

Reasons for the study of medicine and dental medicine in the first year students of the Faculty of medicine in Ljubljana

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Key words:

medical/dental students; the beginning of the study; empathic stance; helping people; the reasons for enrollment in medical/dental medicine

Cite as:

Zdrav Vestn. 2017;
86:286–94.

Received: 6. 12. 2016

Accepted: 25. 5. 2017

DOI 10.6016/
ZdravVestn.2468

Abstract

Aim: In addition to clinical knowledge, communication skills and sovereign decision-making, a good doctor is expected to possess professional values, including the ability to establish empathic relationships with patients.

The purpose of the study was to identify the reasons that lead first-year students of the Faculty of Medicine in Ljubljana to choose the study of (dental) medicine, and to determine the level of empathy in relation to the choice of study.

Methods: For the needs of the research we developed a questionnaire to collect basic data on students and their reasons for choosing the study of medicine or dental medicine using the modified 16-item Jefferson scale of empathy–version for students (JSE-S)). The questionnaire was administered to all 227 first-year students in the academic year 2014/15 at the end of the course »Communication«.

Results: The study involved a total of 216 students (response rate 95.2 %); of whom 158 medical students and 58 students of dental medicine. Among the reasons for admission to the Medical Faculty, »a desire to help people« was chosen by the highest proportion of medical students (85.3 %), »a desire to improve human health« was selected by 78.8 %, and »a desire to work with people« by 64.7 % of the respondents. The reason »because employment is guaranteed« was chosen by 28.8 % of medical students, while 14.1 % of them decided to study medicine »because it is well paid«.

The students of dental medicine most often indicated the following motives: »a desire to help people« (87.9 %), »a desire to improve human health« (74.1 %), followed by »a desire to work with people« (65.5 %). The argument »because employment is guaranteed« convinced 50 %, and the argument »because the pay is good« 46.6 % of the students.

Three statements were significantly associated with the self-assessed empathic stance: »because I want to help people« (91.08 ± 10.65 vs. 86.61 ± 12.56; p = 0.037) and »because I want to work with people« (91.82 ± 10.18 vs. 87.90 ± 12.11; p = 0.012) with a greater self-assessed empathic attitude, and »because the pay is good« (91.36 ± 11.41 vs. 87.29 ± 9.01; p = 0.023) with a lower self-assessed empathic stance.

Conclusion: Students who want to help people have higher self-assessed empathic stance. The task of a medical school is to ensure that students whose decision to study medicine is based on their humanistic values are encouraged to further develop these values and put them into practice during their study.

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1. Introduction

The empathic relationship of the doctor with the patient is reflected in better clinical outcomes and increased patient satisfaction. Patients treated by empathic physicians are known to have better medication compliance, and more confidence in their doctor, who explains the symptoms of the disease in greater detail; they rarely complain and generally express greater satisfaction with care (1). The term empathy is interpreted in different ways in the medical literature. The most well-known and widely accepted definition of empathy was advanced by Hojat and his colleagues from the Thomas Jefferson University in 2002. It says that empathy is a primarily cognitive (rather than emotional) property that includes an understanding (rather than feeling) of the patient's experiences, concerns and perspectives, and is also paired with the ability of communication and understanding. (2,3) It implies the sense of caring for others, the ability to identify other people's emotions, and in turn motivates a person to help, recognize thoughts and perceive feelings of other people and blur the boundaries between himself/herself and others (1).

The desire of every medical school is to enroll students who are distinguished by a high degree of empathy and who, through the educational process, have a positive impact on the development of empathic observations of medical students and future physicians.

The criteria for enrollment in a medical school vary across the world. Applicants for entry to the Oxford university are tested for their biomedical knowledge and interviewed by a tutor; they are asked to explain their decision for choosing the study programme (3). The desirable personal characteristics of medical

students include: empathy, motivation to work in medicine, communication skills, honesty and integrity, ethical awareness, ability to work in a team, ability to work intensively and to align individual values and behaviours with the values of the NHS constitution of England, which highlights work for the good of the patient, respect of propriety of any individual, an oath to quality care, compassion, a tendency to improve the health and well-being of individuals and the functioning of the good of the whole community, without exclusion and discrimination (4,5). Another important highlight is academic potential, such as problem solving, critical thinking, analytical approach, intellectual curiosity, and communication skills, such as the willingness and ability of clear and effective expression and the ability to listen (4).

The Faculty of Medicine in Ljubljana admits the most knowledgeable of students. Thirty-five percent of the total number of points required for entry to the Faculty of Medicine come from the scores of the college-prep leaving exam (matura), 20 % from the final grades of the last two years of secondary school and 45 % from scores of the following leaving exam (matura) subjects: mathematics, foreign language and a science subject (6-8). Skills that are important for being a good doctor, such as communication skills, ability to listen and establish an empathic relationship do not fall under the selection criteria. We do not know much about the reasons that lead students to decide to study medicine and about their level of empathy at the beginning of the study (9).

The purpose of the survey was to identify factors which motivate young and able students to study medicine or dentistry, and to find out which of these factors predict a greater degree of empathy.

2. Methods

2.1. Participants

All the first-year students of medicine and dental medicine, who were enrolled in the first year in the academic year 2014/15 were invited to participate. Of the 227 invited students, 216 participated in the survey (95.2 % response rate); 158 (73.1 %) of them were medical students and 58 (26.9 %) were students of dental medicine.

2.2. Study design

The survey questionnaire was filled out voluntarily and anonymously at the end of the »Communication« course between 26 November and 19 December 2014. The course is an integral part of the first year curriculum of medicine and dental medicine of the Faculty of Medicine in Ljubljana and is implemented jointly by the Department of Family Medicine and the Department of Psychiatry (10).

2.3. Tools used

The questionnaire consisted of two parts: a) questions on demographic data and b) questions relating to factors, based on the literature review and consensus between researchers that referred to reasons for choosing the study of medicine or dental medicine.

2.4. Description of the self-assessment scale of empathy

The first part of the survey contained a questionnaire on empathy- the Jefferson Scale of Empathy for medical students (JSE-S version), which had been translated and validated in Slovenia on a sample of

first-year students of medicine (11). The JSE-S comprised 20 questions on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree). Ten items had a positive and the other ten had a negative connotation. The total scale score was obtained by summing the values obtained for individual questions; for negative-connotation questions an inverse scale was used. The total score of the scale ranged from 20 to 140, a higher score indicating a higher degree of empathy.

The missing values in the scale of empathy were replaced by the average value of the population. Questions with more than one-third of responses missing were eliminated.

In 2015 the JSE-S scale was revalidated on a sample of the first- and sixth-year students of the Faculty of Medicine, University of Ljubljana, for two consecutive academic years (2012/13 and 2013/14). By narrowing down 20 items on the scale to 16 (omitting statements 1, 5, 18 and 19), we obtained a higher distribution of explained variance.(12) In our analysis, we used the revalidated JSE-S version.

2.5. Questionnaire on the reasons for the decision to study medicine or dental medicine

The second part of the questionnaire offered the students 14 factors elaborated on the basis of a literature review (13-15) and consensus between researchers, with the aim to help the students identify the reasons for studying medicine or dental medicine. A doctor and a psychologist participated in formulating the questionnaire. The final version of the questionnaire was approved by consensus.

The students were asked to choose multiple answers to close-ended questions; they were also offered the opportunity to write down other reasons for their decision in free text format.

Tabela 1: Basic information of the participants.

		Number (percentage)
Course of study	Medicine	158 (73.1 %)
	Dental medicine	58 (26.9 %)
Gender	Male	61 (28.2 %)
	Female	155 (71.8 %)

2.6. Statistical data analysis

The questionnaire was analysed using IBM SPSS Statistics Data Editor Version 22. Descriptive statistics was used to describe the features of the sample data, shares, average values and standard deviations (SD). The differences in positions between medical students and dental students were determined by using the t-test for two independent samples or the chi-square test (Pearson). The t-test for two independent samples was used for numerical determinants and the chi-square test was employed for binary determinants. The relationship between empathy and reasons for the study of medicine was determined using the chi-squared test. A p-value of < 0.05 threshold was considered statistically significant. The relationship between empathy and reasons for the study of medicine was determined using several tests (17 tests or a hypothesis), therefore a corrected

alpha level (Bonferroni) was used in the interpretation of results: $0.05/17 = 0.003$.

2.7. Ethical approval

The study (no. 143/02/11) was approved by the National Medical Ethics Committee of the Republic of Slovenia on 31. January 2011.

3. Results

3.1. Basic information of participating students

Table 1 shows the basic characteristics of the participating students, the gender and the course of study.

Descriptive statistics was used for the description of the sample

Table 2 compared the level of empathy by gender and field of study, using the revalidated Jefferson empathy sca-

Tabela 2: A comparison of the level of empathy by gender and field of study.

		Mean (SD = standard deviation)
Gender	Male	86.6 (SD = 11.2)
	Female	91.9 (SD = 10.6)
A statistically significant difference in favor of females ($p = 0.001$).		
Field of study	Medicine	90.9 (SD = 11.7)
	Dental medicine	89.4 (SD = 9.1)
The difference is not statistically significant ($p = 0.407$).		

le (JSE-S). Female students showed a greater degree of empathy than male students, but there was no difference as concerns the field of study.

The t-test for two independent samples was used.

Table 3 shows the reasons for the participants' decision to study medicine, separately for medical students and students of dental medicine. The chi-squared test was used to determine the differences between students of medicine and students of dental medicine.

The participants most often responded »because I want to help people.« The difference between medical students and students of dental medicine was not statistically significant ($p > 0.05$).

Students of dental medicine statistically significantly, with corrected alpha level ($p < 0.003$), more often responded »because my own experience (as a patient/student) encouraged me to decide to study medicine/dentistry« ($p = 0.001$), »because the profession of doctor/dentist provides professional independence« ($p < 0.001$) and »because it is well paid« ($p < 0.001$).

A statistically significant difference with a threshold $p < 0.05$ was found for the statement »because I am interested in research and exploration.« ($p = 0.031$), which was more often chosen by students of medicine, and for the statements »Because employment is guaranteed« ($p = 0.004$) and »because my parents

Tabela 3: Reasons for the decision to study medicine or dental medicine and differences between students of medicine and students of dental medicine.

Reasons	Percentage (%) of students, that answered YES (medicine and dental medicine) N = 216	Percentage (%) of students that answered YES (medicine) N = 158	Percentage (%) of students, that answered YES (dental medicine) N = 58	Differences between students of medicine and dental medicine (p-value)
Because I want to help people.	86.9	85.3	87.9	0.564
Because I had my own experience (as a patient/student) who encouraged me to decide to study medicine/dentistry.	45.3	38.5	63.8	0.001
Because I am interested in research and exploration.	43.0	47.4	31.0	0.031
Because the profession of doctor/dentist provides professional independence.	35.0	26.3	58.6	< 0.001
Because employment is guaranteed.	34.6	28.8	50.0	0.004
Because it is well paid.	22.9	14.1	46.6	< 0.001
Because my parents encouraged me to study medicine/dentistry.	13.6	10.3	22.4	0.021

encouraged me to study medicine/dentistry« ($p = 0.021$), which were more often chosen by students of dental medicine.

There was no statistically significant difference between students of medicine and students of dental medicine regarding the statements listed below ($p > 0.05$): »because I want to improve people's health by preventing and treating diseases«, »because I want to work with people«, »because study is an intellectual challenge«, »because medicine/dentistry offers linking theory with practice«, »because the profession of doctor/dentist is respected in the society«, »because my friends and family encouraged me to study medicine/dentistry«, »because my friends/acquaintances also decided to study medicine/dentistry«.

3.2. The relationship between the empathy level and the reasons for the decision to study medicine or dental medicine

We verified the association of each of the reasons for the decision to study medicine or dentistry with the degree of empathy. The following three statements were statistically significantly associated with the degree of empathy:

- »because I want to help people,« 91.08 ± 10.65 ; and 86.61 ± 12.56 for the respondents who did not select this reason; $p = 0.037$;
- »because I want to work with people« 91.82 ± 10.18 ; and 87.90 ± 12.11 for the respondents who did not select this reason; $p = 0.012$;
- »because it is well paid« 87.29 ± 9.01 ; and 91.36 ± 11.41 for the participants who did not select this response; $p = 0.023$.

4. Discussion

4.1. Summary of findings

The most important reason for enrolling in the medical school is the desire to help people and improve the health status of the population, which coincides with the level of empathy expressed by the interviewed students, the empathy level being higher for female students (Table 2). This study investigated the students' opinion on empathy, rather than their true empathy at the time of their enrollment in the Faculty of Medicine. According to the literature data, however, people who decide to become doctors are not driven by their craving for money, but by humanitarian values and desire to care for their fellow men (16,17).

4.2. Comparison of key results with the available literature data

The main reason why students decide to study medicine, is, as expected, their desire to help people. The same observation was reported in the study Kaplan Test Prep and Admissions in 2008, where the majority of students indicated a desire to help as the main reason for enrollment, while some earlier studies suggest a greater impact of financial incentives in connection with the reasons for the decision for a medical profession (18,19). In our study the financial aspect of the decision to study medicine or dental medicine proved to be much more important for students of dental medicine, furthermore, in comparison with students of general medicine, dentistry students had a greater concern for reliable employment after graduation.

The results show that studying medicine is far more appealing to

women (155–71.8%) than to men (61–28.2%) (Table 1). The reason probably lies in the fact that they achieve higher grades, academic success being the main entry criterion. Compared to male students female students showed a higher level of empathy (Table 2). This can be partly explained by biological differences: women are expected to offer more emotional support and are easier to sympathise with others, while men are more inclined to rational thinking, dominance and control (20).

As expected, the measured level of empathy is higher among students who decided to study medicine or dental medicine because they wanted to help people, and lower if their decisions were based on the desire for high earnings.

4.3. Study limitations

The survey questions about the factors that motivated the participants to study medicine or dental medicine were not validated; they were elaborated on the basis of a literature review and own expertise, and were approved by consensus.

An important drawback of the study is the fact that the students were informed of the goals of the survey, which may have led them to adjust their responses and to mark humanistic values as important factors influencing their education decision, although, in fact, they may have been driven by other motives when deciding on their study course.

The study was conducted in one of the two medical schools in Slovenia and therefore its results cannot be generalised to the entire country.

The most important limitation to our study is that we did not include a control group (e.g. a group of students enrolled in other faculties of the University of Ljubljana).

4.4. Implications for future research

The results indicate that the Faculty of Medicine in Ljubljana primarily enrolls students who are applying with (self-assessed) humanistic values in mind.

It would be sensible to re-administer the questionnaire to the same sample of students when in their sixth year of the medical studies, in order to monitor whether their empathy has deepened during the study, and whether, in comparison to the beginning of their study, their empathy levels have either increased or declined through contact with patients during clinical work. Such monitoring would give us an insight into the development of their empathic thinking under the influence of different clinical courses, mentoring by different specialists, contacts with an increasing number of patients, and the students' personal development. Evaluation of students by an objective observer, following the completion of each study year or at the end of clinical rotations would also be useful. In this way, it might be determined, with the greatest certainty, whether a course of study had a positive impact on the development of professional values of the previously interviewed students. Further complemented questionnaires covering more data pertaining directly to the students' lives (sense of acceptance by patients, satisfaction with the quantity and quality of leisure time, the amount of stress during the study, assessment of attitudes to the mentor of the clinical course) would give us a better insight into those factors of empathic experience which can be, to some extent, influenced by ourselves, and which also have an impact on the empathy level of the individual. Some studies have shown a decline in empathy during the study, and lower levels of empathy in students and

later on in specialists in various medical fields (21-24).

It would be sensible to repeatedly administer the questionnaire to future student generations in order to monitor the changing reasons for enrollment in the Faculty of Medicine in Ljubljana. With a larger sample of first-year medical students, we would eventually identify the reasons for enrollment that are shared by those with the highest degree of empathy and those with the lowest. A repeated survey should include

a control group in order to set the students' empathy self-assessment in a broader Slovenian context.

5. Acknowledgements

The authors thank all students who completed the questionnaire.

The study was based on the optional subject Family medicine research, conducted by the Department of Family Medicine, Faculty of Medicine, University of Ljubljana.

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