EMPATHY PREDICTING CAREER CHOICE IN FUTURE PHYSICIANS

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INTRODUCTION

Empathy implies physicians' ability to understand patient's inner feelings and perspectives and the ability to show that understanding using cognitive, emotional and behavioral processes. It is an integral part of a quality doctor–patient relationship and one of the basic conditions for a quality patient care. Physicians who are able to develop a good, empathic doctor–patient relationship can easily communicate with their patients, thus leading to a better diagnostics [1], increased com-

Summary

Background: Empathy is an integral part of a quality doctor–patient relationship and one of the basic conditions for a quality patient care.

Aim: This study addresses the differences in empathy in the context of career decision making by future physicians.

Materials and methods: A survey was administered to 363 medical students selected by a random cluster sampling. They answered questions regarding their socio-demographic data, personal or close family members' medical history, and future career choice. A 16-item Toronto Empathy Questionnaire (TEQ) was administered to evaluate their empathy.

Results: The results showed that high levels of empathy were related to the choice of people-oriented vs. technology-oriented medical disciplines as a future career, even when controlled for female gender and education.

Conclusion: Empathy is a salient factor in medical education and professional orientation, principally connected to some medical disciplines and essential to be taken into account in the early phases of future physicians' careers.

Keywords: empathy, medical students, career choice, education

pliance, patient satisfaction, and better treatment outcomes [2].

This therapeutic relevance draws attention to the importance of fostering and sustaining empathy in physicians of all specialties, particularly in the early phases of their career development [3,4]. The Association of American Medical Colleges [5] points out that fostering empathy in medical students is a priority, and the Accreditation Council for Graduate Medical Education perceives empathy as one of the important qualities of professionalism [6]. Nevertheless, recent

studies have shown that the level of empathy decreases during undergraduate medical education and residency [7-9]. At the very time they usually become involved with clinical subjects; future physicians became less related to the patients and more drawn to their senior colleagues, whom they perceive idealistically [10]. However, some factors (e.g., high personal well-being and better quality of life) seem to be protective of empathy in both students and residents [11]. Contrary to this, the factors associated with stress [12] and those related to inadequate role modeling in the academic and clinical environment can lead to a decrease in empathy [11,13].

In addition to education and environment related factors, certain biological and socio-demographic characteristics can also affect empathy. Studies have shown that female students are more empathic and that they show a more caring attitude compared to their male peers [14]. The authors agree that future physicians' level of empathy is also related to their career choice. Physicians with high empathy tend to be drawn to the so-called people-oriented medical disciplines (e.g., psychiatry, pediatrics, gynecology, internal medicine, and primary care), while those with low empathy are more attracted to technology-oriented specialties, that is, the fields of medicine where the contact with patients is scarce or absent (e.g., surgery, radiology, and pathology) [15,16]. However, our understanding of how empathy is modulated in medical education is still fairly limited [17]. Although one hypothesis states that empathy is shaped by cultural factors and that it cannot be considered a universal phenomenon [18,19], so far there have been no studies dealing with the empathy

of medical students or residents, nor its impact on their career choice in Eastern Europe. Furthermore, there is a general lack of studies on previous personal or close family members' experiences related to health-care needs as well as studies regarding the role of religious beliefs in physician's empathy [17]. Taking into account, social learning theory of career decision making, suggesting that individuals learn about themselves, their preferences, and work environment thorough direct and indirect experiences [20], the assessment of the aforementioned social, and psychological factors might be of particular importance in career choice and development, within a health care setting.

The present cross-sectional study addresses the differences in empathy scores between genders, between first year and senior medical students, and between medical students with different specialty preferences, as well as the association between personal or family members' history regarding somatic or mental health problems and empathy. The research hypothesizes that 1) empathy scores of female students will be higher than those of male students and 2) the scores of first year students will be higher than those of senior medical students. We also hypothesize that 3) medical students with a personal or family history of a chronic somatic or mental disorder, or more frequent contact with the medical healthcare system, in the role of a patient or a caregiver, will have higher empathy scores. Our last hypothesis is that 4) a medical student's preference for people-oriented specialties is associated with higher empathy scores as compared with a preference for technology-oriented specialties.

MATERIAL AND METHODS

Participants

The questionnaire was completed by 178 (RR = 88.56 %) and 185 (RR = 96.35 %) of first year and senior medical students, respectively. The average age of the participants was 22.36 ± 2.38 , and 68.1 % were females. The socio-demographic characteristics of the sample are summarized in Table 1.

Sampling procedure

Medical education in Serbia lasts six years. The first two and a half years are devoted to the preclinical medical disciplines, and in the middle of their third year, medical students devote themselves more to the clinical medical disciplines. The last year of studies also implies additional, semi-structured practical rotations in selected medical disciplines (i.e., gene-

ral practice, gynecology, surgery, and pediatrics), which do not imply the division of students by groups. The rotations vary in terms of the amount of training, often depending on the student's preferences and personal interests, as it is common for students in this phase of their education to spend extra-curricular hours in the departments of their interest. Against this background, and in order to avoid the possible bias caused by exposure to potentially variable education in this period, we selected the first (freshmen) and the fifth-year medical students (seniors) for the purpose of this study.

There were 500 first year students (divided into 25 groups based on the surname alphabetical order) attending the School of Medicine, University of Belgrade, in the academic year 2010–2011. We randomly selected 13 groups to distribute the study questionnaires.

There were 428 seniors (divided into 20 groups based on the surname alpha-

Table 1. Socio-demographic characteristics of the participants

Characteristics		Freshmen (%)	Seniors (%)	χ^2	p
Place of living	≥ 200.000	39.50	37.90	0.45	.832
	< 200.000	60.50	62.10		
Emotional status		38.20	54.90	9.376	.002
	Partner	61.80	45.10		
	No partner Nema partnera				
Living	Alone	14.70	15.80	0.190	.890
	With family/friends	85.30	84.20		
Religiosity (yes)		79.90	76.80	0.348	.555
Accademic years renewed (yes)			45.70		
Previous in-patient treatment (yes)		31.50	44.90	6.342	.012
Presence of a (chronic) somatic disease (yes)		6.20	4.90	0.111	.740
Family member with a mental disorder (yes)		3.40	6.00	0.875	.350
Family member with a somatic disease (yes)		21.30	40.50	14.704	.000
Stresfull event in life (yes)		47.20	51.90	0.627	.428

betical order) attending their fifth year of studies at the School of Medicine, University of Belgrade, in the academic year 2010–2011. We randomly selected 10 groups to distribute the study questionnaires during the first week of the academic year.

Measures and covariates

The study instrument was a questionnaire divided into two parts. The first part was the questionnaire, which contained the following:

- a) Questions regarding general socio-demographic information (i.e., sex, age, size of the participant's hometown (– 200,000 or = 200,000), family information, emotional status (single or in a relationship), academic achievement (average grade), and religiosity (religious or non-religious)).

- b) Questions regarding previous personal experience or the experience of close family members regarding healthcare (i.e., the number of visits made to doctors, information on the participant's health status, and information on somatic or mental illness in the immediate family).
- c) A question about the participant's affinity towards the offered medical disciplines (*What residency would you prefer to take upon graduation?*). We asked the students to rank the offered medical disciplines from 1 (*most preferred*) to 10 (*least preferred*). In subsequent data processing, the division of the offered medical disciplines into people-oriented (i.e., dermatology, gynecology and obstetrics, internal medicine, pediatrics, and psychiatry), and technology-oriented (i.e.,

Table 2. TEQ scor and participants' socio-demographic characteristics				
Socio-demographic characteristics		TEQ (M ± SD)	t	p
Year of studies	First	44.90 ± 7.08	-0.55	0.580
	Fifth	45.33 ± 7.73		
Gender	Female	45.91 ± 7.39	-2.93	0.003*
	Male	43.46 ± 7.21		
Living	Alone	44.77 ± 6.76	-0.31	0.758
	With family/friends	45.12 ± 7.55		
Emotional status	Partner	45.81 ± 7.21	1.40	0.163
	No partner	44.71 ± 7.50		
Place of living	≥ 200.000 inhabitants	44.85 ± 6.92	-0.57	0.568
	< 200.000 inhabitants	45.31 ± 7.78		
Siblings	Yes	45.18 ± 7.37	0.43	0.671
	No	44.64 ± 7.82		
Religiosity	Religious	45.90 ± 6.68	3.36	0.001*
	Non-religious	42.77 ± 9.11		

Note. TEQ = Toronto Empathy Questionnaire; M = sample mean; SD = standard deviation.

*p < 0.005

forensic medicine, preclinical medical disciplines including laboratory work [e.g., anatomy, biochemistry, histology, physiology], preclinical medical disciplines with no laboratory work [e.g., epidemiology, hygiene, social medicine], radiology, and surgery) was made following the example of previous studies [15].

The second part of the questionnaire was the Toronto Empathy Questionnaire (TEQ) designed to measure emotional, cognitive, and behavioral components of empathy [21]. The questionnaire consisted of 16 items, 8 formulated positively and 8 negatively, and the respondents were asked to state how often they felt, thought, or behaved according to the statements according to a 5-point Likert scale from 0 (*never*) to 4 (*always*). The total possible score ranged from 0 to 64, with a higher score indicating a higher level of empathy. The internal consistency reliability of the TEQ was somewhat lower in comparison to the original study (Cronbach's $\alpha = .70$), but it was still satisfactory.

All students who met the criteria for participation, attended lectures, and were willing to participate in the study on the day of the testing were approached to take the survey. The participants gave their informed consent to participate in the research prior to filling out the questionnaires. The questionnaires were administered anonymously, and it took approximately 10 to 15 min for the respondents to complete them.

Statistical analysis

We analyzed the data using the Software Package for Social Sciences for Windows v. 19.0 (SPSS Inc. Chicago, IL)

and G*Power 3.1.2. The internal consistency reliability of the questionnaire was assessed using the Cronbach's alpha factor. The normality distribution of the numerical values was tested by the Kolmogorov-Smirnov test. For the description of the data, the classical methods of descriptive statistics were used (e.g., the frequencies and percentages for the attributive variables and the mean value with the standard deviation for the numeric variables). The t-test for the independent samples, Mann-Whitney test, Spearman's rank correlation, chi-square test of independence with continuity correction according to Yates and binary logistic regression were used to analyze the data.

RESULTS

Relationship between medical students' socio-demographic characteristics and levels of empathy as measured by the TEQ

An average score of the participants on the TEQ was 45.23 ± 7.02 . The freshmen and senior students did not differ in their level of empathy. However, there was a difference in empathy between genders, with female students being more empathic. The participants who declared themselves religious had significantly higher TEQ scores (see Tables 1 and 2).

Relationship between personal or family members' history regarding somatic or mental health problems and empathy

The analysis also assessed variables related to previous personal experience or the experience of close family members regarding healthcare needs. Partici-

pants' empathy was not associated with the number of visits to the doctor they had made over the past year ($p = .021$, $p = .714$), the presence of chronic somatic disorder ($t(358) = 0.484$, $p = .629$), or previous inpatient treatment ($t(361) = -1.201$, $p = .230$). Having a family member suffering from a mental disorder ($t(359) = 0.809$, $p = .418$) or chronic, somatic illness ($t(361) = -0.141$, $p = .890$) was also unrelated to the level of empathy. Moreover, previous stressful experiences described as "very intense" for the participant had no influence on the TEQ score ($t(359) = 1.532$, $p = .130$).

Empathy and medical students' career choice

We divided the medical disciplines offered in the questionnaire into those requiring direct contact with patients and an active physician-patient relationship (people-oriented medical disciplines) and those where the contact with patients is scarce or absent (technology-oriented medical disciplines). The students who rated one of the people-oriented medical disciplines as most preferred ($M = 45.91$, $SD = 6.97$) showed a significantly higher level of empathy on the TEQ ($t(324) = 2.403$, $p = .017$) compared to students who selected a discipline involving little or no direct contact ($M = 44.07$, $SD = 6.73$). More emphatic students showed a stronger affinity toward gynecology ($p = -.111$, $p = .039$), and those with lower empathy showed a stronger affinity toward surgery ($p = 0.123$, $p = 0.021$). As in the case of more empathic students, female students ($\chi^2 = 29.23$, $df = 1$, $p = .000$, $f = -0.307$) and senior medical students ($\chi^2 = 23.69$, $df = 1$, $p = .000$, $f = -0.276$) were more inclined toward peo-

ple-oriented medical disciplines as their future career.

In order to assess what factors predict career choice (people-oriented vs. technology-oriented medical disciplines) in future physicians, a logistic regression was performed, with career choice as the dependent variable, and TEQ score, female gender and senior year of studies as the independent variables. The analyzed model was statistically significant ($\chi^2 = 60.597$, $p = .000$). The proposed factors, together, accounted for between 23.1 % and 31.8 % of the variance of the career choice. The empathy ($\beta = 0.49$, $p = .000$, $OR = 2.347$), female gender ($\beta = 0.28$, $p = .064$, $OR = 1.105$) and year of studies ($\beta = 0.13$, $p = .092$, $OR = 1.002$) had a positive effect on choice of people-oriented medical disciplines. However, only empathy, out of the three proposed factors, showed a statistically significant predictive effect.

DISCUSSION

The present cross-sectional study detected differences in the levels of empathy of medical students in regard to their gender, education, religious beliefs, and preferred career choice. However, we did not detect a difference in the level of empathy between freshmen and senior medical students, nor between those with and without personal or family members' negative previous experiences. So far, only Rahimi-Mediseh et al.'s [22] study in Iran has provided support for the idea of empathy remaining stable in the course of medical studies. The majority of the studies, for most of them conducted in the U.S., have sustained the findings on a significant decline of empathy in senior medical students [8], while others conducted

in Japan, Korea [18, 23] and Portugal [24] have shown an increase in empathy. Winseman, Malik, Morison, and Balkowski [25] reported that both personal and educational factors influence medical students' empathy in the course of their studies. Female students in our study showed more empathy than their male colleagues, as well as higher affinity towards medical disciplines involving a proactive doctor-patient relationship. This is consistent with the previous studies in the U.S., Europe, and Japan, which have disclosed higher levels of empathy in female medical students compared to their male colleagues [18, 26, 27]. However, some studies have noted the insignificant influence of gender on the empathy of medical trainees and specialists [28]. There are multiple possibilities regarding the role of gender in empathy. One explanation is based on the evolutionary theory of parental investment that sees women as more capable of caring for the offspring and more approachable for emotional signals than men [29]. The other explanation is that women are more inclined toward giving emotional support and more capable of developing intense interpersonal relationships [15, 18]. These differences may be additionally emphasized in our sample by the somewhat traditional and patriarchic perception of a woman as a compassionate and emotional caregiver in our culture [30].

Gender differences also cause the disparity in the value system. Female medical students were more likely to report appreciating the principles that rely on religion, while male students gave priority to economic values [27]. Studies of the direct impact of religion on physicians' empathy are scarce, but our data indicate that religious medical students se-

em to understand and experience of other people's thoughts and feelings better. As empathy represents an important part of social cognition, contributing to the promotion of prosocial behavior [21], it is possible that religion influences the need to help others through mediating the effect of empathy.

It is also thought that the personal negative experiences of females can lead to higher empathy for a person in a similar situation, while the level of empathy in men is not affected in these circumstances [31]. According to other studies, traumatic experiences can lead to the impairment of empathy and difficulties in sharing the affective and cognitive states [32]. Surprisingly, none of the variables related to personal or to family members' negative life experiences were associated with the level of empathy, in our study. We offer the hypothesis that the future physicians' empathy remains unaffected by the prospective taking experience as result of protective coping strategies. An additional explanation could lay in the fact that we mature throughout life [33]. Maintaining the average age of the medical students in our sample, it seems that they successfully prevailed in one of many challenges of the medical profession by dividing their personal from their professional life and that their previous experience did not affect their compassion for others.

At a more practical level, another interesting point in our study is that more empathic medical students tended to choose their future careers among people-oriented specialties. Newton et al. [16] reported that even if the gender variable is controlled, students who choose medical disciplines that have more contact with patients and rely less on technical di-

agnostic procedures have higher empathy scores than those who choose other specialties. The same was later confirmed by the studies of Hojat et al. [8, 14, 26]. However, more than 20 years ago, a similar study by Harsch et al. [34] did not find differences in empathy among medical students with different professional preferences. Inevitably, the question is raised as to what factors, if any, could justify this change in the role of empathy in the career choices of future physicians, over the course of the last decades. The research suggests that today's college students show less empathy toward others compared with their peers in the past decades. This decline has been most prominent since 2000, and it is argued that it has been caused by the current global changes in communication and the value system as a consequence of the expanding use of technology [35]. It could be that these changes in empathy did not impair, but facilitated the career choices of today's medical students by making them more confident in facing technology-oriented fields of medicine. Contrastingly, they could also be the consequence of shifting from a humanity-based to a technology-based approach in medicine and socially more desirable behavior [36]. As the se technological changes were more prominent in the West, this could also account for the decline of empathy in the course of studies noticed predominantly in these countries.

Studies on the level of empathy among physicians of different specialties complement those that focus on medical students. It has been noticed that the psychiatrists and primary care specialists have a far higher mean score of empathy compared to orthopedics and anesthesiologists[15], while general practice physi-

cians [37] have shown the highest level of empathy, not only among healthcare staff in general (nurses and physicians of different specialties) but also among other nonmedical professionals (e.g., lawyers). The favoring of certain interpersonal skills during training may cause the difference in empathy of the physicians of some specialties [15]. Specialists, working in the fields that require more communication and better social skills, show higher empathy as a consequence of the close interaction with patients [14].

The psychological profile is an inseparable part of the complex phenomenon of empathy. In this regard, Compton, Frank, Elon, and Carrera [38] showed that students in their final years of medical school tend to choose more prestigious medical disciplines, one of which is surgery. The need for prestige may result from the narcissistic personality traits, and studies such as Ritter et al. [39] have suggested that narcissism is associated with a lack of emotional empathy. These could be grounds for the low level of empathy in students who, in our survey, opted for surgery as the "most preferred" career in medicine.

Our study has some potential limitations to consider. Firstly, it was designed as a cross-sectional study, so the assessment of the change in students' empathy, after five years of medical education, could be imprecise. This could be due to the potentially different baseline empathy of seniors, in their first year of studies, compared to the first year students included in the survey. However, the factors that could influence this change in empathy and the acquisition of medical knowledge and experience remained stable. Both groups were subjected to the same selection process prior to

entering medical studies and received the same training at the beginning of their first year. Secondly, empathy was assessed using a self-reporting instrument; complementary methods and instruments (i.e., peer assessment, observational approach, and self-assessment instruments with overlapping constructs) could further contribute to understanding the variation of empathy during medical training. Finally, the sample consisted of students from only one university center (out of four available in the country). Nevertheless, this was the largest medical and university center in the country, with the greatest number of students coming from different geographical regions and socio-demographic backgrounds. Nonetheless, we believe that these restrictions do not reduce the value and importance of our study.

The present study is the first of its kind in Eastern Europe that used a precise and internationally comparable methodological instrument, and we believe it will become a solid base for further research in this direction. Partly because of technological developments and partly because of the diversity in contemporary systems of medical education and healthcare, it has been argued that insuffi-

ent attention is paid to the development of empathy and encompassing professional qualities. Empathy is a salient factor in patient care, medical education, and professional orientation, principally connected to some medical disciplines (e.g., surgery and gynecology) and necessary to be fostered across all academic and cultural contexts. Humanity-based activities and changes in “hidden” curriculum could encourage the growth of empathy in medical students. However, a systematic approach to reinforcement of empathy, as a career-long trait in physicians, is needed and should be targeted through implementation of specific programs (i.e., role modeling, identification, and communication skills) into formal curriculum and clinical practice. The clues for such interventions should be looked for particularly within the rare cultural settings where empathy has been evidenced to remain stable or even to increase in the course of medical education. Empirical research on the potential predictors and outcomes of empathy can additionally contribute to the enhancement of empathy, facilitate the career choice of young doctors, and serve as a basis for future professional orientation and career development.

EMPATIJA KAO PREDIKTOR IZBORA SPECIJALIZACIJE KOD BUDUĆIH LEKARA

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Kratak sadržaj

Uvod: Empatija je sastavni deo kvalitetnog odnosa lekar-pacijent i jedan od osnovnih uslova kvalitetne brige o pacijentu.

Cilj istraživanja: Ova studija se bavi razlikama u empatiji u kontekstu odlučivanja o specijalističkoj karijeri kod budućih lekara.

Materijal i metode: Istraživanje je obuhvatilo 363 studenata medicine. Ispitanici su odgovarali na pitanja vezana za svoje socio-demografske podatke, ličnu i porodičnu anamnezu i izbor zanimanja. Za procenu empatije ispitanika korišćen je Toronto Upitnik o Empatiji (Toronto Empathy Questionnaire - TEQ).

Rezultati: Rezultati pokazuju da su visoki nivoi empatije u vezi sa izborom budućeg zanimanja koje podrazumeva kontak sa ljudima, nasuprot grupi zanimanja koja su prevashodno bazirana na tehnologiji, čak i kada su kontrolisani socio-demografski parametri (pol, obrazovanje).

Zaključak: Empatija je važan faktor u medicinskoj edukaciji i profesionalnoj orijentaciji, uglavnom povezan sa određenim medicinskim disciplinama. Takođe, razmatranje empatije je neophodno uzeti u obzir u ranim fazama karijere budućih lekara.

Cljučne reči: empatija, studenti medicine, izbor zanimanja, obrazovanje

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