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Greek medical students' career choices indicate strong tendency towards specialization and training abroad

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Abstract

The aim of the study was to investigate the career choices, location preferences and criteria among medical students in Greece. We applied a questionnaire-based analysis using a sample of 591 students of four out of seven Greek Medical Schools. The sample included students of all academic years. The vast majority of students wish to specialize (97.6%), while general practice gathered a very low percentage (1.7%). The scientific challenge (61.4%) and interaction with patients (60.6%) seem to be the major influencing factors for most of the students' specialty preferences, whilst less common variables influencing career choice are the high demand/supply ratio for certain health services (40.4%), the income potential (31.4%), the active tempo (26.2%) and prestige (15%). 70.3% of those asked consider the possibility of specializing abroad. The low concern of Greek medical students for general practice reveals today's drastic deficiency in Greek primary health care. Such a situation will escalate, unless targeted strategies to produce more general practitioners are adopted. Furthermore, the results reflect a lower education and organizing level urging students to specialize abroad. The National Health System (NHS) should be reformed towards a rationalistic distribution of the medical specialties and medical workforce.

Keywords: Career choice; Specialties; Education; Medical undergraduate; Primary health care; Greece

1. Introduction

During the past 50 years medical science has undergone an enormous evolution due to massive clinical and laboratory research accompanied by technological development. Medical knowledge continuously expands, leading inevitably to specialization and subspecialization. In today's modern western civilization, specializing is a basic element of medical practice [1]. Following the same medical standard, the Greek National Health System (NHS) as well as the Medical Schools' curricula were reformed towards this pattern of specialization [2]. The Greek Health Care System can be described as a "mixed" system, borrowing

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elements from both the Bismark model (financed mainly by social insurance) and the Beveridge model (financed mainly by state taxes). The funding system is generally open-ended and mainly led by demand [3]. Greece has the highest proportion of private health care funding in the EU, one of the highest expenditures on health among OECD countries (9.9% of GDP in 2003) and the fourth lowest proportion of public health expenditure (approximately 5.08% of GDP in 2003) [4]. The percentage of subsidiary private insurance is continuously increasing as an addition to compulsory public insurance. While patients who access public hospitals are covered by public health insurance, many still have to pay hefty additional informal payments. This hidden economic activity represents a large proportion of Greek private health expenditure [5]. Health care in Greece suffers from lack of credibility, low income satisfaction, oversupply of physicians in "prestigious" medical specialties (e.g. surgeons) and educational heterogeneity [6].

The Greek constitution stipulates that higher education is provided free in state institutions and that private universities are prohibited. A Greek medical undergraduate takes 6 years to complete his school's curriculum. In principle, the first 3 years are spent in a preclinical program studying basic sciences, followed by the next 3 years of clinical education and training spent mainly in hospitals. Following graduation, graduates register to their local Medical Committees and undertake what is known as *agrotikon*—compulsory rural service equivalent to the British NHS's pre-registration house officer. This involves 1 year of general practice in the Greek counties and villages. By having completed this 1-year, practitioners are eligible to apply for a residency program. Acceptance into specific specialties is a long waiting process depending on the demand of the specialty and the availability of a position at the chosen university or general hospital. Although some specialties such as anesthesiology and forensic medicine have no waiting lists, most of the other specialties demand 2, 3 or sometimes even 12 years of waiting to start a residency, especially in university hospitals or large urban centres [7]. Lately, the Ministry of Health is considering the possibility of a national examination, in order to urge practitioners to a wider range of specialties and control these long waiting lists.

Making a career choice and deciding to specialize or not is a complicated procedure orientated by social influences, but even more by the overall medical school culture and experiences [8,9]. Numerous studies have demonstrated differences among students regarding their preference of medical specialty [10–12]. The objective of the present study was to investigate the career choices, decision-making processes, specialty location and criteria reported by Greek medical students. The need for such a study arose from the unavailability of any reports to that effect from Greece.

2. Methods

The study was conducted at four out of seven major Greek Medical Schools (University of Athens, University of Thessaly, University of Ioannina, University of Patras) and was addressed to both pre-clinical and clinical students. Every student was given a number according to the official enrollment lists that had been kindly provided by each of the four Medical Schools. Six hundred and fifty students were randomly selected by a computerized method to participate in the sample, a number that represents approximately 12% of the total number of students enrolled in all 6 academic years. To avoid the Greek "inactive student" bias [13], students who have delayed their studies beyond the normally required period were not included in this study.

A structured, written questionnaire was administered to each selected medical student. Most of the questions had a multiple choice character and covered apart from the socio-demographic profile, career choices and criteria. Students also provided data about the possibility of specializing abroad, location preferences and their opinion of general practice. Their responses were coded and all calculations were performed with SPSS-PC V11.0 Software.

3. Results

Five hundred and ninety one students returned the questionnaire (response rate 90.9%, 291 males, 300 females, mean age 21.6 years, S.D. 2.5). Table 1 lists all questions and responses.

The results showed that the vast majority of students (577 respondents, representing 97.6% of the 591 participants) wish to specialize. Only 10 (1.7%) respondents (5 males and 5 females) stated that their first preference

Table 1
Study's questionnaire (translated from Greek)

1. Age	Mean age: 21.6 ± 2.5 years				
2. Sex	Male 291 (49.2%)	Female 300 (50.7%)			
3. Academic year	First 103 (17.4%) Fourth 105 (17.8%)	Second 99 (16.8%) Fifth 96 (16.2%)	Third 97 (16.4%) Sixth 91 (15.4%)		
4. Do you wish to specialize?	Yes 577 (97.6%)	General practitioner 10 (1.7%)	No 4 (0.7%)		
5. If yes, choose up to three criteria that influence the most your specialty choice	I want to interact with patients 358 (60.6%) High-income potential 186 (31.5%)	I want to avoid patient interaction 24 (4.1%) High demand and low supply of particular health services 239 (40.4%)	Social prestige 89 (15%) Scientific challenge/ Wide variety of patient problems 363 (61.4%)	Active tempo 155 (26.2%) Short time required to begin residency 84 (14.2%)	Relaxed tempo/flexible working hours 114 (19.3%) Other 63 (10.6%)
6. Do you consider the possibility of specializing abroad?	Yes 415 (70.3%)	No 146 (24.7%)			
7. If yes, write the country you are considering the most	U.K. 196 (33.2%)	U.S.A. 138 (23.4%)	Other 81 (13.7%)	No answer 30 (5.0%)	
8. If yes, what are the main reasons that make you consider a residency program abroad?	The long waiting period before entering a residency in Greece 242 (40.9%)	The higherlevel of education abroad 304 (51.4%)	The higher income abroad 110 (18.6%)	Other 39 (6.6%)	
9. Which of the following opinions on general practice find you in agreement? (choose as many as you wish)	It is a basic and very important component of the NHS 237 (40.1%) It is preferred by doctors with limited scientific prowess 164 (27.7%)	It is not prestigious 291 (49.2%) It is not profitable 139 (23.5%)	It is not scientifically challenging/ interesting 225 (38.1%)	Young doctors should be encouraged to select it as a career choice 182 (30.8%)	

Percentages in parentheses represent the rate percent to the study's 591 participants.

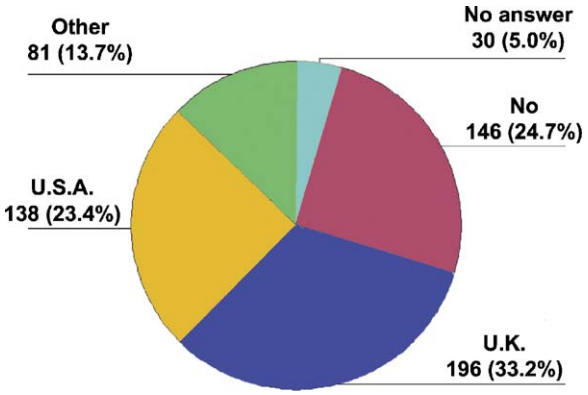

Fig. 1. Do you consider the possibility of specializing abroad and if yes, where?

was general practice, while 4 (0.7%) do not intent to follow a medical specialty (including general practice). Specialty preference was influenced by the scientific challenge for 363 (61.4%) students, while 358 (60.6%) specified the interaction with patients as a motive. Of all respondents, 239 (40.4%) reported that they were influenced by the high demand and low supply of particular health services. Specialty choice is also determined by the income potential for 186 (31.5%), the active tempo for 155 (26.2%) and prestige for 89 (15%) of respondents. In all, 291 students (49.2%) believe that general practice is non-prestigious.

A high percentage (70.3%) considers as a basic option the possibility of specializing abroad. Of the 591 respondents, 33.2% would like to specialize in the U.K. and 23.4% wish to specialize in the United States (Fig. 1). A major reason of this prospect, for 304 students (51.4%) was the higher level of education abroad, while for 242 (40.9%) it was the long waiting period before entering a residency in Greece.

4. Discussion

This is the first reported study of this kind in Greece. It reveals the career choices and decision-making processes of medical students in Greece. Analysis of results concludes to valuable information, evaluating the mentality and attitude of Greek medical students, as well as the advantages and disadvantages of the Medical Schools' curricula and those of the entry process in a residency program.

Students' career choices and specialty preferences have been extensively studied in multiple foreign universities because of their critical role in the implementation and planning of a successful health system. In our study, more than 97% of the students wish to specialize, while approximately half of them would not consider general practice because it is perceived to be non-prestigious. This finding is at variance with similar studies in the US [14–16], Canada [17] and in most countries of the European Union [18], where general practice is a more popular and favorable career choice. In Greece there is a substantial shift away from general practice as a career choice. This shift is, partly, attributed to the underestimated role of general practice within the Greek NHS. It may also be due to the fact that until recently patients could access specialist services directly [19], thereby rendering the role of the general practitioner less important. Although in most modern western health systems 40–50% of the doctors are general practitioners, the relevant percentage for Greece is 1.5%. Recent studies have demonstrated today's deficiencies in primary health care, with the need for a 619% increase in Greek generalist physicians [20]. Moreover, the Medical Schools' curricula offer little exposure to primary health care, contributing further to the students' low interest for general medicine. The small proportion of students choosing general practice indicates that the current drastic deficiency of trained primary health care physicians will escalate, unless targeted strategies are adapted. To reverse this trend, Greek academic institutions need to raise the respect and prestige of generalist physicians [21]. General practice can be promoted by emphasizing its varied- and thus challenging-scope of practice and societal orientation. Students should be informed of the low supply and rising demand for general practice services, as an incentive for a generalist career preference. Towards this direction, medical schools need to shift medical education to a primary care setting [22]. Since experiences at medical school are extremely strong determinants of attitudes to the medical specialties [23,24], educational strategies such as seminars during the second or third academic year [25], an attachment in general practice during the final year of the medical school [24] and appropriate career counseling [25] could have a significant impact towards primary care career choices.

Our results suggest that career choices are mostly influenced by the scientific challenge, the interaction with patients and the "health market" demands. The income potential and status within the community showed a low influence on Greek students' career preferences. While the relationship between students' debt and specialty choice remains unclear [26], the absence of tuition fees in Greek Universities, increased parental financial contributions and extremely rare indebtedness [27] could explain the low importance of high-income potential on Greek medical students' career selection.

Another interesting finding in the present study was that approximately 70% of the students would consider the possibility of specializing abroad. Such a high percentage reflects the inefficient level of postgraduate studies and residencies in our country. Additionally, the long waiting periods before starting residency training discourage young doctors, leading them, either to change their career preference or seek a residency program abroad. It should be noted that only 14.2% of students consider the waiting period required to begin a residency as an important criterion of their specialty preference. This may indicate that Greek medical students prefer to emigrate rather than adjust their career choices to the Greek waiting lists. Therefore, emphasizing the small waiting period as an incentive towards general practice would be largely ineffective. The loss of young home trained doctors from the Greek medical workforce should be a major concern of policy makers. To reverse this trend, the Ministry of Health and other appropriate large scale institutions should consider reforming the Greek NHS [28], with the improvements in studies, examinations for entry in a residency program and career orientation especially towards general practice, where dramatic deficiencies exist.

The lack of general practitioners causes serious deficiencies in Greek outpatient care, poor organization and low development of primary health care. The Greek NHS is facing severe financial and managerial difficulties. Public hospitals have serious annual deficits while the earnings of private hospitals are based on the over-exploitation of the social and private insurances [6]. In addition to the public and individual health hazards, the oversupply of specific medical specialties and the ensuing medical unemployment and low income are contributing to the destabilization of the insurance system through the mechanisms of corporate sponsorship leading to prescription biases and physician induced artificial demand for medical services. Knowledge of young doctors' career choices will help planners to anticipate whether future service requirements in different specialties such as general practice will be met from Greek sources. An effective health system depends on sufficiency, quality and rationalistic distribution of health professionals in all medical specialties and in all geographical locations [29]. Professional quality standards in specialist medical practice should be maintained. Such a policy might facilitate a more predictable workforce supply and limit the out going doctors.

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