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Knowledge and Attitude towards End-of-Life Decisions among University Students in Lebanon: A Cross-Sectional Study

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Abstract

Background and objectives: When faced with death, many controversies tend to arise, most pertinent to the medical field being the decisions at end of life. This study aims to evaluate the perception and awareness of university students in Lebanon towards end-of-life decisions and practices: euthanasia, Do Not Resuscitate (DNR) orders, and withholding/withdrawal of life sustaining treatment.

Method: A cross-sectional study was conducted using a self-administered questionnaire. Students from different universities and governorates were approached through an online survey which contained 48 items, including knowledge, attitude and Wasserman scales in addition to a clinical vignette. Data was analyzed using SPSS.

Results: A total of 440 participants fully completed the questionnaire; they were equally divided between private universities and the Lebanese university; there was also an equal distribution between healthcare and non-healthcare related specialties. The majority was religious, half of the participants had no knowledge about the legal aspect of withholding/withdrawal of treatment in Lebanon. In the knowledge section, healthcare students scored a higher mean (3.86/6) than their non-healthcare counterparts (2.8/6); concerning attitudes, non-religious students had a more favorable attitude towards euthanasia and DNR orders in comparison with religious ones (27.63/50 vs 21.23/50 and 9.87/15 vs 8.01/15 in Wasserman and DNR scales). Administering a lethal injection was more accepted among suicidal, and non-religious individuals.

Conclusion: There is insufficient knowledge among university students regarding end-of-life situations, needing further awareness and clear guidelines to govern life terminating decisions. In terms of attitude, religiosity significantly affected the perspective of students towards these issues.

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Introduction

With the perpetual advance in medical sciences, different fields in this ever-growing domain are experiencing huge progress, including palliative care medicine. Nevertheless, physicians are still facing terminally ill patients with little power to modify their disease progression and agony. Hence, the notions of 'Withholding and Withdrawal of Life Sustaining Treatment' (WW of LST), 'Do Not Resuscitate (DNR)', and the more controversial 'Euthanasia' are being used and discussed all over the world. By WW of LST, the physician abstains from initiating or stops certain procedures, drugs etc. essential for the preservation and extension of the patient's life [1]. DNR order is in use when the doctor is not required to resuscitate a patient if he undergoes a cardiac or respiratory arrest [2]. It is designed to prevent unnecessary suffering, and to promote a more dignifying death in cases where treatment is futile or where the possible damages to the patient will outweigh the benefits of resuscitation. These end life measures are currently well established, their uses being legal and well explained in the juristic and ethico-medical systems of most countries. However, Lebanon is not included due to the vague guidelines regarding these issues [3].

Euthanasia defined as a practice undertaken by a physician, which intentionally ends the life of a person at his explicit request (active voluntary euthanasia) or facilitates the death of such a person (Physician Assisted Suicide: PAS) [4] is a controversial concept from the ethical and medical point of view taking into consideration the purpose of medicine: doctors shall always preserve life. As a result, we can only find a handful of countries or states that legalized euthanasia [5], while others condemn it such as Lebanon in which applying it is a crime and the intervention is punishable if its legal conditions are met [6].

Whether discussing WW of LST, DNR, or euthanasia, any concept that holds a social impact requires an understanding of the public's knowledge and point of view towards it, and these end life issues are no exceptions. For example, a study in Hong Kong showed that 66.4% of non-medical students and 18.7% of medical students in a certain university had never heard of DNR [7], while in a German study assessing the attitudes of medical students towards euthanasia and PAS, 56.9% dismissed the former as an ethically accepTable procedure and 51.2% opted for the latter [8]. From this understanding, usually stem the laws and regulations that govern the medical system of each country.

In Lebanon, in 2003, a study performed among judges found that respondents tended to agree mostly with the right of a person to refuse life-sustaining support if he or she wishes to end their life, but the level of agreement was remarkably lower in cases involving patients requesting active assistance to die [9]. Similarly, a study published in 2020 assessed the attitudes of intensivists, legal, and religious leaders towards End of Life (EoL) decisions [10]. Nevertheless, no studies were conducted to assess the knowledge and attitudes of the public or university students (which constitute an important slice of the society) towards WW of LST, DNR, and euthanasia, and no aspects explaining the possible attitudes were investigated.

Therefore, in this study we assessed the knowledge and attitude of university students towards EoL issues and decisions (WW of LST, DNR and euthanasia). We also compared the obtained results between healthcare and non-healthcare students. In addition, we investigated certain factors that were considered for possible associations with the different attitudes towards EoL decisions.

To summarize, we aimed to determine the current state of mind towards WW of LST, DNR and Euthanasia among students from the different universities of Lebanon.

Methodology

Study design

An observational cross-sectional study design was adopted to conduct this research. The target population was approached online, using social media, and the responses were collected using an online survey that was distributed on several social platforms.

Study population and sample

The target population were students from the different universities in Lebanon: Lebanese University (public) and from several private universities. All students were eligible to participate. Using the EpiInfo software (CDC-Atlanta), and considering a 50% positive attitude, a 5% alpha error, and a 20% beta error, the minimal sample size (with a 95% confidence level and 5% margin of error) was calculated to be 385 students.

Due to the quarantine and health crisis caused by the COVID-19 pandemic, the individuals were asked to fill a questionnaire using Google forms. Before the questionnaire, there was a small introduction that summarized the purpose of the survey.

Tests and procedures

- The questionnaire was developed by the authors after a thorough literature review. Many questions were composed to analyze specific variables of the Lebanese students. Others were based on previous studies [9,11]. The questionnaire is composed of 5 sections: Section 1 dealt with sociodemographic information.
- Section 2 contained 8 questions concerning general beliefs and information: Religious status and suicidal thoughts self-assessment, beliefs about life and death.
- Section 3 evaluated the knowledge of the participants regarding the studied variables using 9 questions that assessed their familiarity with the practices at EoL and their acquaintance with the definitions and legalities of these practices. Before moving to the next section, definitions for the studied variables were provided to ensure their proper understanding.
- Section 4 included two parts that aimed to assess the attitudes of the participants. The first part comprised of 4 questions that examined the right to use DNR order (among others) and the circumstances that trigger it. In the second part, we used the Attitude Towards Euthanasia scale (ATE) of Wasserman [12] to highlight the stance of the participants towards different cases involving EoL decisions. The scale includes 10 self-reported items graded in a 5-point Likert system. Questions 6 and 9 are used to check the response bias.
- In section 5, we presented the case of an elderly patient suffering from a terminal illness and asked the students to indicate their opinions regarding practices and decisions to be made. The case was adopted from a previous Lebanese study [9].

Ethical consideration: Ethical clearance was obtained from the institutional review board of the 'Sahel General hospital'.

The participation was optional. The participants were informed that their responses will be kept confidential and will only be used for scientific purposes. They were also able to drop from the study at any time, all while guarantying that any filled information would not be used in this case.

Statistical analysis

The collected data was analyzed using SPSS. We used descriptive statistics to assess the different variables. Then, we classified the participants according to their level of knowledge by specifying the number of questions answered correctly in the knowledge section: 6 questions, each accounting for 1 point if answered correctly, were used to form a knowledge scale. Concerning the opinion towards DNR orders, a scale made out of 3 statements (receiving 1 to 5 points depending on the answer provided by the participant), was relied on. Furthermore, the mean score of the participants on the ATE scale was calculated and compared to the scores obtained by other studies. We also compared the results obtained on the 5th question of the case presented in the questionnaire to the results of the previous Lebanese study whose population was the Lebanese judges. To complete the analysis, we compared the results between the healthcare students (especially general medicine and nursing majors) and non-healthcare. P value<0.05 were considered statistically significant.

Results

Univariate results

A total of 472 completely filled questionnaires were submitted. 8 participants were eliminated due to a response bias being detected in the Wasserman Scale, and 24 responses were determined to be duplicates. The final number of surveys to be used in the analysis was 440.

Among the participants, 30% were males and 70% were females with different number of entries from different governorates. The mean age was 21.53 with a minimum of 17 and a maximum of 65. Concerning university distribution, Figure 1 shows an equal number of students from the public university in Lebanon and the private ones. There were 220 students majoring in a healthcare related specialty (120 [27.3%] in medicine, 40 [9.1%] in nursing, 18 in pharmacy [4.1%] and 42 in other [9.5%]) and another 220 in a non-healthcare related one. The majority of participants were religious and constituted 88.2% of the sample, and 27.6% have had suicidal thoughts whether sometimes, often or always. Figure 2 features the participants highlighting the importance of quality of life, and its sacredness in general with a relative less agreement regarding its sacredness in relation to how it is lived, and the notion of death with dignity in certain conditions.

Regarding knowledge about EoL practices, 36.6% of the participants (161), 31.4% (138), and 5.9% (26) have never heard about DNR orders, WW of LST and euthanasia respectively. About half of the participants (221) had no knowledge about the legal and practical aspects of WW of LST in Lebanon and 302 of them did not know about or wrongfully answered 'false' to the question regarding the possibility of issuance of DNR orders in relation to the patient's age. As a result, the mean score for the knowledge about EoL practices scale was 3.2 with a standard deviation of 1.356.

Concerning the attitude towards EoL practices, 35.2% of the participants (155) agreed with the right of ANY patient to ask for a DNR order while 38% (167) did not. Eventually, 24.5% (108) believed that the issuance and execution of DNR orders is morally accepTable and right, while 35.5% (156) did not believe so. As a result, the mean score for the DNR attitude scale was 8.23 with a standard deviation of 2.547. For the ATE scale, the mean score was 21.99 with a standard deviation of 7.446.

In the case presentation of the elderly man, 38.4% of the participants (169) agreed with the administration of a higher dose of painkillers, and with the issuance of a DNR order based on the patient request, while 31.1% (137) and 33.4% (147) disagreed respectively with the mentioned plans. In regards to active methods for ending one's life, the percentage of participants approving the use of a deadly pill (PAS), 27.3% (120), decreased to 22.1% (97) when it involved a lethal injection by the physician (euthanasia). On the other hand, nearly half of the students disagreed with the use of such methods. At the end of the case presentation, we found that 28.6% of the university students (126) defended the right of a mentally competent elderly, suffering from an incurable and painful disease, to end his life if he so desires while 29.5% (130) remained undecided regarding this issue. Figure 3 depicts the attitude of each individual, concerning his own EoL decisions, if confronted with a situation comparable to that of the elderly man.

Bivariate results

Concerning the knowledge of the participants (Table 1), a significantly higher percentage of private university students heard about the term DNR (68,6% vs 58.2% with p value=0.023). Conversely, there was a significant higher knowledge among students of public university of the term euthanasia (97.3% vs 90,9% with p value=0.005). Furthermore the analysis of knowledge scores for participants studying in the healthcare field (medicine, nursing) compared to those studying in a non-healthcare field showed a significant higher percentage of students from the first group being knowledgeable with the terms DNR, WW of LST and euthanasia with an overall higher mean score (3.86 vs 2.8) on the knowledge scale (p value<0.001 for all the mentioned comparisons).

Checking the effect of several factors on the participant's points of view (Table 2), we found that religiosity significantly affected different aspects of attitudes towards EoL practices: for example non-religious participants encouraged the issuance of DNR order based on the patient's request in comparison to their religious counterparts (61.5% vs 35.3% and p<0.001), the former participants also advocated the administration of a lethal injection that ends a patient's life while the latter mostly disagreed (50% vs 18.3% and p<0.001). Both Wasserman and DNR scale means were higher in non-religious students than in religious ones with 27.63 vs 21.23 and 9.87 vs 8.01 respectively (p<0.001 in both).

Moving forward to the specialty section, non-healthcare related participants were less likely to agree with the issuance of a DNR order comparing them to healthcare related participants (32.3% vs 48.8% and p<0.001). Healthcare related students were also more tolerant of the double dose effect (48.1% vs 31.4% and p=0.004). The administration of a lethal injection was refused by a high percentage of participants from both groups (60.6% for healthcare related specialty and 50.9% for non-healthcare).

Table 1: University and specialty associations with knowledge about end-of-life practices.

	Ever heard about DNR (1)		Knowing about the practice of WW (2)		Ever heard about euthanasia (3)		Knowledge scale mean (4)	
	No	Yes	No	Yes	No	Yes		p-value
Public University (220)	92 (41.8%)	128 (58.2%)	70 (31.8%)	150 (68.2%)	6 (2.7%)	214 (97.3%)	3.23	**(1): 0.023** (2): 0.837 **(3): 0.005** (4):0.599
Private University (220)	69 (31.4%)	151 (68.6%)	68 (30.9%)	152 (69.1%)	20 (9.1%)	200 (90.9%)	3.16	
Specialty non healthcare related (220)	119 (54.1%)	101 (45.9%)	93 (42.3%)	127 (57.7%)	20 (9.1%)	200 (90.9%)	2.8	**(1): <0.001** **(2): <0.001** **(3): 0.001** **(4): <0.001**
Specialty healthcare related (medicine or nursing) (160)	18 (11.3%)	142 (88.8%)	22 (13.8%)	138 (86.3%)	2 (1.3%)	158 (98.8%)	3.86	

Table 2: Religiosity, specialty and current year of study associations with attitude towards end-of-life practices.

	Question C1 (1)			Question C2 (2)			Question C4 (3)			Wasserman mean (4)	DNR scale mean (5)	p-values
	Disagree	Undeci.	Agree	Disagree	Undeci.	Agree	Disagree	Undeci.	Agree			
Non-religious (52)	7 (13.5%)	13 (25%)	32 (61.5%)	13 (25%)	13 (25%)	26 (50%)	14 (26.9%)	12 (23.1%)	26 (50%)	27.63	9.87	**(1): <0.001** (2): 0.187 **(3): <0.001** **(4): <0.001** **(5): <0.001**
Religious (388)	140 (36.1%)	111 (28.6%)	137 (35.3%)	124 (32%)	121 (31.2%)	143 (36.9%)	226 (58.2%)	91 (23.5%)	71 (18.3%)	21.23	8.01	
Specialty non healthcare related (220)	67 (30.5%)	82 (37.3%)	71 (32.3%)	75 (34.1%)	76 (34.5%)	69 (31.4%)	112 (50.9%)	56 (25.5%)	52 (23.6%)	22.75	8.07	**(1): <0.001** **(2): 0.004** (3): 0.169 **(4): 0.021** (5): 0.320
Specialty healthcare related (160)	54 (33.8%)	28 (17.5%)	78 (48.8%)	38 (23.8%)	45 (28.1%)	77 (48.1%)	97 (60.6%)	32 (20%)	31 (19.4%)	20.95	8.34	
Non clinical years (102)	37 (36.3%)	25 (24.5%)	40 (39.2%)	21 (20.6%)	34 (33.3%)	47 (46.1%)	63 (61.8%)	20 (19.6%)	19 (18.6%)	20.75	7.93	**(1): 0.001** (2): 0.126 (3): 0.922 (4): 0.664 **(5): 0.007**
Clinical years (in the hospital) (58)	17 (29.3%)	3 (5.2%)	38 (65.5%)	17 (29.3%)	11 (19%)	30 (51.7%)	34 (58.6%)	12 (20.7%)	12 (20.7%)	21.29	9.05	

Undeci. stands for Undecided Question C1: The physician issued a DNR order based on the patient's request, what do you think about it Question C2: Knowing that a higher dose might accelerate his death while relieving him, should the doctor give it to him ?.

Question C4: If legal, it is okay for the doctor to administer a lethal injection that will end his life ?

Discussion

After a thorough literature review, this is the first study examining the knowledge and attitude of the population in Lebanon, specifically university students, towards EoL situations and decisions. The surveyed participants were well distributed reaching equal representations from the public and private universities. In terms of specialty (healthcare vs non-healthcare related), the numbers were also equally matched with a predominance of medical and nursing students in the healthcare field (160/220); these students having a more pertinent relation towards the studied topic. This diversity of participation related to the field of study and the university among other variables indicated the wide extent to which this study has reached among the students in Lebanon.

Knowledge

When assessing the knowledge regarding the 3 aforementioned EoL practices, the results have, as expected, showed that the knowledge scale mean was higher in healthcare related specialty students due to the nature of their field of study (3.86 vs 2.8 for non-healthcare students).

Legal wise, only a modest number of students were aware that euthanasia and WW of LST are not legally permitted in Lebanon (58.6% and 37.1% respectively). This may go back to the lack of education regarding the judicial aspects of these decisions, not to mention the poor legislative texts that discuss them.

From this standpoint, our results have revealed that the knowledge of the participants is limited to a certain extent, this limitation being more marked in non-healthcare students.

Attitude compared to other studies

Our study showed that the attitudes towards life and death issues might be changing in the Lebanese society, since more than 50% of the participants believed that 'in certain cases death is more dignifying than life' contradicting the traditional ideals of middle eastern countries that tend to emphasize the necessity for life preservation at all costs. This possible change in general beliefs among the young Lebanese population, translated only partially into an actual application regarding the decisions at EoL, as only 35.2% of the participants agreed with the right of any patient to ask for a DNR order.

When examining the results of the DNR and euthanasia

scales, it was found that non-religious participants were significantly more tolerant than their religious counterparts in regards to life terminating orders, which supports the presence of a significant role for faith in guiding the decision-making process at EoL.

When examining the effect of specialty on the attitude of the participants, we found that students in the healthcare field (medicine and nursing) were more permissive for the double dose effect (p=0.004) and the issuance of DNR orders (p<0.001) in comparison to non-healthcare students; such difference possibly being explained by the exposure of medical and nursing students to actual situations involving the patient's pain and suffering, along with the prerequisite knowledge of his poor prognosis. We also found that students working in healthcare facilities were more in accordance with the issuance of DNR orders than students who are yet to start their clinical rotations (p<0.001), indicating the possible roles of experience and exposure in shifting the attitudes towards these orders.

When comparing our results to other studies, only 28.3% of the participants studying medicine would allow PAS in severe terminal cases, nearly double this number (51.2%) was in favor of this procedure in a German study [8]. Similar to our findings, a study by Waqas A. et al. [13] conducted in a medical college in Pakistan showed a negative and significant association between religiosity and attitude towards euthanasia. In our analysis of the attitude towards life terminating orders using Wasserman scale, we concluded that the participants are generally not in accordance with the application of euthanasia. As an overall trend, we found that the negative attitude towards euthanasia among healthcare students in Lebanon is comparable to the results obtained by Herath H. et al who examined the opinions of medical students and doctors in Sri Lanka using the same scale [14].

Comparison with the lebanese study

When reviewing the initial studies about this topic in Lebanon, Adib S. et al was the first one to examine the attitudes of Lebanese judges towards the possible application of life terminating orders [9]. And in comparison to our study, we found some similar results and others that differ: about 57% of judges supported, whether partially or totally, assisting the elderly man (from the case presentation) in ending his life. It was found that this agreement decreased with age and was lower among active judges compared to lawyers in training. This result testifies our previously made assumption that suggested a changing perspective among young individuals.

In contrast to their results, our study yielded religiosity as the only variable that significantly influences the opinions of the Lebanese students. This incompatibility could be related to the different ways religiosity was defined in: their definition that relied on the denomination of the participant vs our definition that depended on the personal belief of the individual regardless of his denomination that is usually predetermined at birth in Lebanon.

In the case presentation, we found that the percentage of university students that defended the right of a mentally competent elderly suffering from an incurable terminal and painful disease, to end his life if he so desires was 28.6% (126); this percentage being lower than the one observed among the Lebanese judges (49%).

Overall results

After a thorough analysis of our results, we found that religiosity was the only factor that is consistently affecting the attitude of the students towards EoL decisions. This conclusion, not being specifically surprising, is obviously related to the position that religion holds in the Lebanese culture/society.

Lebanese legal aspects and international regulations

In her study, El Jawiche R conducted interviews with the president and lawyer of the Lebanese order of physicians during which, it came to be clear that the acts of WW of LST are being practiced in Lebanon [10]. The issue in these life terminating decisions resides in the fact that the law No. Two hundred eighty-eight of the Lebanese Code of Medical Ethics Article 27-11 [3], that clearly condemns active euthanasia, leaves the field wide open for interpretations concerning the application of DNR orders, WW of LST.

This lack of regulations and guidelines in our ethical code, is particularly straining the healthcare workers, during the continuous COVID-19 pandemic [15,16].

Contrasting with Lebanon which is devoid of clear guidelines that manage EoL situations, many countries put forth specific legislations that were able to encompass the different aspects of life terminating orders. For example, in 2005, WW of different therapies were authorized in France [17], and in 2021, euthanasia and PAS were both legalized by Spain's parliament [18].

Limitations

After conducting this study, we found certain limitations related to the methodology that could affect our results. First, being done on a google form, the online nature of our survey created some drawbacks: it did not allow an adequate management of the selection bias due to the inability to randomly choose the participants (knowing that the participants were not individually chosen but rather determined by chance).

Second, in our analysis, 2 scales were devised and used to examine the knowledge of the students and their attitudes towards DNR orders; the limitation here lies in the fact that these scales were not validated but nevertheless were used as general indicators to the variables that they were assessing.

Conclusion

To conclude this study, our findings were able to make an adequate representation of the current status regarding the knowledge and attitudes of university students towards life terminating orders. The participants had an adequate understanding about life terminating orders. When examining the attitude towards these decisions, our findings suggested a somewhat undecided one towards DNR orders, this decision becoming better accepted in the case presentation. However, euthanasia as expected, was refused by the majority of the participants; WW of LST being somewhere in the middle and leaning towards a rather negative attitude.

Religiosity of the participant was the only factor (negatively) affecting his attitude. Eventually, due to a striking lack of regulations, we currently call for an ethical/legal discussion to clearly specify the scenarios in which the different EoL decisions may or may not be applied.

Conflict of interest: The authors have no conflicts of interest to declare.

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