 Feb;15(2):1074-82.

35. Emami-Razavi S, Ghajarzadeh M, Oryani S, Askari F, Jalilian R, Azizi S. Perspectives of Iranian medical nurses about do-not-resuscitate (DNR) orders. Academic Journal of Surgery. 2014;1(3–4):49–51.

36. Hileli I, Weyl Ben Arush M, Hakim F, Postovsky S. Association between religious and socio-economic background of parents of children with solid tumors and DNR orders. Pediatric blood & cancer. 2014

Feb;61(2):265-8.

37., American Nurses Association. Nurses' roles and responsibilities in providing care and support at the end of life. *Revised position statement*. 2016, 3(2)

38. Luce,. M., White,. B. The pressure to withhold or withdraw life-sustaining therapy from critically ill patients in the United States. *American journal of respiratory and critical care medicine*, *175*(11), 1104–1108.

39. Agich, G. J, Arroliga, A. C. (2000). Appropriate use of DNR orders: a practical approach. Cleveland Clinic journal of medicine, *2000, 67*(6), 392–400.

40. Jones, J. W, McCullough, L. B. The ethical hierarchy of do not resuscitate orders: Never say never.

Tables

Table 1: Frequency Distribution of Socio-demographic Characteristics of Undergraduate Students	
Variable	**Frequency (%)**
Gender	
Male	90(22.4)
Female	312(77.6)
Nationality	
Jordanian	325 (80.8)
other	77(19.2)
Age	M=20.3(SD=2.6)
Mother education	
Primary or secondary	125 (31.1)
Diploma	55 (13.7)
Bachelor	143 (35.6)
Graduate	79 (19.7)
Father education	
Primary or secondary	118 (29.4)
Diploma	101 (25.1)
Bachelor	134 (33.3)
Graduate	49 (12.2
College level	
Freshmen (first year)	23 (5.7)
Sophomore (second year)	30 (7.5)
Junior (third year)	78 (19.4)
Senior (fourth year)	130 (32.3)
Senior (fifth year)	105 (26.1)
Senior (sixth year)	36 (9.0)
Income	
Less than 400	47(11.7)
400 to 600	86 (21.4)
600 to 800	61 (15.2)
800 to 1000	85 (21.1)

More than 1000	123 (30.6)
Speciality area	
Nursing	242 (16.4)
Pharm-D	160 (42.9)
Area of living	
City	261 (64.9)
Village	141 (35.1)
Prior Experience with DNR	
No	150 (37.3)
Yes	252 (62.7)
DNR	
No	350(87.1)
Yes	52 (12.9)
Reasons for Preventing DNR	
Religious reasons	78 (19.4)
Social reasons	78 (19.4)
Scientific	50 (12.4
Others	196 (48.8)

Table (2): Responses to DNR items for Nursing and PharmD students

ITEMS	Strongly Not Agree		Not Agree		Neutral		Agree		Strongly Agree	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
DNR orders for terminally ill children help keep patients from suffering unnecessarily.	9	2.2%	36	9.0%	77	19.2%	107	26.6%	173	43.0%
I feel that the physician should make all the decisions regarding the patient's treatment.	139	34.6%	103	25.6%	79	19.7%	43	10.7%	38	9.5%
I feel all patients that are permanently brain impaired should automatically have DNR orders for terminally ill children.	19	4.7%	29	7.2%	129	32.1%	148	36.8%	77	19.2%
I feel that the patient or the patient's family should be in control of all medical decisions.	12	3.0%	19	4.7%	108	26.9%	164	40.8%	99	24.6%
It is futile to prolong the life of frail, elderly patients.	32	8.0%	76	18.9%	195	48.5%	70	17.4%	29	7.2%
It is difficult for me to talk to my patients about death.	62	15.4%	92	22.9%	136	33.8%	78	19.4%	34	8.5%
I feel the healthcare team must always provide hope to patients even when death is imminent.	22	5.5%	34	8.5%	94	23.4%	138	34.3%	114	28.4%

Life-prolonging equipment can undermine the natural process of death.	35	8.7%	38	9.5%	102	25.4%	96	23.9%	131	32.6%
The monetary factor of keeping terminally ill patients alive is difficult to justify.	42	10.4%	64	15.9%	92	22.9%	79	19.7%	125	31.1%
Am afraid the family will file a lawsuit if their family member is not resuscitated.	57	14.2%	93	23.1%	136	33.8%	70	17.4%	46	11.4%
I wish I had a better understanding of the legal ramifications of DNR.	40	10.0%	59	14.7%	132	32.8%	112	27.9%	59	14.7%
I wish I knew more about advance care directives.	34	8.5%	107	26.6%	116	28.9%	83	20.6%	62	15.4%
I would like to know more about patient's rights.	91	22.6%	97	24.1%	120	29.9%	59	14.7%	35	8.7%
If my mother was end-stage terminally ill, I would not want DNR orders for terminally ill children written.	78	19.4%	104	25.9%	126	31.3%	60	14.9%	34	8.5%
My religious beliefs greatly influence my view of DNR.	125	31.1%	107	26.6%	110	27.4%	39	9.7%	21	5.2%
My cultural background makes it difficult for me to deal	19	4.7%	40	10.0%	81	20.1%	98	24.4%	164	40.8%

with the DNR issue.										
The patient or the patient's family must give written permission in orders for the physician to initiate DNR orders for terminally ill children.	18	4.5%	22	5.5%	95	23.6%	92	22.9%	175	43.5%
I feel pressure from the hospital utilization review to push for DNR orders for terminally ill children.	54	13.4%	65	16.2%	157	39.1%	93	23.1%	33	8.2%
I feel I must conform to my peers wishes regarding DNR orders for terminally ill children.	31	7.7%	33	8.2%	150	37.3%	111	27.6%	77	19.2%

Table 3: Multiple Regression for predictors of **DNR** of terminally ill children

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	93.260	10.232		9.114	.000
	age	-.539	.393	-.093	-1.372	.171
	gender	-.364	1.573	-.013	-.231	.817
	Research	.511	2.280	.013	.224	.823
	Hear about DNR	.082	1.440	.003	.057	.955
	Discuss DNR	-3.477	2.025	-.101	-1.718	.087
	Prevent reasons	-1.197	.549	-.124	-2.180	.030
	Income	.203	.506	.024	.401	.689
	living	2.614	1.418	.107	1.844	.066
	Nationality	-.170	1.693	-.006	-.100	.920
	year	1.098	.699	.107	1.570	.117
	Father education	.114	.725	.010	.157	.875
	Mother education	.811	.680	.078	1.193	.234

a. Dependent Variable: Attitude toward DNR