

# Influence of the »Rijeka Model« of Bioethics Education on Attitudes of Medical Students towards Death and Dying – A Cross Sectional Study

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## ABSTRACT

*The aim of this study was to assess attitude towards euthanasia, and the influence of socio-demographic data and death education carried out through the »Rijeka model« of bioethics education for the first-year medical students of the School of Medicine, University of Rijeka, Croatia. The cross-sectional study was conducted in the academic year 2003/2004. 124 (61% female) participants were surveyed by using an anonymous questionnaire before and after training. Catholics ( $p=0.003$ ) and students from areas with populations of less than 50,000 inhabitants ( $p=0.001$ ) had significantly negative attitude towards euthanasia than others before the course, yet no differences were found following this training. Attitude towards euthanasia was significantly positive after the course ( $p=0.005$ ). All items in the questionnaire, except »Croatia should legalise euthanasia«, received more positive scores after the course. Death education carried through the »Rijeka model« of bioethics education has changed attitudes of medical students towards a more positive perception of euthanasia.*

**Key words:** attitude to death, euthanasia, education, medical, Croatia

## Introduction

People of earlier generations were exposed to the death of a close person much more frequently than they are today. Nowadays death is rarely experienced in an immediate manner because of end-of-life health care<sup>1</sup>. As a result, earlier generations tended to forge everyday knowledge about death that was commonly experienced since prehistoric times. Different cultures have introduced children to the concept of death as part of religious custom and teaching, as they have in more recent times through formal death education. In health care settings such education is often regarded as another addition to an already overcrowded curriculum for medical students and other health care professionals. This is why medical, nursing and other health care preparation programs of-

fer little education on death, dying, and bereavement despite the fact that »doctors and nurses will be expected not only to educate and counsel about death and bereavement, but also to cope personally when someone dies«<sup>2</sup>. In addition, both school of medicine students and young health-care professionals in Croatia lack education in palliative care/medicine, which is the logical framework within which education about death, dying, and bereavement should be offered. Although there is no formal specialization in the field of palliative care/medicine for Croatian physicians<sup>3,4</sup>, some education is being offered through professional symposia and workshops<sup>5</sup>, but such opportunities do not help students at the third year of study to enter the clinic with practical knowledge of the issue; yet

young health care providers are expected to perform accordingly as they inevitably face dying patients. Care of the dying is everywhere a difficult task for physicians. The physician's duty involves both medical and human care for the dying patient. Medical education should prepare physicians for these tasks as much as possible<sup>6</sup>. As shown by Charlton et al., care for the dying is teachable<sup>7</sup> and a need for such education has been emphasized in many countries all over the world<sup>8</sup>. Analyzing the mentioned issues, i.e. current situation in undergraduate curricula of biomedicine and healthcare in Croatia<sup>9–12</sup>, the idea to introduce education about death, dying, and bereavement as part of the curriculum of medical students at the School of Medicine, University of Rijeka was born.

A substantial body of literature documents that »formalized death education programs can influence our attitude about death« since didactic death education programs can increase »cognitive awareness and understanding of death-related issues«<sup>13,14</sup>. On that platform, the idea to integrate elements of death education into the »Rijeka model« of bioethics education<sup>15,16</sup> during the academic year 2003/2004 emerged. Bioethics is by its nature a young field that combines knowledge from many different fields through its multidisciplinary, interdisciplinary and dialogical approaches to moral issues<sup>17–19</sup>. Therefore, it was sensible that the »Rijeka model« of bioethics education should become a framework within which to offer death education. The »Rijeka model« of bioethics education offers a core course of bioethics to each type of student educated at the School of Medicine, University of Rijeka (medicine, dentistry, nursing, healthcare management, sanitary engineering, laboratory engineering, radiology, and physiotherapy). This requires using different pedagogical approaches to ethical issues according to the particularities of each profession. This model is unique among all four Croatian medical schools<sup>15,16</sup>.

The primary aim of this study was to assess students' attitudes towards death and dying, correlate socio-demographic data and attitudes, and assess the potential influence of death education on these attitudes.

## Subjects and Methods

Our sample of respondents consisted of 124 (61% female) 1<sup>st</sup> year medical students of the School of Medicine, University of Rijeka, mean age 19 years, who attended the required course »Medical Ethics and Bioethics« during the academic year 2003/2004. This research was conducted using an anonymous questionnaire that was employed at the start and after the bioethics education course, and was preceded by a pilot study carried out on October 30, 2003 that involved 21 students from a randomly chosen seminar group. The questionnaire was applied for the first time at the beginning of the course in the winter term (November 03–07, 2003) and was completed by 120 participants (response rate 97%). Data on attitudes towards death and dying were taken for the second time following the bioethics education course at the end of the summer term (May 31–June 04, 2004).

The questionnaire was then completed by 115 participants (response rate 93%).

Death education was designed and conducted according to the *Recommendation of the International Work Group on Death, Dying and Bereavement on the methods of Death Education*<sup>2</sup>. For the purpose of our study 17% (450 minutes) of the teaching hours of the required course »Medical Ethics and Bioethics« were used. The education was carried out through five lectures and five seminars. The lectures were interdisciplinary and included the following topics: religious and cultural aspects of dying, sociology of death, definitions and classification of death and dying (euthanasia, dysthanasia, mysthanasia and orthothanasia)<sup>20</sup>, and hospice and palliative care. Special emphasis was placed on a clear definition of the term euthanasia, defined as »medical actions which, motivated by compassion, cause death prematurely and directly with the aim of removing pain and suffering«<sup>20</sup>. A distinction between types of euthanasia (active, passive, voluntary, involuntary, nonvoluntary and medically assisted suicide)<sup>20–22</sup> was made as well. The moral issues were simultaneously approached by a theologian, a philosopher, a sociologist, a lawyer, a health-care professional, and a bioethicist. During the seminars, the case-analysis method was used. A team composed of a clinician and a bioethicist presented cases from the University Hospital Rijeka that students analyzed using acquired theoretical knowledge. Mass-media such as sections of movies and documentaries were also used to present world-known cases such as those of Karen-Ann Quinlan, Diane Pretty, and Terri Schiavo. The students also had to write a seminar-paper and present it to the group.

The introductory part of the questionnaire contained an anonymous written statement of consent. The students were introduced to the practical aspect of the bioethical principle of autonomy<sup>23,24</sup> and the doctrine of informed consent<sup>25</sup>, which is a starting point for a quality physician-patient relationship. Before giving or denying their consent by marking »Yes, I wish to participate in filling out this questionnaire«, or »No, I do not wish to participate in filling out this questionnaire«, all the important elements and functions of informed consent<sup>26</sup> were explained. The second part of the questionnaire contained 7 questions pertaining to socio-demographics. The third part of the questionnaire was composed of 20 items addressing attitudes to death and dying. The questionnaire clearly distinguishes issues of *euthanasia* (active and voluntary), *assisted suicide* and *withdrawal of treatment or life support*<sup>20–22</sup>. The items were adapted to the Likert type scale<sup>27</sup> of three degrees with the addition of a possibility of a free answer (4 – something else). An independent English translator translated items into English for the purpose of this paper. Afterwards, another translator translated the items back to Croatian and the meaning of items was compared and found lexically equal.

The original scale of attitudes towards death and dying consisted of 20 items, but the scale of the attitude towards euthanasia consisted of 10 items because of the psychometric characteristics of the scale. A common

**TABLE 1**  
DIFFERENCES IN ATTITUDE TOWARDS EUTHANASIA REGARDING STUDENTS' AGE, GENDER, RELIGIOUS BELIEF, HIGH SCHOOL EDUCATION, PARENTS' EDUCATION AND RESIDENCE ANALYZED INDEPENDENTLY (MANN-WHITNEY U TEST)

Variable	Variable group values (categories)	No of students	Euthanasia 1 <sup>st</sup> m Med (5–95 perc. range)	P	Euthanasia 2 <sup>nd</sup> m Med (5–95 perc. range)	P
Age	18	73	27 (18.2–30)	0.875	28 (18.8–30)	0.447
	19 years and more	47	28 (14.25–30)		28.5(19.95–30)	
Gender	male	47	28 (10.75–30)	0.533	29 (18.2–30)	0.871
	female	73	27.5 (18–30)		28 (22–30)	
Religious belief	catholic	83	26 (15.1–30)	0.003	28 (20.2–30)	0.105
	others	27	29 (26–30)		30 (17–30)	
High school	gymnasium	97	28 (18.45–30)	0.085	28 (19.65–30)	0.785
	medical	18	23 (10–30)		28 (23–30)	
Education father	elementary, high and university	43	27.5 (11.25–30)	0.866	28 (18.4–30)	0.429
		77	28 (17.7–30)		29 (20.05–30)	
Education mother	elementary, high and university	65	28 (14–30)	0.113	28 (21–30)	0.813
		55	28 (18.3–30)		29 (19.4–30)	
Residence	<50,000	43	24 (11.5–29.7)	0.001	28 (20.3–30)	0.516
	50,000>	77	28 (18.4–30)		29 (19.5–30)	

1<sup>st</sup> m – 1<sup>st</sup> measurement, 2<sup>nd</sup> m – 2<sup>nd</sup> measurement, Med – median, perc. – percentile

principal component factor analysis with oblimin rotation (on 20 items) was performed to determine the factorial structure of the original scale. The factorial structure consisted of three factors with Eigen values: 5.27, 3.45 and 1.55, but only the first factor, with the highest Eigen value (5.27) had acceptable metric characteristics and was analyzed in this study. Internal reliability of the first factor – *Attitude towards euthanasia*, assessed with Cronbach alpha, was 0.83 ( $p < 0.01$ ) in the first measurement and 0.78 ( $p < 0.01$ ) in the second measurement. Test-retest reliability of the first factor assessed with the Pearson correlation coefficient was 0.55 ( $p < 0.01$ ). The scale *Attitude towards euthanasia* consisted of 10 items (Table 2) and explained 26% of the total variance in the first measurement, and 28% of the total variance in the second measurement. A total score of the scale was derived by adding all score items of the *Attitude towards euthanasia* for the first and second measurements. The minimum score on the *Attitude towards euthanasia* scale was 10 and the maximum was 30. The distribution of the *Attitude towards euthanasia* results significantly differed from the normal distribution in both measurements (1<sup>st</sup> measurement: K-S  $Z = 1.74$ ,  $p = 0.005$ ; 2<sup>nd</sup> measurement:  $Z = 1.72$ ,  $p = 0.005$ ), therefore nonparametric tests were used for further analysis<sup>28</sup>. Nonparametric Mann Whitney U test (as a substitute for t-test for independent samples) was used for the analysis of the *Attitude towards euthanasia* (in both measurements) regarding age, gender, religious belief, high school education, parents' education, and residence. Wilcoxon t-test for dependent samples (as a substitute for ANOVA with repeated measures) was used to investigate differences in *Attitude towards euthanasia* regarding the first and second measurement. Paired t-test for dependent samples was used to investigate differences in items regarding the first and second measurement. The results (Table 1) are shown with me-

dian and 5–95 percentile range. An alpha level of  $p < 0.05$  was used for all statistical tests. Statistical analysis of data was performed using version 10.0 (SPSS Inc., Chicago, IL, USA).

## Results

The total score ranges on the scale *Attitude towards euthanasia* were 10–30 in the first, and 17–30 in the second measurement. Catholics 26(15.1–30) had significantly negative attitude towards euthanasia compared with other participants 29(26–30) in the first measurement, but no differences were found in the second measurement. Participants from areas with populations of less than 50,000 people 24(11.5–29.7) had more negative attitudes towards euthanasia than the other group that inhabited areas with more than 50,000 people 28(18.4–30) before the education, although no differences were found after it (Table 1). There were no differences in attitude toward euthanasia associated with the students' age, gender, high school education and parents' education before and after the course.

*Attitude towards euthanasia* before education 28 (16.1–30) was significantly lower ( $Z = -2.734$ ,  $p = 0.006$ ) than after educational intervention 28(20.35–30). Scores in five of ten items (No 1, 2, 4, 7 and 9 – Table 2) revealed significantly different attitude in the second measurement. Scores of *Attitude towards euthanasia* were more positive after the course for all items except »Croatia should legalise euthanasia«.

## Discussion

The socio-demographic data pointed to significant differences in attitude towards euthanasia associated with

**TABLE 2**  
 PAIRED DIFFERENCES OF ATTITUDE TOWARDS EUTHANASIA SCALE ITEMS

No	Item	No of students		Variable				Paired differences			
		1 <sup>st</sup> m	2 <sup>nd</sup> m	X	SD	X	SD	X	SD	t	p
1	Euthanasia is an »act of mercy«.	79	79	2.30	0.91	2.53	0.80	-0.23	0.75	-2.70	0.009
2	Euthanasia should be legalised in Croatia.	92	92	2.41	0.88	2.23	0.65	0.18	0.81	2.18	0.031
3	A terminally ill patient, conscious and capable of making decisions, has the right to autonomously decide on the method and moment of death.	96	96	2.74	0.65	2.79	0.60	-0.05	0.62	-0.82	0.414
4	The patient's decision for euthanasia is made due to the wish for a more quality process of dying.	92	92	2.41	0.83	2.65	0.73	-0.24	0.88	-2.60	0.011
5	A patient has the right to request help in terminating his/her life (i.e. to be assisted in committing suicide), if he/she is not capable to do so autonomously due to the nature of illness.	98	98	2.48	0.80	2.56	0.81	-0.08	0.82	-0.98	0.327
6	It is ethically legitimate to help a terminally ill patient to end his life (i.e. assist him in suicide) if he is not capable to do so independently due to the nature of his illness.	90	90	2.16	0.89	2.34	0.86	-0.19	0.93	-1.92	0.058
7	When making decisions on artificial life support, the physicians should consider the syntagm »quality of life«.	102	102	2.68	0.63	2.87	0.44	-0.20	0.67	-2.93	0.004
8	If the dying patient who is conscious and competent to make decisions refuses treatment, his decisions should be taken into account.	96	96	2.83	0.49	2.58	0.52	0.00	0.65	0	1.000
9	Beneficence is greater when a terminally ill patient is allowed to »die with dignity«, instead of subjecting him to aggressive and costly treatments of questionable outcome.	80	80	2.39	0.82	2.69	0.63	-0.30	0.77	-3.49	0.001
10	If the »right to life« exists, the »right to death« should also exist.	95	95	2.63	0.76	2.75	0.62	-0.12	0.71	-1.58	0.117

1<sup>st</sup> m – 1<sup>st</sup> measurement, 2<sup>nd</sup> m – 2<sup>nd</sup> measurement

religion and place of residence before the educational intervention, but no differences were found post-training. Before the intervention, Catholics presented significantly negative attitude, comparable to the results of the survey by Rietjens et al. on attitudes towards end-of-life decisions whereby the non-religious showed more support for an active ending of life<sup>29</sup>. Our results also compare to those of DeCesare's study on public attitudes towards euthanasia and suicide for terminally ill persons, which showed a greater proportion of non-Catholic to Catholic respondents expressing approval of both euthanasia and suicide; this approval was shown to increase as religious commitment weakened and religious attendance decreased<sup>30</sup>. For the respondents residing in areas of fewer than 50,000 inhabitants, our results can be compared to those of a survey by Singh<sup>31</sup>, in which a greater proportion of metropolitan than non-metropolitan respondents approved of both euthanasia and suicide for the terminally ill. It could be argued that negative attitude towards eutha-

nasia is characteristic of a more traditional view of the »culture of death« that is prevalent in rural areas, whereby death is seen as an integral part of life and only God, nature, or some other »higher force« can intervene in the course of life<sup>1</sup>.

Regarding the comparison of the first and second measurements, the attitude was more positive after following the course in bioethics education for all items except the one dealing with the issue of the legalization of euthanasia in Croatia. A significant difference in attitude is also noticeable in other four statements dealing with issues of euthanasia as an act of mercy, quality of life, quality of the dying process, and death with dignity vs. medical futility. These results can be explained in terms of teaching materials and methods used to approach the issue of death, dying, and bereavement. The methodology of teaching death, dying, and bereavement through the »Rijeka model« of bioethics education agrees to some extent with the teaching methods, professional back-

ground of teachers, and topics covered in the undergraduate curriculum of medical education in UK medical schools<sup>32</sup>. This comparison is important since a study by Herzler et al.<sup>6</sup> has shown that 51% of the physicians in the UK felt sufficiently prepared for the task of caring for the dying, and thus ready for coping with death. Our education represents a genuine curricular innovation, we believe, rather than an emulation of European trends. Since young persons (namely, our students) seldom have direct confrontation with death, some confrontation in the classroom is necessary to establish a starting point<sup>2</sup>.

Analysis of classical cases of medical ethics such as the Karen-Ann Quinlan case<sup>33</sup>, or more recent ones such as the case of Diana Pretty<sup>34</sup> or Terri Schiavo<sup>35</sup>, presented both historical and contemporary issues of the position of euthanasia in the American and European judicial system, as well as bioethical and human deliberations on the near-the-end-of-life decisions. Using movies and documentaries about those cases should be emphasized, because attitudes can be influenced through exposure to mass-media messages, particularly via television. As shown in the survey by Schiappa et al. regarding the influence of television series on attitudes about death, the application of mass-media can be useful in raising awareness and fuelling class discussions<sup>36</sup> in death education courses.

The issue of the quality of life, which should be analyzed in combination with the issue of the quality of the dying process and the idea of death with dignity, was analyzed regarding the principle of autonomy as a framework for the doctrine of informed consent<sup>25</sup>, taking into account that only well-informed patients, capable of decision-making (i.e. mentally aware at the end of life), can make competent end-of-life decisions. Therefore, the book on autonomy in old age by Agich<sup>24</sup>, and papers on factors considered important at the end of life by Steinhauser et al.<sup>37</sup> and Singer et al.<sup>38</sup>, were used. The concept of death with dignity vs. medical futility was approached in the context of orthothanasia, i.e. death in its own time, which is closely connected with the philosophy of palliative care. Therefore, books and booklets such as »Dysthanasia – until when to prolong life?« by Pessini<sup>39</sup> and »Palliative medicine/care and the bioethics of dying« by Jušić<sup>40</sup> were used. A detailed analysis of several codes of medicine and deontology was also included with special emphasis on the issue of prohibiting physicians from imposing their personal ideas of the quality of life on their patients, as, for example, in the European<sup>41</sup> or Croatian<sup>42</sup> codes of medical ethics.

The only finding that was more negative following the bioethics education course involved the legalization of euthanasia in Croatia. This result might be explained through the analysis of facts and arguments presented in booklets and papers on the legalization of euthanasia in the Netherlands, one of the states in which euthanasia is legal. The booklet »Is there a culture of death in the Netherlands?« by Cohen-Almagor<sup>43</sup> offered our students a notion of some concrete issues on the place and role of physicians and other health-care professionals in the

process of active life-ending. Onwuteaka-Philipsen et al.<sup>44</sup> showed a change of attitude among Dutch physicians whose attitude towards euthanasia became more restrictive during the follow-up period of 10 years. During seminars students reported concerns about the possibility of misuse of the law on euthanasia, and a strong need for precise judiciary measures to prevent manipulation of end-of-life decisions. Hence, it can be concluded that our students thought that the Croatian health-care system as well as its societal context was not yet ready for the legalization of euthanasia given the problems discussed in the course.

### *Limitations of the study*

Our particular choice of literature used in the bioethics education course, besides inducing change in students' attitudes towards death and dying, may also account for our study's limitations. Namely, we may have influenced the shift of attitude towards a more liberal, permissive perception of euthanasia by the very use of the particular texts and documentaries we employed in the course. However, we did attempt to balance our course materials taking into account that some of them tended to elicit a more liberal attitude towards death and dying (i.e. the cases of Diana Pretty or Terri Schiavo<sup>34,35</sup>), and some others a more conservative one (i.e. the Code of medical ethics and deontology of the Croatian Medical Association<sup>42</sup>, or the paper by Onwuteaka-Philipsen et al.<sup>44</sup>). Yet, the objectivity of our obtained results could still be challenged. Another limitation to our study lies in the fact that the second measurement was carried out immediately upon the end of the summer term. Therefore, our results could reflect the propensity of our subjects to give socially desirable answers. It might have been useful to assess the biases of the lecturers themselves.

As regards the questionnaire, adding the possibility of a free answer to the scale makes it more complicated for statistical analysis, but it was assumed that this free expression of students' opinions might serve for the improvement of questionnaire before repeating the survey. The Likert scale of only three degrees was suggested by students who took part in the pilot study. Their suggestion was to transform the scale of five degrees (with the addition of the possibility of a free answer) into a scale of three degrees, because of the lessened possibility of error while completing the questionnaire. The students' suggestions were taken into consideration. In addition, several studies have shown that a three degree Likert scale does not compromise the scale reliability<sup>45,46</sup>.

It would be interesting to assess *attitude towards euthanasia* of our students after entering the clinic, as well as at the conclusion of their studies, i.e. just before graduation. Therefore, we plan a follow-up attitude survey for our sample for the academic years 2006/2007 and 2008/2009, and we intend to compare these findings with data on attitude towards euthanasia from 1<sup>st</sup>-year medical students. These students, due to the change in the curriculum at the state level since the academic year

2005/2006, do not take the course »Medical Ethics and Bioethics«. This subject has been moved to the last (6<sup>th</sup>) year of the curriculum.

## Conclusion

Our findings suggest that religion and place of residence influence *attitude towards euthanasia* before the educational intervention, but no differences were found after. Death education carried out through the »Rijeka model« of bioethics education was shown to shape a more

positive perception of euthanasia. We could, therefore, say that death education might help us to structure experiences gathered from theory and/or practice, and to enable one to better face one's own death or the death of another. Finally, death education carried through the »Rijeka model« addressed moral decisions about both life and death of future physicians and related health-care professionals; hence, a concrete need for the implementation of death education for medical students and associated professions at the schools of medicine in Croatia is strongly suggested.

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## **UTJECAJ »RIJEČKOG MODELA« BIOETIČKE EDUKACIJE NA STAVOVE STUDENATA MEDICINE PREMA SMRTI I UMIRANJU – PRESJEČNO ISTRAŽIVANJE**

### **S A Ž E T A K**

Cilj je ovog rada ustvrditi stav prema eutanaziji studenata prve godine studija medicine Medicinskog fakulteta Sveučilišta u Rijeci (Hrvatska), te utjecaj sociodemografskih osobina i edukacije o smrti provedene kroz »Riječki model« bioetičke edukacije. Presječno istraživanje provedeno je u akademskoj godini 2003/2004. 124 studenta (61% žene) ispitana su anonimnim upitnikom prije i nakon edukacije. Katolici ( $p=0.003$ ) i studenti iz mjesta stalnog boravka s manje od 50,000 stanovnika ( $p=0.001$ ) prije edukacije imaju značajno negativniji stav prema eutanaziji od ostalih studenata, dok nakon edukacije nema razlike u stavu. Stav prema eutanaziji značajno je pozitivniji nakon edukacije ( $p=0.005$ ). Mjera stava prema eutanaziji pozitivnija je za sve čestice osim za »Trebalo bi legalizirati eutanaziju u Hrvatskoj«. Edukacija o smrti provedena putem »Riječkog modela« bioetičke edukacije promijenila je stav studenata medicine prema pozitivnijoj percepciji eutanazije.