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Career choice motivations of medical students and some characteristics of the decision process in Hungary

Research Article

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Abstract: The changed circumstances of medical work, raises the question of how socio-economic changes over the last few decades has affected the professional socialisation of medical students. This paper explores the career choice motivations of medical students, as well as some characteristics of the process of making that choice and their effects on professional socialisation. The study was carried out with a self-administered questionnaire with 503 students in general medicine, randomly selected from two Hungarian Medical Schools. More than half of the students contemplated becoming a doctor as early as in their childhood. Their final decision was typically made in high school. Significant differences can be demonstrated in professional socialisation between those individuals identifying with the profession in early childhood and others turning to the profession later. Altruistic motivations were the most significant career choice reasons. In conclusions, the medical career choice must have deeper roots, yielding to an evolutionary psychological analysis as well, one aspect of which is altruism.

Keywords: *Altruism • Early decision • Medical students • Medical education • Motivation • Professional socialisation*

1. Introduction

1.1. The socio-economic changes and the medicine

The changed circumstances of medical work, due in part to general tendencies and to the unique characteristics of the formerly iron curtain countries, repeatedly raise the question of how the socio-economic changes of the past few decades have affected the career choice motivation of medical students and their professional socialisation.

This research issue is also a topical one in Hungary. Before the political changes in Hungary, medicine was regarded as a profession of the highest prestige, guaranteeing emergence and progress in society. As befitted the profession's disproportionate idealisation medical schools and universities were over-applied to, and an emerging norm that one must complete

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medical school at all costs since dropping out meant an enormous disappointment, loss and break in one's life. Another factor contributing to this process was the situation that in the socialist system of economy the medical profession had no 'fire exit'. There was little possibility to make use of medical knowledge outside the sphere of health care [1].

With the recent fundamental political changes (1989), however, the socio-economic circumstances underwent considerable changes. As a consequence of economic and market growth and the extension of higher education, over-application to attend Medical Schools ceased and admission criteria were lowered.

In parallel, the continuous reform of university education opened up doors to the development of medical knowledge in new directions. We have only to think of the increasing number of medical lawyers, and the new possibilities for profiting from medical knowledge outside the curative field, i.e. the benefits of leaving the profession.

These features indicate, that the changes relating to the medical profession and its attributes have been accompanied by a loss of prestige pertaining to medical work, with the realisation that advancement may be faster in other lines of work [2,3].

Despite these new phenomena the education at the Medical Universities has not changed much in Hungary. Even though the conditions of getting accepted have gone through several changes, it is still necessary to have good marks in Secondary School and sit for an entrance exam in Biology and Physics or Chemistry, without an aptitude test.

1.2. Career choice motivation and professional socialisation

The extended scale of possibilities, including the advantages and disadvantages expected from earning a medical diploma, may well influence their motivation to choose this career and also professional socialisation. Career choice motivations involve identifying with the values offered at the university, choosing a specialisation and a place of work, and ultimately, the learning strategy. However, an early career choice, identifying with overtly idealised roles, may reinforce the conflicting characteristics of being a medical doctor.

A hasty decision may lead to the inability to identify with the medical role and then professional burning out. An understanding of the circumstances surrounding their career decision, the motivations of university applicants and the effects on career socialisation could therefore be useful information towards the modernisation of medical university training, which has changed little in the past few decades despite the above mention tendencies [1-3].

The professional socialisation of medical students has long been an important topic in medical sociology [4-7].

Merton and his colleagues defined the notion of professional socialisation as a process through which medical students develop their professional self, with its characteristic values, attitudes, knowledge, and skills, fusing these qualities into a more or less consistent set of dispositions which govern his behaviour in a wide variety of professional situations. From another point of view, upon entry into medical school, students are lay people with some science background. When they leave four years later they have become physicians, they have acquired specialised knowledge and taken on a new identity as a medical professional [7].

The first phase of becoming a doctor is realizing the first thoughts towards the medical profession and the date of the final decision. Although most of the students do not decide to become a doctor in their childhood, the ones who do are more dedicated [4].

Several research studies regarding the motivations and hopes of the students show that the most common motivations are altruism, the desire to help others [4,8-12].

Their attitude does not change significantly at the University [11,13]. Motivations also influence their professional socialisation, having a pivotal effect on their satisfaction with the profession [14].

2. Material and Methods

2.1. Aims and objectives

In Hungary there has not been such research regarding the career choice carried out, the motivations and the effect of medical students since the 1970's. Hence, as the first step of the research, 20 in-depth qualitative interviews were carried out, which helped to set the primary aims of the study. The major topics of the interviews were identical with the major categories of the questionnaire. The analysis of these in-depth interviews helped to adjust the questions of the questionnaire and to define their categories [15].

The aim of our study was a complex analysis of medical career socialisation, taking into consideration the origin of the students, their familial and financial background, the circumstances and motivations behind their choice of this profession, their level of satisfaction with the teaching (their overall education system, the theoretical subjects, the practicals, and behavioural

science), the shaping of the medical identity, opinions regarding the medical role, readiness, and future professional plans and ideas.

This study provides a descriptive analysis of the motivations of medical students and the circumstances of their career choice. We analysed what motivations influenced them in their decision, and how can we describe the relationship between motivations and the circumstances of their career choice. An attempt is also made to shed light on the inherence of other elements of medical professional socialisation.

2.2. Data description

2.2.1. CAREER CHOICE MOTIVATIONS

The description of career choice motivations was asked through the following question:

'What motivations influenced you in your decision?'

Becoming a doctor is characterised by heterogeneous motivations; these were presented to the respondents in the 13 categories below (based on a review of literature and our previous experience with students). Students noted on a five-grade scale (1 - it was not important at all, 2 - it was not important, 3 - it was somewhat important, 4 - it was important, and 5 - it was very important) the extent of the role played by the given motivational factor in choosing the medical profession [4,9,10,14,16,17].

Helping profession: 'Being able to choose a helping profession appealed to me.'
Possibilities: 'The numerous possibilities offered by the medical field appealed to me.
Entrance subjects: 'I decided on the basis of the application subjects.'
School grades: 'It was obvious because of my previous school achievements.'
High prestige: 'I was drawn by the high prestige of the medical profession.'
Well-paying profession: 'It is a well-paid profession.'
Influence of the family: The influence of my medical acquaintances, namely, family and friends.
Medical example: 'Doctors have the power to influence as role models.'
The only known profession: 'It was the only profession I really knew.'
Aptness: 'I felt that I was suited for this profession.'
Books, films: 'The influence of books, films, etc.'
Working with people: 'I wanted to work with people.'
Own Illness: 'The influence of my own illness.'
These variables were validated. (The Cronbach-alfa were 0,441-0,628).

On the basis of their explanatory power, 11 of the 13 categories were suitable for factor analysis.

2.2.2. THE PROCESS OF CAREER CHOICE

We divided the students into groups based on three factors according to the first phase of professional socialisation.

1. *Time of though about medical profession:* Individuals who thought of becoming a doctor before and after the age of 14.
2. *Time of decision about medical profession:* Individuals who decided irreversibly to become a doctor before and after the age of 14.

We decided to take into consideration the decisions made before the age of 14 for the reason that there are several forms of education in Hungary. The most common path taken for those who later on apply for Medical University, study in High Schools for the duration of 4 years after they finish their elementary education. So it can be important that those who know their long-term aims should choose a High School where they are specially prepared for the medical entrance exam [4,16].

3. *Thinking of other professions:* Individuals who did or did not think of other professions.

The description of the process of career choice was made through the following questions:
Time of thought about medical profession: 'When did you first think that you wanted to be a doctor?'
The time of decision: 'When did you finally decide that you would be a doctor?'
Thinking of other profession: 'Did you ever think about other professions?'
'What other professions were you thinking about?'
[4,16]

We then examined the differences among the groups according to the following elements of professional socialisation:

1. Family background and circumstances:
- educational qualifications and occupations of the parents and grandparents, and
- whether there were relatives with medical qualifications.
2. Motivations (read above).
3. Medical identity:
- whether doubts had arisen about the correctness of their choice since their decision to become doctors;
- whether they had ever thought about dropping out of medical school; and
- whether they would choose a medical career if they were given a chance to start again.
4. Aspects of finding a job:

We analysed the students' expectations of their prospective place of employment by asking them to rate the importance the five elements on a scale of 1 to 5

Table 1. Medical students by gender.

Gender	Univ. of Debrecen	Univ. of Szeged	Total population	Participants
Male	349	293	642	172
Female	480	443	923	331
Total	829	736	1565	503

Table 2. Medical students by year.

Year	Univ. of Debrecen	Univ. of Szeged	Total population	Participants
Second-year	178	152	330	98
Third-year	163	164	327	94
Fourth-year	155	150	305	100
Fifth-year	193	133	326	103
Sixt-year	140	137	277	108
Total	829	736	1565	503

(1 - not important at all, 5 - very important): good salary, professional advancement, characteristics of the work–place, characteristics of the town, and reconciliation of work with family at the beginning of their career.

5. Professional plans:
- whether they were participating in any other training other than at the medical university;
- whether they planned to undertake further training in the medical field or in other professions; and
- whether they had entertained ideas of participating in other money-earning activities on the side, given that they had chosen the medical field.

6. Demographic and socioeconomic factors:
- age, gender, academic year, ethnic and racial background, etc.

2.3. Participants

A self-completed questionnaire was used to collect data among second- to sixth-year students of general medicine at two Medical Schools in Debrecen and Szeged in 2002.

From results of the pilot study, first-year students were omitted from the research which revealed their lack of experience, preventing them from responding to numerous question areas relevant to career socialisation, such as training, the doctor's role, behavioural science subjects and leaving the profession.

The total population of second- to sixth-year students at the two Medical Schools was 1565; *i.e.*, every second person was sampled.

The overall response rate was 64.0%, 503 valid questionnaires were returned (247 from the Albert Szent-Györgyi Medical and Pharmaceutical Centre, University of Szeged, and 256 from the Medical and Health Science Centre, University of Debrecen).

The distributions of the sample according to gender and year of study was representative of the overall student population. Of the sample 34.2% were men (172/503) and 65.8% were women (331/503) (Table 1). Second-year students comprised 19.4% (98/503) of the sample, third-year students comprised 18.7% (94/503), fourth-year 19.9% (100/503), fifth-year 20.5% (103/503) and sixth year 21.5% (108/503) (Table 2). The sample comprised 32.0% of the total medical student population. There was no significant difference by year in the responses of the students, so the responses were pooled and analysed collectively.

Some students omitted some of the questions, so before analysing the questions we will provide the answering ratios of each individual item in percentages. You can see the percentage of participants who answered the question in brackets where the numerator is the number of subjects answered the question and the denominator is the number of all the students (100%) answering the question.

2.4. Statistical analysis

SPSS 9.0 statistical software was used for the data analysis. The significance level was set at $p<0.05$. Simple descriptive statistics, cross tabulation, χ^2-test, and Principal component analysis with varimax rotation were also used in the data analysis.

3. Results

3.1. CARRER CHOICE MOTIVATIONS

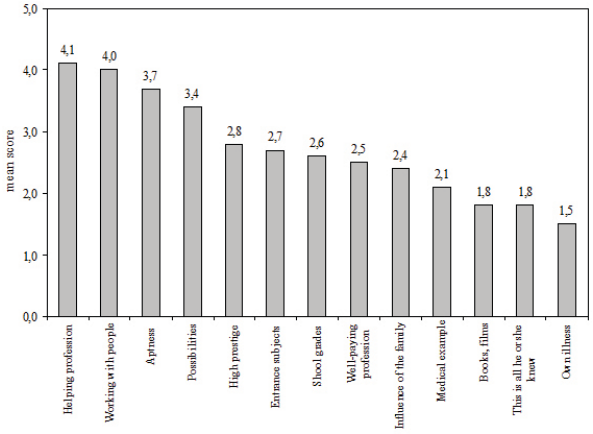
'What motivations influenced you in your decision?'

Figure 1 shows the importance of the motivations, ranked according to the mean scores.

What is the relationship between the specific motivations?

A more detailed description of the association between the variables is presented in Table 3.

Figure 1. Influential power of career choice motivations (n= 503).



The factor model explained 48.8% of the total variance.

1. The first factor of motivations includes good academic achievements and orientation towards the natural sciences, which project the image of a well-paid job with high social prestige to be undertaken in the future.
2. A further significant factor of motivations is made up by the traditional motivations for choosing the medical profession; the 'calling' to help others, and feeling suited for this profession.
3. Considerations suggesting motivations to follow the example of an idealised medical profession comprise a separate factor.

3.2.THE PROCESS OF CAREER CHOICE

3.2.1. Time of though about medical profession

Identifying with the profession in early childhood is of special significance in the process of medical professional socialisation. A majority of the respondents 56.8% (275/484) thought of becoming a doctor before the age of 14; 40.7% (197/484) thought of it in Secondary School, and 2.5% (12/484) did so after the school-leaving exams.

Those who thought of becoming doctors before the age of 14 (275 people) differed from their peers in numerous aspects in regards to professional socialisation. This manifested itself concerning their motivations: they felt themselves more suitable, they did not decide on the subjects involved in the application and they were more influenced by doctors around them, especially so with those who had doctors in their family (Table 4).

The coincidence with the data of a study published in 1957 is interesting. In that study, 24.0% of the students thought of becoming a doctor while they were under the age of 10; in our study, the corresponding figure was 29.6%. Merton *et al.* described such people as

Table 3. Most characteristic factors of medical career choice motivations (n = 503).

Factors	Factor loading	Variance explained
Factor 1 ("careerism")		21.21%
Entrance subjects	0.64	
School grades	0.65	
High prestige	0.67	
Well-paying profession	0.59	
Books, filmes	0.44	
Factor 2 ("altruism")		16.21%
Helping profession	0.66	
Aptness	0.54	
Working with people	0.76	
Own illness	0.44	
Factor 3 ("idealism")		11.38%
Medical example	0.74	
This is all he or she knew of	0.76	

'born with a stethoscope in their ear', who appear as 'eternal' medical students during the training, despite the different, constantly changing social and economic circumstances. In Merton *et al.* and the current study, 18% and 18.7%, respectively, of the students decided that they wanted to choose the medical profession before starting secondary school [4].

3.2.2. Time of decision

Most students 69.2% (348/503) decided irreversibly to become a doctor while in secondary school, 18.7% (94/503) decided before the age of 14, and 12.1% (61/503) did so after the school-leaving exam.

The participants who irreversibly decided to become a doctor before age 14 (94 people) differed from others who decided later, in numerous ways in their professional socialisation; similar to those who thought of becoming doctors before age 14. They felt themselves more suitable and they did not decide on the subjects involved in the application. They took rarely private tutorials for the admission exam. This age group has stronger vocation for the medical profession: they had never thought of another profession and never had a serious doubt about the correctness of the decision, and were sure to work as a doctor, and professional advancement will be important in getting a job in the future (Table 5).

Our results are supported by earlier Hungarian study results, too. A study from the 1970s found that one-third of the students made the final choice before the age of 14; in our study, this was 18.7% [16].

Table 4. The most significant differences between the students based on their age of having thought of medical profession first (n=484).

Important factors	The ones who thought of becoming a doctor before the age of 14 (275 people = 100%)	The ones who thought of becoming a doctor after the age of 14 (209 people=100%)
Motivation (it was important for the respondent to feel suited to this profession)*	199(72.36%)	115(55.02%)
Motivation (what the entrance subjects were not important) *	129(46.90%)	77(36.84%)
Motivation (it was important for the respondent a medical example) *	78(28.36%)	36(17.22%)
Strong identification with the profession (he or she never thought of another profession) *	137(49.81%)	58(27.75%)
Professional advancement (it will be important in getting a job in the future) *	202(73.45%)	119(56.93%)
There is at least one doctor in his/her family*	103(37.45%)	54(25.83%)
His / her father is a doctor**	44(16.00%)	22(10.52%)
Among grandparents there is at least one doctor *	28(10.18%)	3(1.43%)

*$p<0.005$
**$p<0.05$

Table 5. The most significant differences between the students regarding the date of the final decision (n=503).

Important factors	The ones who decided irreversibly to become a doctor before the age of 14 (94 people = 100%)	The ones who decided irreversibly to become a doctor after the age of 14 (409 people=100%)
Motivation (it was important for the respondent to feel suited to this profession) *	77(81.91%)	248(60.63%)
Motivation (what the entrance subjects were not important) *	61(64.89%)	154(37.65%)
Individual preparation (rarely took private tutorials for the entrance exam) *	32(34.04%)	74(18.09%)
Confidence (never had a serious doubt about the correctness of the decision) *	85(90.42%)	312(76.28%)
Strong identification with the profession (he or she never thought of another profession) *	68(72.34%)	134(32.76%)
Professional advancement (it will be important in getting a job in the future) *	76(80.85%)	257(62.83%)
Vocation (he or she is sure to work as a doctor) *	69(73.40%)	220(53.78%)

*$p<0.005$

3.2.3. Thinking of other profession

Before making the final choice for the medical profession, 59.8% (301/503) considered and 40.2% (202/503) had never considered choosing another profession.

Most students, 59.8% (301/503), could mention other careers that they had been thinking about. They were allowed only three answers in responding to this question. The careers mentioned most often were teaching, other liberal arts, or law. This was followed

Table 6. The most significant differences between the students, regarding the thinking of another profession (n=503).

Important factors	The ones who never thought of another profession (202 people=100%)	The ones thought of another profession (301 people = 100%)
Motivation (it was important for the respondent to feel suited to this profession) *	146(72.27%)	179(59.46%)
Satisfaction (would choose the medical profession again) *	169(83.66%)	211(70.09%)
Confidence (never had a serious doubt about the correctness of the decision) *	176(87.12%)	221(73.42%)
Perseverance (did not want to quit the university) **	166(82.17%)	222(73.75%)
Vocation (he or she is sure to work as a doctor) *	126(62.37%)	163(54.15%)

*$p<0.005$
**$p<0.05$

by some kind of training in the natural sciences or technical field, namely engineering, biology or other health science career, for example, veterinarian and pharmacist professions.

Those who had never thought of another profession (202 people), differed significantly from their peers in the following aspects: they felt themselves more suitable, willingly chose the medical profession, rarely had a serious doubt about the correctness of the decision, wanted very rarely to quit the university, and were more certain about working as a doctor (Table 6).

4. Discussion

In step with the aims of our research it may be stated that it is characteristic of the medical profession that a good proportion of the students may indeed be deemed 'eternal'; early childhood identification with the medical profession is characteristic of many of them. This may be indicated and identified by early consideration of the medical profession and by the early decision to become a doctor. The fact that many of the students never even considered another profession also illustrates this point. Significant differences in professional socialisation can be demonstrated between those identifying with the profession in early childhood and those taking to the profession later.

More than half of the students thought of becoming a doctor in their childhood. They are more idealistic than the individuals who considered this profession later. Our data support that the appearance of thoughts in childhood, which is influenced by doctors living within the family or in the neighbourhood. However, this influence is not present at the final decision.

It is true that the final decision in childhood is only typical for a fraction of students, but they are more committed. More than half of the students never seriously considered another profession. They were also characterized by a stronger sense of vocation.

It is an important difference that the early thought, the early decision and the fact that the student has not thought of any other profession, come together with the feeling of suitability.

They didn't think of a different profession, which is typically a characteristic of early thoughts and decisions.

Despite the fact that motivation studies are usually performed on first-year students, often shortly after the start of university, when they are presumed to be still uninfluenced by the value system of the medical society, the results of our study with students in more senior classes correspond with the findings of foreign studies. Altruism is the major motivation of the students, followed by more 'rational' arguments in support of this career [12,14].

According to a more recent American study, carried out in 1991, the motivational categories most often mentioned by first-year students are "patient care" and the "relationship with patients", collectively summarised as "helping others" [8].

A Norwegian study had the same results in describing the motivations, emphasising the "people", "status/security" and "natural sciences" motivational orientations [9].

Comparison with dental students reveal that the motivations of students in general medicine coincide with our results but differ from those of dental students, who are much more motivated by "status and security" and "the nature of their occupation", while students of general medicine are driven by the categories of "career opportunity", "patient care" and "working for people". Altruistic motivations are the most important for students of general medicine: "person-oriented" motives and "the desire to care for and help others" [10].

Other study showed that, the most important characteristic of the students is altruism, which they can not separate from prestige, money and success [17].

Despite the influence of the socio-economic changes in medical work, circumstances and motivations have not changed significantly in recent decades. The processes of medical socialisation documented in classics remain remarkably unchanged 40 years later [7].

The deeper understanding of this phenomenon is not the aim of this study. A more exact conclusion could be given by a more detailed analysis of professional socialisation.

Our results point out that the students can be differentiated regarding their career choice motivations, and their circumstances of career choice too. This is important in continuously shaping the student's sense of professional identity. In this process the behavioural sciences and the elective courses, which can be found at different Medical Universities, have an important role [7,18-20].

Our results are useful for the education and the selection of students. The students should be informed about the risks of early decisions and about the overly altruistic motivations, because these can lead to burnout when they face reality later on.

Our research can be continued:
It would be beneficial to do a longitudinal study on the professional socialisation of those who make early or late decisions about being a doctor.

It would be purposeful to look at the relationship between bad health or burn out, with the early decision of becoming a doctor and professional sosialisation.

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