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Bioethics Education in Western Romania

Antoanela Naaji

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Abstract: *In recent decades, the study of bioethics has widely spread all over the world, especially in medical schools. In Romania, Bioethics was introduced later and there are no comprehensive studies on its impact on medical practice and biomedical research. The aim of this research is to evaluate how the utility and relevance of bioethics courses is perceived within specialized academic programs in western Romania. As methodology, a questionnaire was created and applied to 154 respondents, from 4 counties of western Romania. The data obtained was collected and processed using simple statistic tools and the SPSS (Statistical Package for the Social Sciences) program. We measured simple distributions, different correlations, based on calculation of* r *and* p *coefficients, cross-tabulations, and the results were analysed, some correlations being established.*

Keywords: *bioethics; education; research ethics; basic principles; ethical guidelines; ethical codes; informed consent; research integrity; human subjects.*

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Bioethics Education in Western Romania

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Introduction

In the past decades, the study of bioethics has widely spread in medical schools across the United States. Most European universities also offer such courses, some of them on graduate and postgraduate levels. This is largely due to the increased complexity of new technologies and procedures used in biomedical research and healthcare. Issues such as the human genome, cloning, organ transplants, patenting of human tissue products, are only few examples.

Nowadays, biomedical researchers and physicians are more concerned with respecting the ethical principles which provide guidance in resolving ethical issues, while adapted to real situations. The codes and standards are those which provide a common set of principles and standards on which they build their professional and scientific work. However, researchers in the biomedical field and doctors should consider less visible ethical issues such as: ensuring patient self-determination and proper informed consent for medical procedures, end-of-life decision making, research ethics, reproductive medicine, and managed care and related economic issues [1]. For this reason, bioethics education for medical practice and research is essential and students and other professionals in the field need education on ethical issues and laws. Some arguments are: the legislation related to medical policies and patient rights is changing or is being updated very often; due to the achievements in biotechnologies and ICT field, healthcare systems function differently than before; clinical practice now involves decision-making on more complex and new issues, etc.

In Romania, Bioethics was introduced in the programmes of medical schools in the early 2000s. Being a new discipline, there are no comprehensive studies on its impact on medical practice and biomedical research.

The aim of this research is to evaluate how the utility and relevance of

bioethics courses is perceived within specialized academic programs, and also as a branch of biomedical sciences, in western Romania. Considering the increase of bioethical education on international level, it is important to evaluate its weight within biomedical programmes and also to set the strategic directions and measures which have to be taken in order to improve bioethical education in Romania.

This study is presented as a necessity, due to the fact that bioethics is a fairly new subject in biomedical education and there are no related studies conducted in Romania. In the future, the study could be extended to the whole country.

For this purpose, a questionnaire was created and applied to 154 respondents, mainly students, teaching staff and biomedical specialists from 4 counties in western Romania. The questionnaire had 16 questions and a note which assured the respondents that the principle of confidentiality was respected even if the person could not be identified from the requested data.

Methodology

This section on methodology presents the method used for collecting data, the number of respondents, how the data was analysed, and what statistical tools were used.

The study was conducted using a questionnaire applied on the focus group made of 154 respondents from 4 counties in Western Romania. 63.6% of the respondents were students and 36.4% were specialists in the biomedical field, meaning residents, physicians, teachers, researchers, etc. in the biomedical field. They were divided by age in six ranges and five levels of education.

The questionnaire was applied in two forms: printed and through Google docs. The data extracted from printed forms were manually introduced in Google docs and in the end all data were collected in an Excel file. The statistical analysis of results was done using simple tools and also the SPSS program [2], [3]. All the results were discussed in accordance with the objectives of the research in order to evaluate the current situation of Bioethics education in western Romania and to extract some ideas of improvement and development in this field. The conclusions were extracted in accordance with the aim of the research.

Description of the questionnaire

The questionnaire was created based on international literature ([4], [5], [6]) and also considering the specificity of Romania [7]. It contains the following main parts: personal data, the situation of Bioethics studies completed by respondents, respondents' opinion on teaching Bioethics and the existing legislation. In total, there are 16 questions among which 11 are single-choice, 2

multiple-choice, 1 based on Likert-type scale, and 2 free-response questions. The addressed topics which have to be studied as part of Bioethics were also identified. The proposed questions were:

1. In which county are you studying/working?
2. Your age range is: *from 25 to over 65 years old* (6 options)
3. The last completed level of education is: *from high school to postdoctoral studies* (7 options)
4. Your current field of study/activity is: (3 options)
5. Your professional status is: (2 options)
6. Do you consider the study of Bioethics to be relevant to your activity in the biomedical field: *from extremely important to no opinion* (5 options)
7. During your training, did you study Bioethics? (2 options)
8. In which year of study do you think Bioethics should be taught: *from I to VI and every year* (7 options)
9. How many lectures or seminars do you think should be devoted to the subject of Bioethics? *From not at all to more than 4* (5 options)
10. Which of the following topics have you studied as part of Bioethics? (23 options)
11. Which of the topics below are important in the study of Bioethics? (23 options, scale from 1 to 5)
12. Which are, from your point of view, the most important advantages of studying Bioethics? List at least three advantages.
13. Do you face ethical challenges in your professional activity? (2 options)
14. Do you consider that what you have learned from studying Bioethics has been useful in your daily practice? (2 options)
15. Do you consider that bioethical issues are sufficiently covered by legislation in Romania? (3 options)
16. What are your suggestions on improving the legislative framework in the field of Bioethics?

Some of the questions refer to most important topics in the field of Bioethics, starting from philosophical justification and basic principles to more practical topics connected to real situations encountered in the healthcare system and n clinical research. The addressed topics were:

- basic principles of medical ethics;
- duty to provide care;
- fiduciary responsibility to patients;
- truth telling;
- informed consent;
- confidentiality;

- history of medical ethics;
- history of research ethics;
- philosophical justification of ethics;
- research ethics codes, declarations, and ethical guidelines regarding the ethical conduct of human subject research;
- justification of human participation in biomedical research;
- the ethics of clinical studies and trials design and conduct;
- the nature and scope of informed consent for trial participation;
- the concept of equipoise and its utility in the ethical justification of randomized and placebo-controlled, and standard care-controlled trials;
- issues regarding confidentiality and privacy in clinical research;
- inducements for research;
- populations in research ethics: the use of healthy and vulnerable (children, prisoners, mentally ill, etc.) subjects;
- research on biospecimens, foetuses, embryos and stem cells;
- use of animals in research;
- ethics of national and international public health;
- the organization and management of ethical committees or IRBs (institutional review boards);
- professionalism and the responsible conduct of research (the dissemination and publication of research results, intellectual property, etc.).

Statistical results and analysis

The data obtained from the questionnaire was collected in an excel file and the statistic calculations were done using simple statistic tools and the SPSS program. We measured simple distributions, different correlations, based on calculation of r and p coefficients, and cross-tabulations. Some of the presented results are: distribution by age, distribution by the last completed level of education, the relevance of studying Bioethics, the most studied subjects, the advantages of studying Bioethics, etc. Figures 1 and 2 show the results regarding the distribution of the focus group based on personal data (age) and the situation of Bioethics studies completed by respondents. Figures 3 - 5 and Tables 1 and 2 present the respondents' opinion about teaching Bioethics.

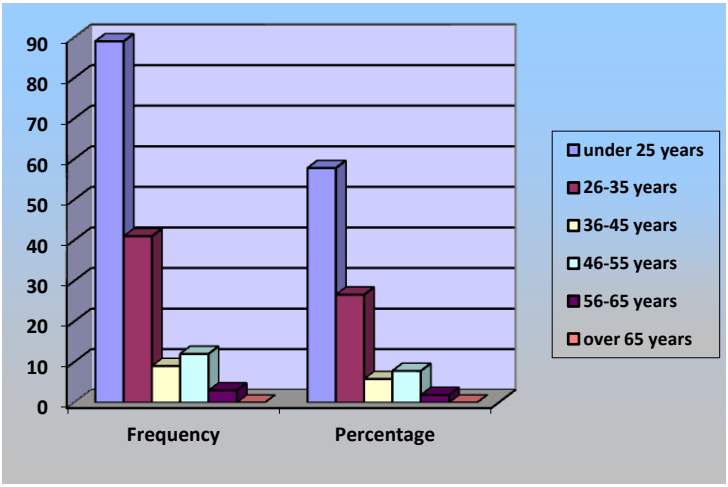

Fig.1. Distribution on age

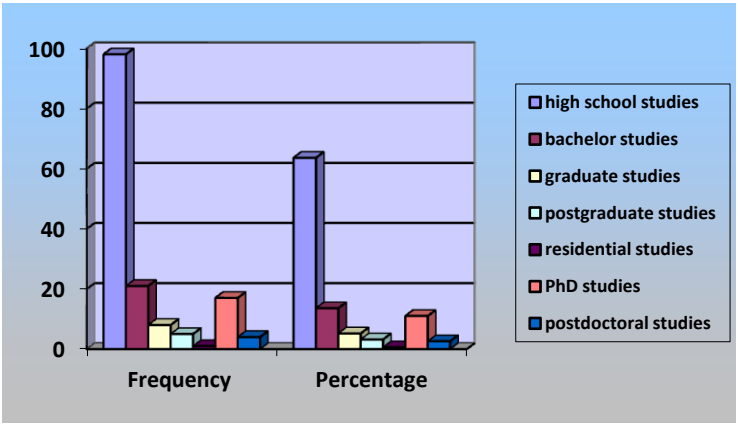

Fig. 2. Distribution on the last completed level of education

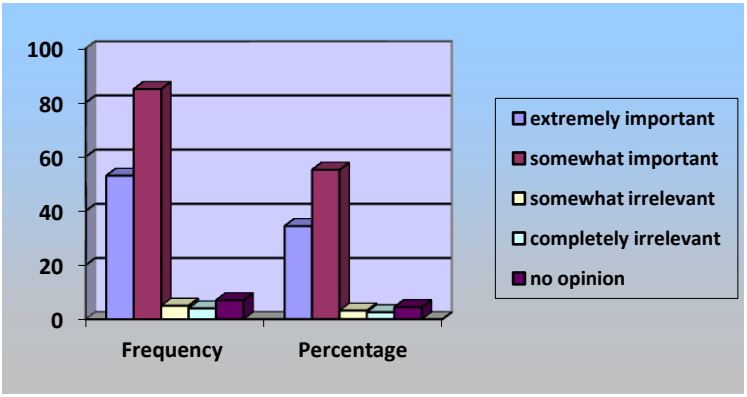

Fig. 3. The relevance of studying Bioethics

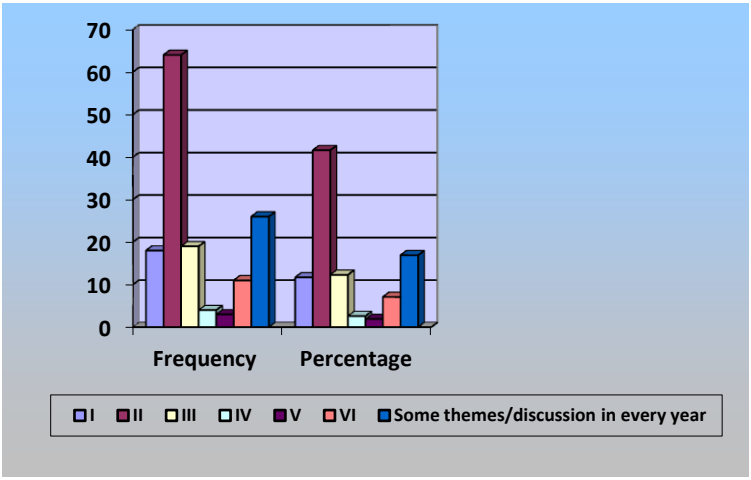

Fig. 4. The proper year to study Bioethics

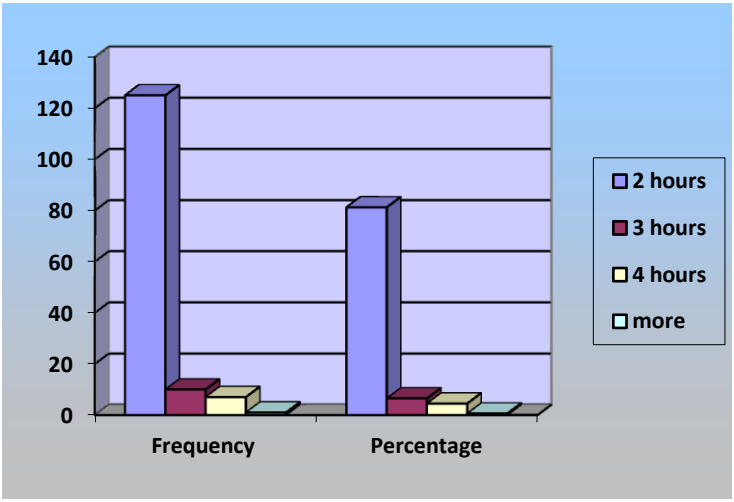

Fig. 5. Recommended number of hours/week

The results also show that 89.6% from subjects studied Bioethics and 85.7% faced ethical challenges in their professional activities.

The most studied subjects are presented in Table 1. The minimum points obtained were 32 points and the maximum 145. It can be noticed that there is a large difference between a group of subjects referring to day to day practice and another group which contains more theoretical or philosophical subjects.

Table 1. The most studied subjects

Subjects	No. of answers
Confidentiality	145
Basic principles of medical ethics	128
Truth telling	113
Informed consent	107
Duty to provide care	95
Fiduciary responsibility to patients	86
Research ethics codes, declarations, and ethical guidelines regarding the ethical conduct of human subject research	77
Issues regarding confidentiality and privacy in clinical research	75
Ethics of national and international public health	75
History of medical ethics	66
Professionalism and the responsible conduct of research (the dissemination and publication of research results, intellectual property, etc.)	64
The nature and scope of informed consent for trial participation	62
The ethics of clinical studies and trials design and conduct	59
Populations in research ethics: the use of healthy and vulnerable (children, prisoners, mentally ill, etc.) subjects	59
The concept of equipoise and its utility in the ethical justification of randomized and placebo-controlled, and standard care-controlled trials	53
Justification of human participation in biomedical research	52

Table 2 presents the respondents' opinion on the importance of the topics. The table presents only the topics considered most important (the mean/answer varies from 4.4416 to 3.0714).

Table 2. The importance of studied topics

The subject ordinated on importance	Mean/answer
Informed consent	4.4416
Confidentiality	4.4156
Truth telling	4.3636
Fiduciary responsibility to patients	4.3442
Duty to provide care	4.3182
Basic principles of medical ethics	4.2857
Professionalism and the responsible conduct of research (the dissemination and publication of research results, intellectual	4.2338

property, etc.)	
Issues regarding confidentiality and privacy in clinical research	4.1234
The nature and scope of informed consent for trial participation	4.0260
The ethics of clinical studies and trials design and conduct	3.9610
Ethics of national and international public health	3.9545
Research on biospecimens, fetuses, embryos and stem cells	3.9351
Justification of human participation in biomedical research	3.8896
The concept of equipoise and its utility in the ethical justification of randomized and placebo-controlled, and standard care-controlled trials	3.8896
Populations in research ethics: the use of healthy and vulnerable (children, prisoners, mentally ill, etc.) subjects	3.8896

The results also point out that 83.8% of respondents consider that studying Bioethics has been useful in daily practice, but only some of them identified these advantages in their answers. Some of the advantages of studying Bioethics, both for research and practice in respondents' opinion are:

- Research ethics:
  - Integrity of research (13 answers);
  - Confidentiality in research studies on human subjects (3 answers);
  - Engaging liability for consequences of medical acts performed on patients/participants in clinical studies (2 answers);
  - Ethics of utilizing human subjects in research (2 answers).
- Practice ethics:
  - Ensuring privacy (33 answers);
  - Truth telling (19 answers);
  - Informed consent (informed and assumed decisions) (16 answers);
  - Ethical approach to permanent medical acts (16 answers);
  - Improving of professional relations (14 answers);
  - Duty to provide care and help (9 answers).

It can be noticed that the respondents had opinions on this subject, especially related to bioethics in practice. This is normal because most of them are coming from clinics, universities (students and teaching stuff) and they are less connected with research.

The last part of the questionnaire refers to legislation (Figure 6). Only a small percentage of the respondents (14.9%) consider that the actual legislation is adequate and up to date.

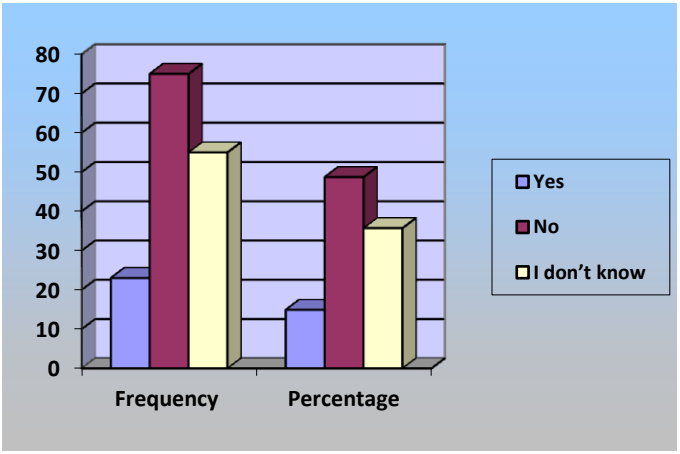

Fig. 6. Opinions about legislation in the field

Some suggestions for improvement are:

- Adopting guidelines and internal regulations on ethical aspects of biomedical research;
- Promoting integrity in research;
- Clear legislation on the act of donating one's body post mortem in order to be studied in higher education institutions;
- "I believe it is necessary to create a distinct branch of law: Medical Law. Integrating bioethics in the legislative system thus appears as a necessity."
- There should be a much more drastic law on verbal or other abuse perpetrated by patients against physicians and nurses;
- Clear and transparent laws implemented to promote ethics in medical universities.

Discussions

In this section, the results are analysed and some correlations are established in order to have a clear overview on the situation of studying Bioethics in Romania. Also, no statistically-significant relationships are mentioned. The following correlations were made:

The relationship between the age of the subjects and the studies in Bioethics (Table 3)

Table 3. The correlation between the age of subjects and the studies in Bioethics

Correlations			
		Your age range is:	During your training, did you study Bioethics?
Your age range is:	Pearson Correlation	1	.523**
	Sig. (2-tailed)		.000
	N	154	153
During your training, did you study Bioethics?	Pearson Correlation	.523**	1
	Sig. (2-tailed)	.000	
	N	153	153
**. Correlation is significant at the 0.01 level (2-tailed).			

We notice that there is a statistically-significant relationship between the age of subjects and the study of Bioethics ($r = 0.523$, $p = 0.000$), with younger subjects general studying more Bioethics. The strength of association between variables is $r^2 = 0.27$, indicating a strong effect.

The relationship between the age of subjects and the relevance of the study of Bioethics (Table 4)

Table 3. The correlation between the age of subjects and the relevance of the study of Bioethics

Correlations			
		Your age range is:	Do you consider the study of Bioethics to be relevant to your activity in the biomedical field?
Your age range is:	Pearson Correlation	1	-.177*
	Sig. (2-tailed)		.029
	N	154	154
Do you consider the	Pearson Correlation	-.177*	1

study of Bioethics to be relevant to your activity in the biomedical field?	Sig. (2-tailed)	.029	
	N	154	154
*. Correlation is significant at the 0.05 level (2-tailed).			

We notice that the relationship is statistically significant, since r = -0.177, p=0.029. Which presupposes that there is a relationship between the chronological age of research subjects and the relevance of studying Bioethics for the subjects' activity, namely, the older the subjects are, the more they believe the study of bioethics is relevant for their activity. However, the strength of association between the two variables is low, $r^2 = 0.03$.

The relationship between the level of studies and the study of Bioethics (Table 5)

Table 5. The correlation between the level of studies and the study in Bioethics

Correlations			
		The last completed level of education is:	During your training, did you study Bioethics?
The last completed level of education is:	Pearson Correlation	1	.446**
	Sig. (2-tailed)		.000
	N	154	153
During your training, did you study Bioethics?	Pearson Correlation	.446**	1
	Sig. (2-tailed)	.000	
	N	153	153
**. Correlation is significant at the 0.01 level (2-tailed).			

We notice that there is a statistically-significant relationship (r = 0.446, p = 0.00) between the level of studies and the study of Bioethics. The strength of association between the two variables is high, r2 = 0.19. Cross tabulation (Q3, Q7) shows that the tendency to study Bioethics pertains especially to undergraduate students, but also that from the total of 153 respondents, only 15 did not study bioethics as part of their professional training.

The relationship between professional status and the study of Bioethics (student/specialist comparison) (Table 6 a, b)

Table 6. The correlation between professional status and the study of Bioethics

a. Group Statistics					
	Your professional status is:	N	Mean	Std. Deviation	Std. Error Mean
During your training, did you study Bioethics?	student	111	1.0180	.13362	.01268
	specialist	42	1.3095	.46790	.07220

We notice that according to the data, there are statistically-significant differences between the study of Bioethics in students and in current specialists, t (151) = - 5.978, p = 0.00. Out of the averages, we see that current students studied Bioethics more than current specialists. Out of the averages expressed in Table 6.a. one can see that current students studied Bioethics more than current specialists. (As for the item "Did you study Bioethics as part of your training:" we rated responses 1=yes and 2=no).

b. Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
During your training, did you study Bioethics?	Equal variances assumed	226.114	.000	-5.978	151	.000	-.29151	.04876	-.38785	-.19516
	Equal variances not assumed			-3.977	43.554	.000	-.29151	.07330	-.43928	-.14373

The relationship between the current field of work and the benefits of studying Bioethics (Table 7)

Table 7. The correlation between the current field of work and the benefits of studying Bioethics

		Your current field of study/activity is:* Do you consider that the theoretical knowledge gained from the study of Bioethics bring substantial benefits in your daily practice: **Cross tabulation**				
		Count				
		Do you consider that the theoretical knowledge gained from the study of bioethics brings benefits in your daily process?				Total
		yes		no		
Your current field of study/activity is:	Medicine	84,5%	120	15,5%	22	142
	Biology	83,3%	5	16,7%	1	6
	Biomedical	80%	4	20%	1	5
Total			129		24	153

We notice that for most subjects theoretical knowledge obtained as a result of studying bioethics brings substantial benefits in their daily activity.

F. The relationship between professional status and the evaluation of legislative regulation of Bioethics in Romania (Table 8)

Table 8. The correlation between professional status and the evaluation of legislative regulations of Bioethics in Romania

Your professional status is: * Do you consider that bioethical issues are sufficiently covered by legislation in Romania: **Cross tabulation**					
Count					
		Do you consider that bioethical issues are sufficiently covered by legislation in Romania:			Total
		yes	no	I do not know	
Your professional status is:	student	17 (15.31%)	54 (48.64%)	40 (36.03%)	111
	specialist	6 (14.28%)	21 (50%)	15 (35.71%)	42
Total		23 (15.03%)	75 (49.01%)	55 (35.94%)	153

The table shows that, regardless of professional status, most subjects believe that aspects concerning Bioethics are not sufficiently regulated in Romanian legislation.

The analysis of the results established that there are no statistically-significant relationships between:

- the field of work and the study of Bioethics ($r = -0.031$, $p = 0.701$).
- the age of subjects and facing ethical challenges ($r = 0.50$, $p = 0.541$).
- the field of work and facing ethical challenges ($r = 0.80$, $p = 0.324$).
- professional status and facing ethical challenges ($r = 0.35$, $p = 0.662$).

Conclusions

Bioethics is a relatively new field in education, but universities have taken some steps to introduce this subject into their curricula, especially in Medicine (and to a lesser extent in Biology). Topics seen as more important are those that have more to do with the medical practice and less with research or theoretical issues.

Studying Bioethics is considered highly important by almost all respondents even if the existing legislation requires some improvements and actual implementation.

Considering the respondents' opinions on its importance, Bioethics seems to be a "promising subject" in Romania which needs to be taught in all universities. In order to provide medical care in an ethical way, students and specialists in biomedicine should be better educated on specific aspects of the ethical medical practice and research. The best ways to accomplish this goal is to extend the Bioethics education for medical students and resident physicians, and also through continuing education for practicing doctors and researchers.

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Introduction

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10. Which of the following topics have you studied as part of Bioethics? (23 options)
11. Which of the topics below are important in the study of Bioethics? (23 options, scale from 1 to 5)
12. Which are, from your point of view, the most important advantages of studying Bioethics? List at least three advantages.
13. Do you face ethical challenges in your professional activity? (2 options)
14. Do you consider that what you have learned from studying Bioethics has been useful in your daily practice? (2 options)
15. Do you consider that bioethical issues are sufficiently covered by legislation in Romania? (3 options)
16. What are your suggestions on improving the legislative framework in the field of Bioethics?

Some of the questions refer to most important topics in the field of Bioethics, starting from philosophical justification and basic principles to more practical topics connected to real situations encountered in the healthcare system and n clinical research. The addressed topics were:

- basic principles of medical ethics;
- duty to provide care;
- fiduciary responsibility to patients;
- truth telling;
- informed consent;
- confidentiality;

- history of medical ethics;
- history of research ethics;
- philosophical justification of ethics;
- research ethics codes, declarations, and ethical guidelines regarding the ethical conduct of human subject research;
- justification of human participation in biomedical research;
- the ethics of clinical studies and trials design and conduct;
- the nature and scope of informed consent for trial participation;
- the concept of equipoise and its utility in the ethical justification of randomized and placebo-controlled, and standard care-controlled trials;
- issues regarding confidentiality and privacy in clinical research;
- inducements for research;
- populations in research ethics: the use of healthy and vulnerable (children, prisoners, mentally ill, etc.) subjects;
- research on biospecimens, foetuses, embryos and stem cells;
- use of animals in research;
- ethics of national and international public health;
- the organization and management of ethical committees or IRBs (institutional review boards);
- professionalism and the responsible conduct of research (the dissemination and publication of research results, intellectual property, etc.).

Statistical results and analysis

The data obtained from the questionnaire was collected in an excel file and the statistic calculations were done using simple statistic tools and the SPSS program. We measured simple distributions, different correlations, based on calculation of r and p coefficients, and cross-tabulations. Some of the presented results are: distribution by age, distribution by the last completed level of education, the relevance of studying Bioethics, the most studied subjects, the advantages of studying Bioethics, etc. Figures 1 and 2 show the results regarding the distribution of the focus group based on personal data (age) and the situation of Bioethics studies completed by respondents. Figures 3 - 5 and Tables 1 and 2 present the respondents' opinion about teaching Bioethics.

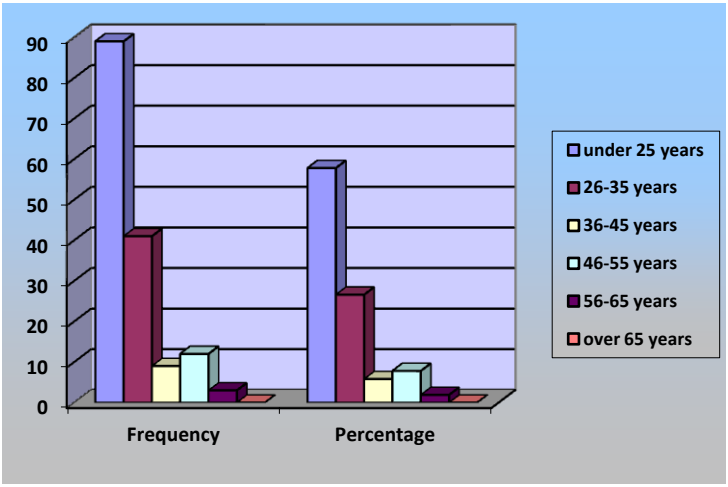

Fig.1. Distribution on age

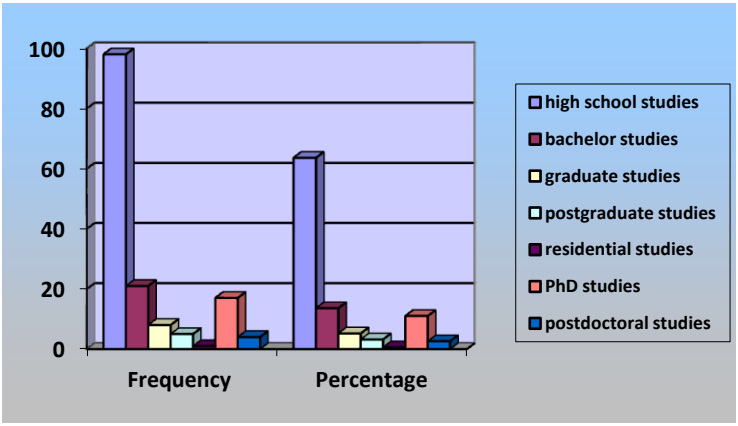

Fig. 2. Distribution on the last completed level of education

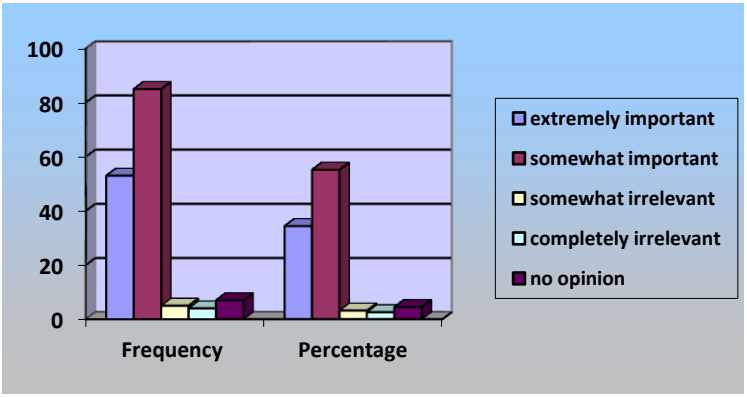

Fig. 3. The relevance of studying Bioethics

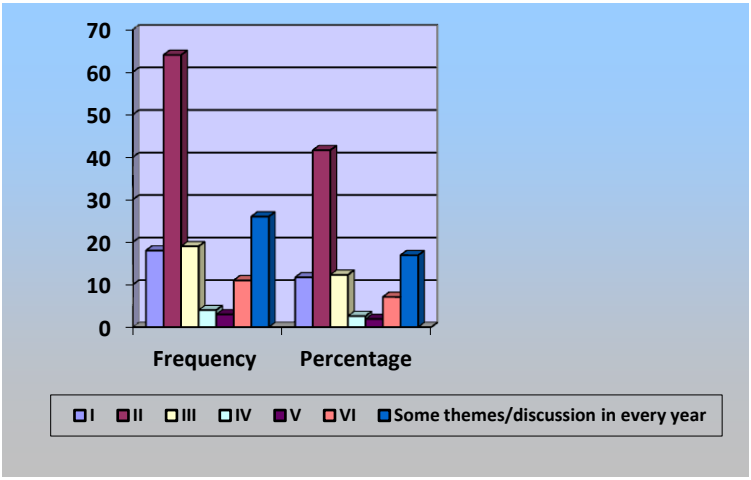

Fig. 4. The proper year to study Bioethics

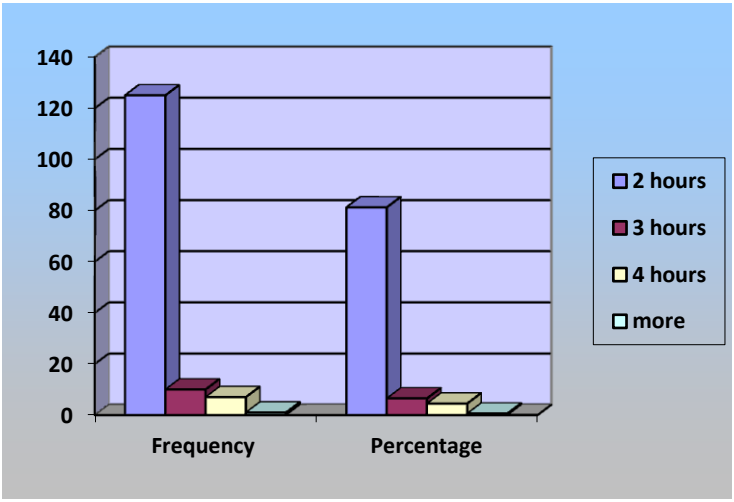

Fig. 5. Recommended number of hours/week

The results also show that 89.6% from subjects studied Bioethics and 85.7% faced ethical challenges in their professional activities.

The most studied subjects are presented in Table 1. The minimum points obtained were 32 points and the maximum 145. It can be noticed that there is a large difference between a group of subjects referring to day to day practice and another group which contains more theoretical or philosophical subjects.

Table 1. The most studied subjects

Subjects	No. of answers
Confidentiality	145
Basic principles of medical ethics	128
Truth telling	113
Informed consent	107
Duty to provide care	95
Fiduciary responsibility to patients	86
Research ethics codes, declarations, and ethical guidelines regarding the ethical conduct of human subject research	77
Issues regarding confidentiality and privacy in clinical research	75
Ethics of national and international public health	75
History of medical ethics	66
Professionalism and the responsible conduct of research (the dissemination and publication of research results, intellectual property, etc.)	64
The nature and scope of informed consent for trial participation	62
The ethics of clinical studies and trials design and conduct	59
Populations in research ethics: the use of healthy and vulnerable (children, prisoners, mentally ill, etc.) subjects	59
The concept of equipoise and its utility in the ethical justification of randomized and placebo-controlled, and standard care-controlled trials	53
Justification of human participation in biomedical research	52

Table 2 presents the respondents' opinion on the importance of the topics. The table presents only the topics considered most important (the mean/answer varies from 4.4416 to 3.0714).

Table 2. The importance of studied topics

The subject ordinated on importance	Mean/answer
Informed consent	4.4416
Confidentiality	4.4156
Truth telling	4.3636
Fiduciary responsibility to patients	4.3442
Duty to provide care	4.3182
Basic principles of medical ethics	4.2857
Professionalism and the responsible conduct of research (the dissemination and publication of research results, intellectual	4.2338

property, etc.)	
Issues regarding confidentiality and privacy in clinical research	4.1234
The nature and scope of informed consent for trial participation	4.0260
The ethics of clinical studies and trials design and conduct	3.9610
Ethics of national and international public health	3.9545
Research on biospecimens, fetuses, embryos and stem cells	3.9351
Justification of human participation in biomedical research	3.8896
The concept of equipoise and its utility in the ethical justification of randomized and placebo-controlled, and standard care-controlled trials	3.8896
Populations in research ethics: the use of healthy and vulnerable (children, prisoners, mentally ill, etc.) subjects	3.8896

The results also point out that 83.8% of respondents consider that studying Bioethics has been useful in daily practice, but only some of them identified these advantages in their answers. Some of the advantages of studying Bioethics, both for research and practice in respondents' opinion are:

- Research ethics:
  - Integrity of research (13 answers);
  - Confidentiality in research studies on human subjects (3 answers);
  - Engaging liability for consequences of medical acts performed on patients/participants in clinical studies (2 answers);
  - Ethics of utilizing human subjects in research (2 answers).
- Practice ethics:
  - Ensuring privacy (33 answers);
  - Truth telling (19 answers);
  - Informed consent (informed and assumed decisions) (16 answers);
  - Ethical approach to permanent medical acts (16 answers);
  - Improving of professional relations (14 answers);
  - Duty to provide care and help (9 answers).

It can be noticed that the respondents had opinions on this subject, especially related to bioethics in practice. This is normal because most of them are coming from clinics, universities (students and teaching stuff) and they are less connected with research.

The last part of the questionnaire refers to legislation (Figure 6). Only a small percentage of the respondents (14.9%) consider that the actual legislation is adequate and up to date.

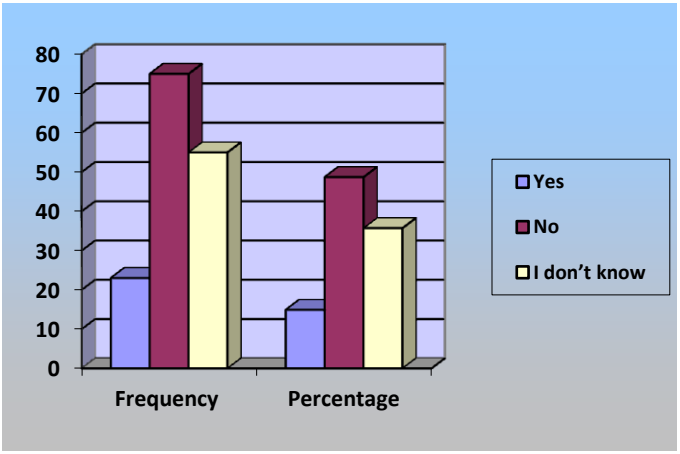

Fig. 6. Opinions about legislation in the field

Some suggestions for improvement are:

- Adopting guidelines and internal regulations on ethical aspects of biomedical research;
- Promoting integrity in research;
- Clear legislation on the act of donating one's body post mortem in order to be studied in higher education institutions;
- "I believe it is necessary to create a distinct branch of law: Medical Law. Integrating bioethics in the legislative system thus appears as a necessity."
- There should be a much more drastic law on verbal or other abuse perpetrated by patients against physicians and nurses;
- Clear and transparent laws implemented to promote ethics in medical universities.

Discussions

In this section, the results are analysed and some correlations are established in order to have a clear overview on the situation of studying Bioethics in Romania. Also, no statistically-significant relationships are mentioned. The following correlations were made:

The relationship between the age of the subjects and the studies in Bioethics (Table 3)

Table 3. The correlation between the age of subjects and the studies in Bioethics

Correlations			
		Your age range is:	During your training, did you study Bioethics?
Your age range is:	Pearson Correlation	1	.523**
	Sig. (2-tailed)		.000
	N	154	153
During your training, did you study Bioethics?	Pearson Correlation	.523**	1
	Sig. (2-tailed)	.000	
	N	153	153
**. Correlation is significant at the 0.01 level (2-tailed).			

We notice that there is a statistically-significant relationship between the age of subjects and the study of Bioethics ($r = 0.523$, $p = 0.000$), with younger subjects general studying more Bioethics. The strength of association between variables is $r^2 = 0.27$, indicating a strong effect.

The relationship between the age of subjects and the relevance of the study of Bioethics (Table 4)

Table 3. The correlation between the age of subjects and the relevance of the study of Bioethics

Correlations			
		Your age range is:	Do you consider the study of Bioethics to be relevant to your activity in the biomedical field?
Your age range is:	Pearson Correlation	1	-.177*
	Sig. (2-tailed)		.029
	N	154	154
Do you consider the	Pearson Correlation	-.177*	1

study of Bioethics to be relevant to your activity in the biomedical field?	Sig. (2-tailed)	.029	
	N	154	154
*. Correlation is significant at the 0.05 level (2-tailed).			

We notice that the relationship is statistically significant, since r = -0.177, p=0.029. Which presupposes that there is a relationship between the chronological age of research subjects and the relevance of studying Bioethics for the subjects' activity, namely, the older the subjects are, the more they believe the study of bioethics is relevant for their activity. However, the strength of association between the two variables is low, $r^2 = 0.03$.

The relationship between the level of studies and the study of Bioethics (Table 5)

Table 5. The correlation between the level of studies and the study in Bioethics

Correlations			
		The last completed level of education is:	During your training, did you study Bioethics?
The last completed level of education is:	Pearson Correlation	1	.446**
	Sig. (2-tailed)		.000
	N	154	153
During your training, did you study Bioethics?	Pearson Correlation	.446**	1
	Sig. (2-tailed)	.000	
	N	153	153
**. Correlation is significant at the 0.01 level (2-tailed).			

We notice that there is a statistically-significant relationship (r = 0.446, p = 0.00) between the level of studies and the study of Bioethics. The strength of association between the two variables is high, r2 = 0.19. Cross tabulation (Q3, Q7) shows that the tendency to study Bioethics pertains especially to undergraduate students, but also that from the total of 153 respondents, only 15 did not study bioethics as part of their professional training.

The relationship between professional status and the study of Bioethics (student/specialist comparison) (Table 6 a, b)

Table 6. The correlation between professional status and the study of Bioethics

a. Group Statistics					
	Your professional status is:	N	Mean	Std. Deviation	Std. Error Mean
During your training, did you study Bioethics?	student	111	1.0180	.13362	.01268
	specialist	42	1.3095	.46790	.07220

We notice that according to the data, there are statistically-significant differences between the study of Bioethics in students and in current specialists, t (151) = - 5.978, p = 0.00. Out of the averages, we see that current students studied Bioethics more than current specialists. Out of the averages expressed in Table 6.a. one can see that current students studied Bioethics more than current specialists. (As for the item "Did you study Bioethics as part of your training:" we rated responses 1=yes and 2=no).

b. Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
During your training, did you study Bioethics?	Equal variances assumed	226.114	.000	-5.978	151	.000	-.29151	.04876	-.38785	-.19516
	Equal variances not assumed			-3.977	43.554	.000	-.29151	.07330	-.43928	-.14373

The relationship between the current field of work and the benefits of studying Bioethics (Table 7)

Table 7. The correlation between the current field of work and the benefits of studying Bioethics

		Your current field of study/activity is:* Do you consider that the theoretical knowledge gained from the study of Bioethics bring substantial benefits in your daily practice: **Cross tabulation**				
		Count				
		Do you consider that the theoretical knowledge gained from the study of bioethics brings benefits in your daily process?				Total
		yes		no		
Your current field of study/activity is:	Medicine	84,5%	120	15,5%	22	142
	Biology	83,3%	5	16,7%	1	6
	Biomedical	80%	4	20%	1	5
Total			129		24	153

We notice that for most subjects theoretical knowledge obtained as a result of studying bioethics brings substantial benefits in their daily activity.

F. The relationship between professional status and the evaluation of legislative regulation of Bioethics in Romania (Table 8)

Table 8. The correlation between professional status and the evaluation of legislative regulations of Bioethics in Romania

Your professional status is: * Do you consider that bioethical issues are sufficiently covered by legislation in Romania: **Cross tabulation**					
Count					
		Do you consider that bioethical issues are sufficiently covered by legislation in Romania:			Total
		yes	no	I do not know	
Your professional status is:	student	17 (15.31%)	54 (48.64%)	40 (36.03%)	111
	specialist	6 (14.28%)	21 (50%)	15 (35.71%)	42
Total		23 (15.03%)	75 (49.01%)	55 (35.94%)	153

The table shows that, regardless of professional status, most subjects believe that aspects concerning Bioethics are not sufficiently regulated in Romanian legislation.

The analysis of the results established that there are no statistically-significant relationships between:

- the field of work and the study of Bioethics ($r = -0.031$, $p = 0.701$).
- the age of subjects and facing ethical challenges ($r = 0.50$, $p = 0.541$).
- the field of work and facing ethical challenges ($r = 0.80$, $p = 0.324$).
- professional status and facing ethical challenges ($r = 0.35$, $p = 0.662$).

Conclusions

Bioethics is a relatively new field in education, but universities have taken some steps to introduce this subject into their curricula, especially in Medicine (and to a lesser extent in Biology). Topics seen as more important are those that have more to do with the medical practice and less with research or theoretical issues.

Studying Bioethics is considered highly important by almost all respondents even if the existing legislation requires some improvements and actual implementation.

Considering the respondents' opinions on its importance, Bioethics seems to be a "promising subject" in Romania which needs to be taught in all universities. In order to provide medical care in an ethical way, students and specialists in biomedicine should be better educated on specific aspects of the ethical medical practice and research. The best ways to accomplish this goal is to extend the Bioethics education for medical students and resident physicians, and also through continuing education for practicing doctors and researchers.

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