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## Opinions on medical education, options and career choices of 4<sup>th</sup> year medical students

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### Abstract

The University of Medicine and Pharmacy of Tîrgu Mureș is the only medical university in Romania that offers Hungarian-language education. We aimed to find out the opinions of 4<sup>th</sup> year Romanian and Hungarian-language students regarding education in our University, their learning habits, options, and future career choices. We found significant differences between the two student groups both in terms of learning habits and career choices. One of our most important findings was that the majority of Hungarian students considered that university education does not properly prepare them for the practice of medicine – a fact that should be given further consideration.

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## 1. Introduction

Transylvania as a historical and geographical space is a perfect example of multiculturalism in the sense of a society with ethnic and cultural heterogeneity that is also indicated by multilingualism (Muscalagiu, 2008). Three major ethnic groups can be found here: Romanians, Hungarians and Germans.

The latest census shows that approximately 6.5% of Romania's population declare themselves to be of Hungarian ethnicity, thus making up the largest ethnic minority of Romania (National Institute of Statistics, 2011). The counties of Harghita and Covasna have a majority of Hungarian ethnics (85.2% and 73.7% respectively), with large numbers of Hungarians also found in the counties of Mureș, Satu Mare, Bihor and Sălaj. Furthermore, approximately 6.7% of the population declared Hungarian to be their mother tongue (National Institute of Statistics, 2011). Nevertheless, these numbers may be larger due to the fact that only 18.884.800 and 18.891.600 from the counted population of 20.121.641 declared their ethnicity and native language respectively, hence the importance of providing Hungarian language education at all academic levels. Although there are a number of higher education institutions in the country with courses in Hungarian, approximately 800 teaching staff and nearly 12.000 students (2.000- 2.200 new students per academic year), there is still a lack of offers for certain fields (Tonk, 2010).

Founded as the Institute of Medicine and Pharmacy in 1948, the University of Medicine and Pharmacy of Tîrgu Mureș is a multicultural public university in Romania and the only one that offers Hungarian language medical education. This important characteristic of our institution not only sets it apart from other medical universities, but it also at least partly fills the need for Hungarian language higher education.

The doctor-patient relationship can be influenced by many factors, and proper communication is a key aspect. This can of course be facilitated if the doctor and patient share the same mother tongue and perhaps similar cultural backgrounds, that have a positive effect on patient trust as well (Banerjee & Sanyal, 2012). Thus providing Hungarian language professionals in healthcare for the regions that have a predominance of Hungarian ethnics seem both logical and necessary.

Keeping in mind the specific of our region and institution, we aimed to determine the opinions of 4<sup>th</sup> year medical students – both Romanian and Hungarian language series – on education in our University, their learning habits and options, and future career choices. This should give us certain answers regarding the state of our medical education and perhaps the future of healthcare in Romania, by assessing career options amongst our students (including options on practicing medicine in their country or abroad, in their counties of origin, and working in academia). Comparing the answers of students from the Romanian and Hungarian language series can further identify relevant aspects of Hungarian language medical education in Romania.

## 2. Material and method

We developed a questionnaire consisting of a series of multiple choice and open-ended questions. The 21 questions were formulated so as to obtain information about basic demographics of the students, and their learning habits, future career choices and opinions on current medical education. The questionnaire was filled out by 123 students from the Romanian-language series and 127 from the Hungarian-language series.

The anonymous questionnaire took approximately 10 minutes to fill out. The obtained data was statistically analyzed using MedCalc software (bvba, version 12.3.0, Mariakerke, Belgium): the chi square test, with a cut-off point of  $p=0.05$ .

## 3. Results

### 3.1. Demographic data

The two student groups were similar in terms of age and sex. In the Romanian series, 35.77% were from Mureș County and 21.95% came from north-eastern counties, while the great majority of Hungarian students were from the counties of Mureș, Harghita, Covasna and Satu-Mare (30.70%, 29.13%, 14.96% and 11.81% respectively).

### 3.2. Prior education and choosing medicine

The majority of students graduated high schools of natural sciences and mathematics-informatics profiles, with no statistically significant differences between the two series (table 1). Asked for their reasons for choosing medicine, the students seemed mostly attracted by the possibilities offered by the medical profession, and they were affirmatively least influenced by their parents and relatives (table 1).

It is also interesting to note that only 3.6% of all students have 2 or more physicians in their family, 19.2% have one family member that was/ is a doctor, while 77.2% of students have no healthcare professional in their family, with no significant differences between the two series ( $p=0.69$ ).

Table 1. Data on high school profile and the reasons for choosing medicine.

		Romanian students	Hungarian students	No. (%)	P value
High school profile	Natural sciences	49	58	107 (42.8)	0.44
	Mathematics-Physics	2	4	6 (2.4)	
	Mathematics-Informatics	43	45	88 (35.2)	
	Philology	12	6	18 (7.2)	
	Other	17	14	31 (12.4)	
Reason for choosing medicine	Parents'/ relatives' wish	5	2	7 (2.8)	0.35
	The profession's prestige	16	21	37 (14.8)	
	Possibilities offered by the profession	55	67	122 (48.8)	
	A momentary decision	19	14	33 (13.2)	
	Other	28	23	51 (20.4)	

### 3.3. Higher education options and working

We found no statistically significant differences between Romanian and Hungarian language series in terms of current employment and past and future options regarding higher education – the specific data is presented in table 2. A very small percentage of students from both series have had prior higher education (only 2.4%), and not many more were planning to pursue other degrees in different universities or colleges, with only 2.8% of the students being employed currently.

Table 2. Data on higher education and working amongst the students from the two series.

		Romanian students	Hungarian students	No. (%)	P value
Graduated from another university/ college	No	120	124	244 (97.6)	0.70
	Yes	3	3	6 (2.4)	
Wanting to graduate from another university/ college	No	111	116	227 (90.8)	0.93
	Yes	12	11	23 (9.2)	
Currently employed	No	122	121	243 (97.2)	0.13
	Yes	1	6	7 (2.8)	

### 3.4. Learning habits

In terms of learning habits throughout the academic year – with the exception of exam sessions – there were statistically significant differences between the two series in the amount of time students spent learning each week ( $p=0.03$ ), and also the amount of time they wish they could spend with learning each week ( $p=0.002$ ). Hence

Hungarian language series reported spending more time with individual study (figure 1.a.), while Romanian language series seemed to want to spend more time studying (figure 1.b.).

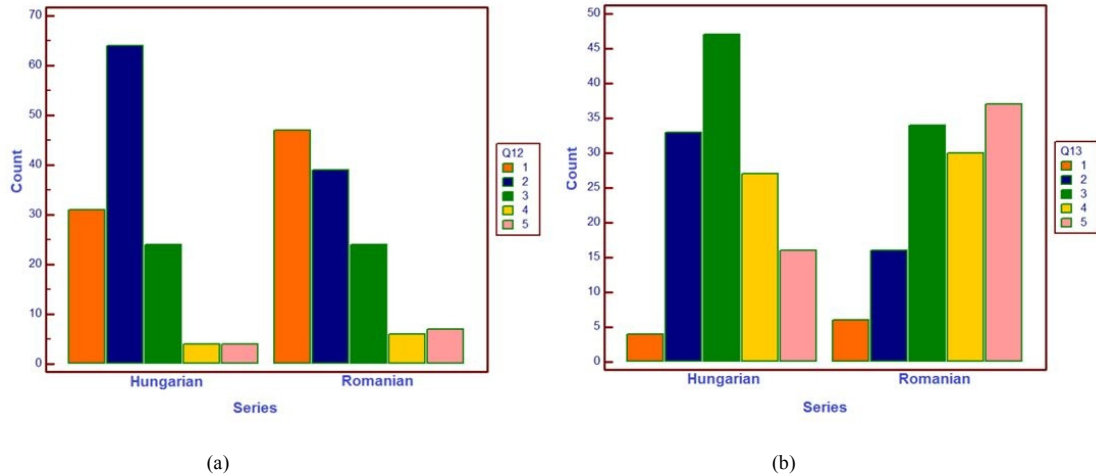


Fig. 1. Weekly learning time in the two series of students: (a) Answers to question 12 (Q12) regarding effective time spent with learning weekly, with the exception of exam sessions. Answer choices: 1. 0-7 hours; 2. 7-14 hours; 3. 14-21 hours; 4. 21-28 hours; 5. Over 28 hours. (b) Answers to question 13 (Q13) regarding the time they wish to spend with learning weekly, with the exception of exam sessions. Answer choices: 1. 0-7 hours; 2. 7-14 hours; 3. 14-21 hours; 4. 21-28 hours; 5. Over 28 hours.

The reasons invoked for not learning as much as they wished were similar in the two series, without a significant difference, students mostly blaming their busy schedule for their lack of study time (figure 2). Still, during exam sessions, both series of students spent about the same amount of time learning, usually between 9 and 12 hours/ day (38%) or even over 12 hours/ day (31.2%,  $p=0.40$ ). All students gave similar answers regarding extracurricular activities (the most frequent options were sports and being part of a scientific circle) and preparing for the residency exam (95.2% of students haven't started preparing yet,  $p=0.63$ ).

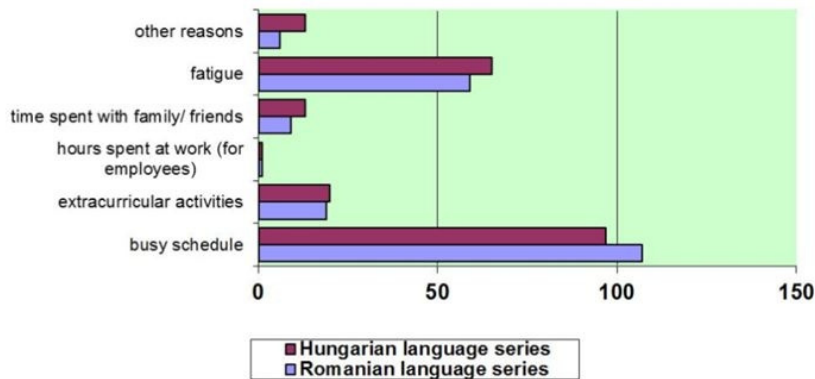


Fig. 2. Reasons invoked by the students for not spending enough time with learning.

More students from the Romanian language series have reported preparing ahead for their courses and practical work (figure 3.a.  $p=0.007$ ), still over 40% of Hungarian series students feel that the education received in their university does not sufficiently prepare them for medical practice (figure 3.b.  $p=0.0001$ ).

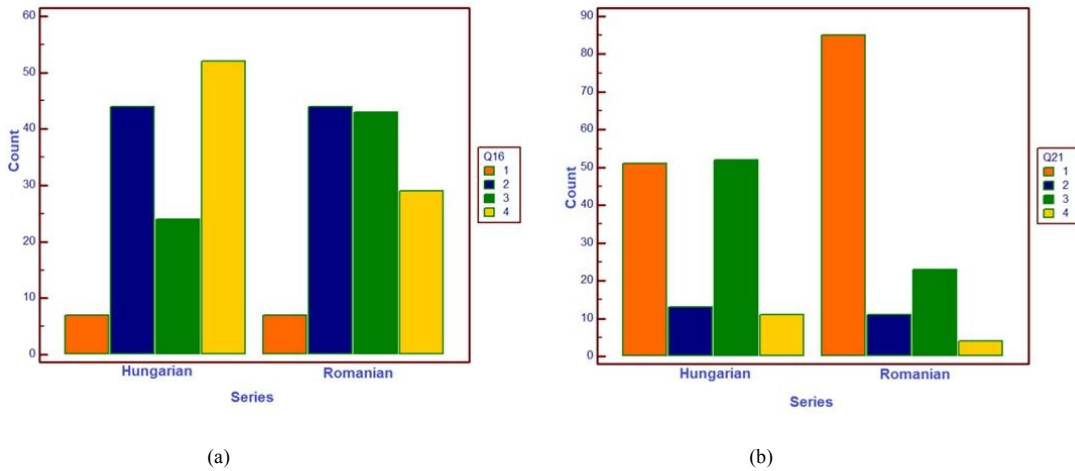


Fig. 3. (a) Answers to question 16 (Q16) regarding preparing ahead for courses/ practical work. Answer choices: 1. Yes, for courses only; 2. Yes, for practical work only; 3. Yes, both for courses and practical work; 4. No. (b) Answers to question 21 (Q21): Do you consider that your medical education prepares you for a medical career? Answer choices: 1. Yes, with possible improvements; 2. Yes; 3. No; 4. I do not know.

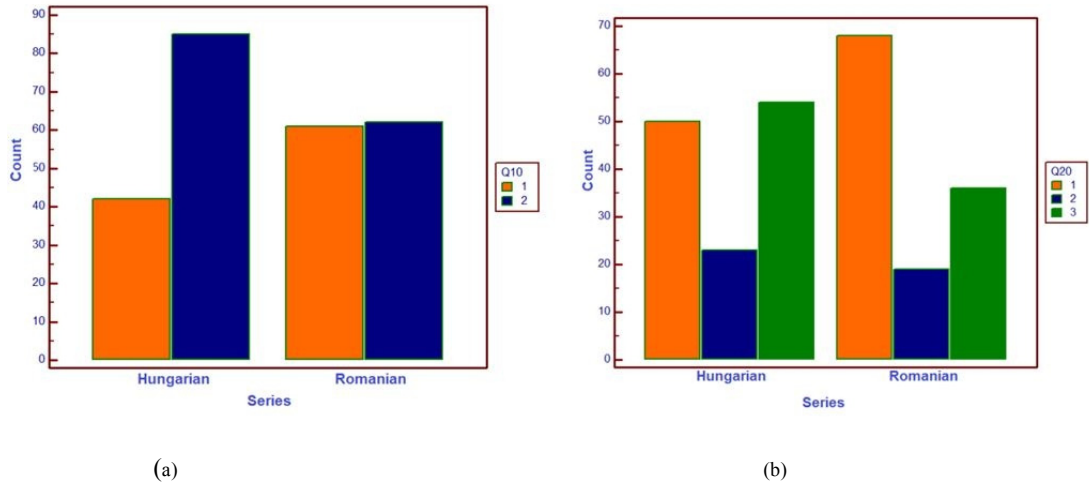


Fig. 4. (a) Answers to question 10 (Q10) regarding decisions on future specialty. Answer choices: 1. Have not decided yet; 2. Already decided. (b) Answers to question 20 (Q20): Would you consider working in academia? Answer choices: 1. Yes, I would like to; 2. Yes, if I need to; 3. No.

### 3.5. Future career choices

When asked if they thought about their future medical career, we found that 66.92% of Hungarian language students have already decided what they'd like their future specialty to be, as opposed to only 50.40% of the Romanian language series (figure 4.a.  $p=0.01$ ). Of all students involved in the study, 40.4% would like to practice medicine in Romanian, 34.4% would opt for other countries and 25.2% haven't decided yet. About half of the students (46.8%) would like to practice in their counties of origin, with no significant differences between the two series ( $p=0.12$ ). There were also more Romanian language students willing to work in academia (figure 4.b.  $p=0.01$ ).

#### 4. Discussion

In Romania medical school is a faculty of a university. The faculty's medical education lasts for 6 years: the first 2 years focus on pre-clinical sciences and students spend the last 4 years mostly with clinical rotations. Thus a 4<sup>th</sup> year student has already been introduced to clinical sciences and is in contact with patients and different specialties. This was one of our reasons for choosing 4<sup>th</sup> year medical students as the study population in our analysis, the other being that most surgery clinical rotations are done in the 4<sup>th</sup> year, so students can already have an opinion on the main differences between medical and surgical specialties. After graduating medical school, students must take the national license exam, followed by an admission exam for starting a medical residency program in a certain specialty. The residency program's length depends on the specialty, with a limited number of places each year.

By using an anonymous self-administered questionnaire we were able to gather important information on 4<sup>th</sup> year medical students' learning habits and opinions on medical education in our university. Our questions were in line with those used by other researches in similar studies, and offered some insight into the demographic characteristics of medical students, prior education, and their attitudes toward medical school and higher education. Given the fact that medical school in Romania is lengthy and very time consuming, we were not surprised to find that only an insignificant number of students have had prior higher education and/ or are currently employed. Also the practice of medicine is a career choice that involves an additional 3 to 6 years of a residency program before becoming a specialist physician, so pursuing other specializations (except those related to medicine) is rare amongst medical school graduates. This was also evident in our students' responses.

The learning habits of medical students deserve attention because they can be seen as an indicator of how prepared the students will be and what factors might contribute to a better assimilation of the studied subjects. By corroborating this information with data about extracurricular activities, we can get a clearer idea of the number of students that can balance personal interests with medical school's busy schedule.

The importance of studying career options amongst medical students resides in the fact that these students are the future doctors that need to provide healthcare in our country. Knowing what specialties are most attractive to them can help to estimate the future number of physicians of different specialties and perhaps identify the possible gaps in the numbers of specialists in certain fields. This could serve as a basis for specific interventions meant to turn medical specialties that lack personnel into more desirable options for the students and young doctors. Moreover, by evaluating the students' options regarding practicing medicine in Romania or abroad, and in their counties of origin respectively, we can further detail some aspects of the future of healthcare in our country. This information can be especially significant in the case of Hungarian language students, who mostly come from counties with a Hungarian ethnic majority – these future physicians would probably be the most appropriate professionals to provide for the healthcare needs of the inhabitants of these counties.

For medical students learning in Romania, the decisions regarding their future specialty need to be made during their faculty training, as the residency admission exam and the residency program start almost right away after graduating medical school. It has been shown that rushing this particularly important decision is stressful and may have a negative influence on students' future career choices (Luther, 2011). We believe that these facts should be considered as further incentives in guiding students towards better choices while in faculty, by offering a clear perspective of each medical specialty and perhaps providing counseling. Our results showed that the most popular choices of medical specialty amongst 4<sup>th</sup> year students are cardiology and general surgery, followed by gynecology, pediatrics, orthopedics and internal medicine. It was interesting to note that none of the students opted for family medicine. This is in line with the results of most similar studies, showing a decline of interest in primary care (Phillips, Weismantel, Gold, & Schwenk, 2012; Avery, Wheat, McKnight, & Leeper, 2009; Bittaye, Odukogbe, Nyan, Jallow, & Omigbodun, 2012) with very few exceptions (Gowin et al., 2013).

One of our most interesting findings is that fewer students from the Hungarian language series are considering work in academia as compared to Romanian language series. Although these numbers were about 57.4% and 70.7% respectively, there might still be raising some concerns regarding the continuity of Hungarian language medical education in our country. More than twice the number of students from the Hungarian series reported dissatisfaction with the way current education prepares them for the practice of medicine compared to their Romanian series colleagues (40.94% vs. 18.69%). This aspect requires a detailed investigation to determine the reasons of Hungarian

language students' discontent, and solutions must be found to improve medical education according to student needs.

Our study included two series of 4<sup>th</sup> year medical students, with a total of 250 students filling out the questionnaire – although it can be argued that the numbers are relatively small, the amount of data was suitable for a proper statistical analysis. Still, we consider this fact to be a limitation of our study. By including a bigger number of students, in different years of training, and perhaps by asking the same students to complete the questionnaire in consecutive years we could find out more about the decision making trends of our students in terms of their career choices. This could also be a means of observing student reactions to certain measures taken to improve the educational and healthcare system.

## 5. Conclusions

Although 4<sup>th</sup> year medical students of the Romanian and Hungarian language series were similar in many aspects, we did identify certain differences in terms of their learning habits and future career choices. Some of our results should be given further consideration, like the possible problems related to Hungarian language education continuity, the lack of student interest in family medicine and returning to one's county of origin, and the dissatisfaction with the current state of medical education. In order to address these issues, measures should be taken to improve the educational system, find the right students to work in academia and facilitate their inclusion, make primary care more attractive to students, and find ways to provide for the healthcare needs of every county. We feel that policy makers should be aware of these points and try to find proper solutions to ensure the quality of future healthcare in Romania. After all, ours is a public university with state funding, so each student's education here is the state's investment.

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