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DESIRABILITY OF MEDICINE AS A PROFESSION IN DEVELOPING COUNTRIES: THE CASE OF TURKEY

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Desirability of medicine as a profession in developing countries: The case of Turkey

Medicine has always been an appealing profession. However, some studies have shown that the medical profession in Turkey appeared to lose some of its appeal around the 1990s. The purpose of this study was to determine to what extent young people currently prefer the medical profession in Turkey as an example for developing countries.

This descriptive study aims to evaluate and compare the selection and preferences of candidates between medical and industrial engineering programs in state universities between 1985 and 2009. The main indicators used in this study was the "success rank" of the candidates, that refers to the candidate's placement in the list of student-scores sorted in descending order, and further grouped into 100. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 15, and percentage distribution and chi-square tests were applied.

There were 21 medical faculties in state universities in 1985; this number reached 53 in 2009. The success rank of registered students decreased between 1985 and 2000 and then increased continuously thereafter. A significant difference between faculties in terms of the registration rate of the students who scored in the top 3% was determined in all years evaluated in this study ($p<0.05$).

This study clearly shows that although medicine was less popular among university candidates before 2000, it gradually gained in popularity, reaching its highest levels in 2008 and 2009.

L'attrait de la médecine comme profession dans les pays en voie de développement : le cas de la Turquie

La médecine a toujours été une profession attractive. Cependant, certaines études ont montré que la profession médicale en Turquie semblait perdre un peu de son attractivité au cours des années 1990. Le but de cette étude est de déterminer dans quelle mesure les jeunes gens choisissent actuellement la profession médicale en Turquie comme exemple pour les pays en voie de développement.

Cette étude descriptive tente d'évaluer et de comparer la sélection et les préférences des candidats entre les programmes médicaux et les programmes d'ingénierie industrielle dans les universités publiques entre 1985 et 2009. Les indicateurs principaux utilisés dans cette étude étaient le "rang de succès" des candidats, qui fait allusion au placement du candidat dans la liste des résultats des étudiants classés dans l'ordre décroissant puis groupés par 100. Les données ont été analysées en utilisant l'Ensemble Statistique pour les Sciences Sociales (Statistical Package for the Social Sciences, SPSS), version 15, et la distribution en pourcentage et des tests de chi2 ont été appliqués.

Il y avait 21 facultés médicales dans les universités publiques en 1985; ce nombre est passé à 53 en 2009. La réussite des étudiants inscrits a diminué entre 1985 et 2000 puis a augmenté ensuite continuellement par la suite. Une différence significative entre les facultés du point de vue du taux d'enregistrement des étudiants qui réussissaient dans les premiers 3 % a été déterminée pour toutes les années retenues dans cette étude ($p < 0.05$).

Ce travail montre clairement que bien que la médecine soit moins populaire parmi les candidats universitaires avant 2000, elle a gagné progressivement en popularité, en atteignant ses niveaux les plus hauts en 2008 et 2009.

I- Introduction

Choosing a profession is one of the most crucial decisions in a person's life. The individual's characteristics, knowledge, personal interests, expectations, and values all affect the decision-making process (1). Every year in Turkey, approximately 1.5 million candidates take the University Entrance Examination, compete against their peers, and according to their level of success on the exam, choose their future professions. In accordance with the current rules, the graduates of "science" programs in high schools can select medicine, which is one of the highly preferred programs in this country (2).

Medicine has always been an appealing profession. However, some studies have shown that the medical profession in Turkey appeared to lose some of its appeal around the 1990s, after which period the engineering programs grew in popularity (3). The "Human Resources for Health Report in Turkey", published by the Supreme Council of Higher Education and the Ministry of Health (4), stated that the number of medical students did not increase in conjunction with the country's needs. This situation is perceived as being due to the loss of attractiveness of the medical profession (5-6).

The purpose of this study was to determine to what extent young people currently prefer the medical profession in Turkey.

2- Material and method

This descriptive study is a continuation of a previous research done in 2001 by Uner and Oztek (3), and it aims to evaluate and compare the selection and preferences of candidates between medical and industrial engineering programs in state universities between 1985 and 2009.

High school graduates, before selecting their preferences for future professions, are obligated to take a national university entrance exam. Their "final scores" are calculated by a complex method that considers both the scores on the exam itself as well as their cumulative performance in high schools (7). The main indicator used in this study was the "success rank" of the candidates, rather than crude "final scores". The "success rank" refers to the candidate's placement in the list of student-scores sorted in descending order, and further grouped into 100 (i.e., presented as percentiles). Accordingly, "students in the top 1% of success rank" are those whose final scores were better than 99 percent of all students. In this research, the success ranks published by the Student Selection and Placement Center were used (8-17). In the study, we compared the success ranks of medical students to that of industrial engineering students, for each year from 1985 through 2009, based on the proportion of students within the top 1% or 3% in each of the two types of schools.

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 15, and percentage distribution and chi-square tests were applied.

3- Results

There were 21 medical faculties in state universities in 1985; this number reached 53 in 2009. The number of industrial engineering programs was 20 in 2000, and had expanded to 26 in 2009. The total number of students registered in state medical faculties in 1985 was 4987, and this increased to 6964 in 2009. The number of students registered in state industrial engineering faculties was 587 in 1985, which increased to 1567 in 2009. During this period, all available positions in medical and industrial engineering faculties were filled (Table 1).

The success rank of registered students decreased between 1985 and 2000 and then increased continuously thereafter. As seen in

Table 1, 58% of the students registered in medical faculties in 1985 had scored in the top 3%. This figure decreased to its lowest level (7.5%) in 1998 and increased to its highest level (100%) in 2008 and 2009.

Regarding the industrial engineering programs, 33.6% of the registered students scored in the top 3% in 1985: the percentage was highest (67.8%) in 1996 and lowest (17%) in 2009. In contrast to medical faculties, the percent of registered engineering students scoring in the top 3% increased between 1985 and 1999, but started to decrease in 2001, reaching its lowest level in 2009.

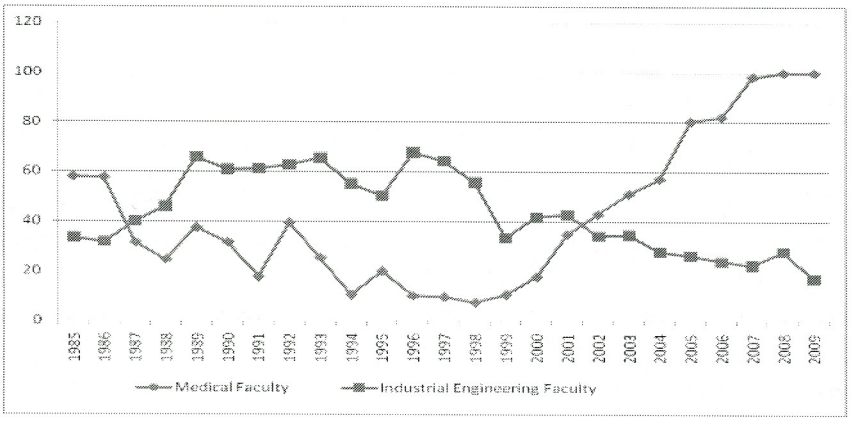
Table 1

The number of students registered in the medical and industrial engineering faculties in state universities between 1985 and 2009 who scored in the "top 3%" (n) and the percentage of this number to the total number of students who entered the corresponding faculty in the same period (N).

Year	Medical Faculty			Industrial Engineering Faculty		
	N	n	%	N	n	%
1985	4987	2892	58.0	587	197	33.6
1986	4899	2832	57.8	600	191	31.8
1987	4901	1549	31.6	600	241	40.2
1988	3842	949	24.7	612	282	46.0
1989	4500	1692	37.6	501	331	66.0
1990	4799	1521	31.7	776	473	60.9
1991	4815	852	17.7	763	468	61.4
1992	4910	1944	39.6	892	560	62.8
1993	4866	1241	25.5	912	597	65.5
1994	4986	524	10.5	974	539	55.3
1995	4599	924	20.1	931	469	50.4
1996	4616	466	10.1	901	611	67.8
1997	4325	424	9.8	1020	657	64.4
1998	4407	331	7.5	1268	708	55.8
1999	4542	481	10.6	1564	524	33.5
2000	4299	765	17.8	1143	479	41.9
2001	4344	1517	34.9	1122	479	42.7
2002	4333	1858	42.9	1154	396	34.3
2003	4622	2364	51.1	1142	396	34.7
2004	4582	2620	57.2	1195	333	27.9
2005	5205	4186	80.4	1245	328	26.3
2006	4569	3745	82.0	1194	287	24.0
2007	4513	4430	98.2	1225	276	22.5
2008	5959	5959	100.0	1405	394	28.0
2009	6964	6964	100.0	1567	266	17.0

A significant difference between faculties in terms of the registration rate of the students who scored in the top 3% was determined in all years evaluated in this study ($p<0.05$). The percentage of candidates registered in the industrial engineering faculties who scored in the top 3% was higher in the 1990s but this changed in the 2000s. The lowest (7.5%) percent of candidates who were registered in medical faculties and scored in the top 3% was seen in 1998, while the highest (100%) rates were seen in 2008 and 2009. For industrial engineering, this percent was lowest (17%) in 2009 and highest (67.8%) in 1996 (Figure 1).

Figure 1
The percentage of students in the top 3% who registered in medical and industrial engineering faculties in state universities over the period 1985-2009



A further analysis showed that in 1985, only 6.8% of the students who were registered in medical faculties were in the top 1%, 34.6% were in the top 2% and 16.6% were in the top 3%. None of the state medical faculties registered students from the top 1% between 1996 and 1998. In this case, even though there were a few students in the 99th percentile who were registered in medical faculties, the percentage was accepted as zero. It was observed that in 2008, 42% of the medical students were in the top 1% and 90.9% were in the top 2%. These figures show how

the quality of medical students increased gradually, reaching its highest level in 2008 and 2009.

Regarding the industrial engineering programs, 18.6% of the students were in the top 1% and 15% were in the top 3% in 1985. The highest (38%) percentage of candidates in the top 1% who were registered in the industrial engineering programs was seen in 1996 and the lowest (8.6%) in 2009 (Table 2).

Table 2
The distribution of the success rank of the students who were registered in the medical and industrial engineering faculties in state universities between 1985 and 2009

Year	Medical Faculty				Industrial Engineering Faculty			
	1%	2%	3%	>3%	1%	2%	3%	>3%
1985	6.8	34.6	16.6	42.0	18.6	-	15.0	66.4
1986	6.9	31.0	19.9	42.2	18.3	13.5	-	68.2
1987	3.3	11.9	16.4	68.4	26.7	13.5	-	59.8
1988	4.7	10.7	9.3	75.3	26.1	13.2	6.7	54.0
1989	9.6	9.5	18.5	62.4	22.0	28.1	15.9	34.0
1990	4.6	5.8	21.3	68.3	35.0	11.0	14.9	39.1
1991	4.5	6.0	7.2	82.3	35.0	11.6	14.8	38.6
1992	8.4	2.1	29.1	60.4	31.3	10.4	21.1	37.2
1993	4.3	6.7	14.5	74.5	34.9	26.0	4.6	34.5
1994	3.1	5.3	2.1	89.5	30.1	5.4	19.8	44.7
1995	2.8	10.6	6.7	79.9	32.0	6.2	12.2	49.6
1996	-	4.0	6.1	89.9	38.0	17.8	12.0	32.2
1997	-	3.8	6.0	90.2	35.3	26.9	2.2	35.6
1998	-	3.8	3.7	92.5	28.1	17.8	9.9	44.2
1999	2.5	5.3	2.8	89.4	19.7	4.5	9.3	66.5
2000	2.7	5.6	9.6	82.1	22.8	12.7	6.4	58.1
2001	6.7	4.3	23.9	65.1	23.3	12.9	6.5	57.3
2002	8.1	16.9	17.9	57.1	22.6	1.6	10.1	65.7
2003	8.1	19.0	24.1	48.8	14.6	9.9	10.2	65.3
2004	7.7	30.4	19.1	42.8	13.1	10.3	4.5	72.1
2005	16.6	26.1	37.7	19.6	12.4	9.7	4.2	73.7
2006	19.6	33.1	29.3	18.0	13.8	10.2	0.0	76.0
2007	26.4	34.8	37.0	1.8	10.1	9.9	2.5	77.5
2008	42.0	48.9	9.1	-	9.5	8.0	10.5	72.0
2009	29.2	28.5	42.3	-	8.6	7.2	1.2	83.0

4- Discussion

This study clearly shows that although medicine was less popular among university candidates before 2000, it gradually gained in popularity, reaching its highest levels in 2008 and 2009. In 2008 and 2009, 100% of the students registered in medical faculties

were among the top 2% of all candidates. Prior to 2000, industrial engineering had been the most popular profession.

Several factors can be cited as contributing to this change. While the exact reasons will be determined by other researches and in-depth studies, there are some clues that can be mentioned.

The economic recession may have had an effect on the increase in popularity of the medical faculties. Turkey experienced an economic recession between 1994 and 2001. In 1995, the number of students registered in medical schools doubled in comparison with 1994 registrations. The situation was repeated after 2001, when it was observed that the number of students in the top 3% entering medical faculties had increased. After 2001, the score required for eligibility to enter medical faculties was increased (18). According to the report prepared by the Ankara Chamber of the Turkish Medical Association, in times of economic recession, public services decrease and unemployment increases, and there is a concomitant increase in inequality in the use of medical services, increase in drug prices and deterioration in medical services (19). Under these circumstances, young people tend towards professions that guarantee their future professional lives. In Turkey, all medical faculty graduates (young physicians) are obligated to work in public institutions for several months to years according to where they will work. For this and other reasons, medicine seems to be one of the most guaranteed professions in Turkey.

Socioeconomic factors also have an effect on the increasing number of students preferring medical faculties. In developed countries, as the economic outlook improves, interest in the medical profession decreases in comparison to other jobs. According to the "50 most appealing jobs list" published in 2010, it was stated that the "Creativity and Service Sector" and "Computing and Technology Sector" were more favorable than the medical profession (20), and "Biomedical Engineering" and "Web System Profession" were predicted to be the most

favorable jobs in the near future (21). In Turkey, "Molecular Biology and Genetics", "Electrical and Telecommunication Engineering", "Psychology", "Sociology", "Public Administration and Political Science", "Human Resource Management", and "Strategy Expertise" are considered to be the most promising jobs in the immediate future (22).

In 1999, per capita income in Turkey was $ 4.222 and medical expenditure per capita was $186. In 2007, these values had increased to $ 9.221 and $ 553, respectively (23). Even though an increase in per capita income and good economic progress were observed in the last decade, the medical profession remained popular among the most successful students. It can be thought that because the economic progress in the country has not yet been reflected in society, the medical profession is still viewed as the most secure means of employment.

In a study conducted in England, medical students had different motives for selecting the medical profession, which included the opportunity to use their personal capabilities and a personal interest in a specific medical field (24). In the United States, one in every ten young adults still considers the medical profession the most favorable job (1). In a study conducted in Finland with the participation of 1818 physicians, it was found that besides the variety of job opportunities, there were other effective factors in their choice of profession, such as the opportunity to take care of people, the reputability of the job, the high quality of medical faculties, and the good salary (25). A survey conducted among medical students in Turkey cited personal interest and moral acquisition as the basic factors behind their preference for the medical profession.

In one study (4), it was stated that the increase in the number of students in medical schools does not parallel the increase in medical school faculty members. This situation should not be viewed as a decrease in interest in medical faculties.

An interest in a faculty can be understood by looking at the fullness of the quota for that department and the success level of the students who entered that department. As shown in this study, all available spaces in medical faculties have been filled in recent years, and the most successful students according to results of the Student Selection Exam have chosen the medical faculties. This further shows that interest in medical faculties has been increasing annually.

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