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WEB PAPER

Choosing a medical specialty – Study of Finnish doctors graduating in 1977–2006

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Abstract

Background: Choosing a medical specialty is an important element predefining a physician's career and life. Although there has been some research in this area of interest, there has not been much research where the profession has been researched as a whole, or where trend data over different generations has been presented.

Aim: The aim of our study was to ascertain the motives affecting physicians' choice of a medical specialty.

Methods: The study cohort comprised random sample of 7758 doctors who were registered in Finland during the years 1977–2006. Altogether 4167 questionnaires were returned, giving a response rate of 54%. An electronic questionnaire was used in data collection, supported by a traditional postal questionnaire.

Results: Of the respondents, 76% thought the diversity of the field had affected their choices of specialty considerably or very much. For physicians under 35 years old, especially the good example set by colleagues (48%), and opportunities for career development (39%) were more important motives compared to those of older physicians.

Conclusions: According to this study, diversity of the work is the main motivating factor affecting physicians' choices of specialty. Especially, younger physicians follow the example set by more experienced colleagues.

Introduction

Choosing a medical specialty is one of the most important elements predefining a physician's career and life. Therefore, the motives affecting this choice are of great interest. Although there has been some research in this area of interest, there has not been much research where the profession has been researched as a whole, or where trend data over different generations have been presented. Also, there has been a quite large increase in the proportion of female physicians in recent years, especially in Finland where more than a half of the doctors are already women (Finnish Medical Association 2010). This also gives a good opportunity to analyse the possible changes in motives when choosing a medical specialty.

It has previously been found that an interest in people is the most important factor when a young student is entering medicine (Hyppölä et al. 1998). In other words, the most important motive in taking up medical studies is the content of the field. Furthermore, the content of the work also seems to direct the choice of specialty during studies (Maiorova et al. 2008). This choice is also seen as a process evolving during medical training (Mihalynuk et al. 2006). Experiences during basic medical education are especially important for the majority of students, who are uncertain as to their career choice when entering medical school.

Nowadays, differences in on-call work and work–family balance play a more significant role than formerly in a young doctor's career decisions. Young doctors seem to set greater

Practice points

- Diversity of work is the main factor affecting choices of specialty
- Especially younger physicians follow the example set by more experienced colleagues when choosing a specialty
- Attitudes towards on-call load seem to divide physicians to some degree

value on family life and free time compared to older colleagues (Blades et al. 2000; Dumelow et al. 2000). In Finland, this could be at least partly due to the increase in the number of women entering the profession (Neittaanmäki et al. 1993; Heikkilä et al. 2009). Flexibility and quality of life are important factors for women physicians when choosing their career (Lambert et al. 2003; Lawrence et al. 2003). Women appear to some degree to choose specialties where part-time work is easier, and are also more willing to compromise on professional achievements within their work–family balance (Department of Health, National Health Service 2001; Drinkwater et al. 2008; Taylor et al. 2009). On the other hand, women seem to place less emphasis than men on medicine as a highly paid and high-status profession (Neittaanmäki et al. 1993). Nonetheless, young male physicians also seem to favour part-time work more than older physicians (Heiligers & Hingstman 2000).

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In Finland, a medical specialty is a university degree. The university post-graduate programmes usually last 5 to 6 years, although after graduation from medical school it usually takes approximately 10 years to graduate as a specialist (Heikkilä et al. 2009). Almost all young Finnish doctors are specializing or intend to specialize (Heikkilä et al. 2009). In Finland, there are 49 medical specialties, general practice being among them, with a post-graduating programme lasting 6 years. A medical student can work as a substitute for a physician after 4 years of study in a medical school.

The aim of our study was to establish the various motives affecting Finnish doctors' choice of medical specialty. We wanted to know what were the most important motives of Finnish doctors as a whole when choosing a specialty, and whether there were any differences in these motives between genders, age groups, or groups of specialties.

Methods

The Physician 2008 Study was undertaken in collaboration with the University of Kuopio, University of Tampere and the Finnish Medical Association. It followed previous studies done in 1988, 1993, 1998 and 2003. The survey compiled information of the social background, work history, placing on the labour market and career plans of the medical profession in Finland. It also examined physicians' views of basic and further education, values and professional identity. The questionnaire was mainly created before the 1988 Study. At that time, the study group could not find any international surveys discussing the subject, so the group had to create the questionnaire by itself. Most of the questions have been in the same form since then because of comparability, although some new questions have been added during the years. In the 2008 Study, there were altogether over 350 items in the questionnaire. The basic report of the Physician 2008 Study has been published by Finnish Ministry of Social Affairs and Health (Heikkilä et al. 2009). The article pertains to the cohort of doctors graduating in 1997–2006.

In the Physician 2008 Study, the basic population consisted of all medical doctors who were registered in Finland during the years 1977–2006 ($N=16,192$). The study cohort consisted of a random sample of 7758 doctors. An electronic questionnaire was used in the first stage of data collection. Traditional postal questionnaire was sent to those whose e-mail addresses were not available and those who did not respond to the electronic questionnaire. Both postal and e-mail addresses were collected from the database of Finnish Medical Association, which contains all physicians licensed in Finland. Of the study cohort, 1454 doctors' (approximately 20% of the cohort) e-mail address was not available.

Respondents were asked: 'If you are a specialist or specializing, to what extent did the following items affect your choice of specialty?' and were presented with 11 items affecting their choice. The data were obtained by means of Likert five-point scale (1 = not at all, 2 = slightly, 3 = a fair amount, 4 = considerably, 5 = very much). The last two were defined as 'important' specialty choice motives.

We grouped the respondents based on gender, age and medical specialty. The age groups were under 35 years old,

35–44 years, 45–54 years and over 54 years old. These age groups can be seen as representatives of specializing doctors, young specialists, experienced specialists and senior specialists, although this division is not perfectly precise. The groups of specialty were operative, conservative, diagnostic, psychiatric and general practice. The contents of these groups of specialties are given in Table 1. General practice and occupational health are treated in the same group, as in Finland work in occupational health consists mainly in regular office visits of patients in work-life in all of their health problems, and is therefore largely comparable to general practice.

Analysis of the data was by SPSS 16.0.1 for Macintosh predictive analytics software. The data were analysed using cross-tabulation and χ^2 -test to test differences between male and female doctors, doctors in different age groups and doctors in the different groups of medical specialties.

Results

After a reminder, 4167 questionnaires were returned (2057 via electronic and 2110 via postal questionnaire), giving a response rate of 53.7%. The mean age of respondents was 45 years, and 65.7% were women. The median year of entry to medical school was 1983. Women responded to some degree more actively than men. However, the differences were small and the respondents were representative of the study population in terms of age, sex and place of work.

Men and women to some extent chose different specialties (Table 1). Male doctors preferred operative specialties compared to females. On the other hand, female doctors had chosen general practice and psychiatric specialties more often compared to males. In conservative specialties, the proportions were fairly even.

When considering individual specialties within the specialty groups used in this study, the most common field for both

Table 1. Choices of specialty groups (%) of Finnish male and female doctors graduating in 1977–2006.

	Males <i>n</i> = 1129	Females <i>n</i> = 2187	Total <i>n</i> = 3316
Operative specialties ^a	30.8	23.7	26.1
Conservative specialties ^b	28.1	27.7	27.8
Diagnostic specialties ^c	9.5	6.6	7.6
Psychiatric specialties ^d	9.6	13.8	12.4
General practice ^e	22.1	28.2	26.1

Notes: ^aAnaesthesiology and intensive care medicine, cardiothoracic surgery, gastroenterological surgery, general surgery, hand surgery, obstetrics and gynaecology, ophthalmology, oral and maxillofacial surgery, orthopaedics and traumatology, otorhinolaryngology, paediatric surgery, plastic surgery, urology and vascular surgery.

^bCardiology, child neurology, clinical haematology, clinical pharmacology and pharmacotherapy, dermatology and allergology, endocrinology, gastroenterology, geriatrics, infectious diseases, internal medicine, nephrology, neurology, oncology, paediatrics, phoniatrics, physical and rehabilitation medicine, public health, respiratory medicine and allergology, rheumatology and sports medicine.

^cClinical chemistry, clinical genetics, clinical microbiology, clinical neurophysiology, clinical physiology and nuclear medicine, forensic medicine, pathology and radiology.

^dAdolescent psychiatry, child psychiatry, forensic psychiatry and psychiatry.

^eGeneral practice and occupational health.

genders was general practice, which was chosen by 15% of male and 19% of female respondents. Of male doctors, 15% had chosen surgery and 13% internal medicine. Of females, 14% had chosen psychiatry and 9% occupational health. Within specialties, 89% of gynaecologists, 74% of paediatricians, 72% of doctors in occupational health and 71% of general practitioners were women.

Operative and conservative specialties were more popular in younger age groups compared to older age groups (Table 2). Thus, 33% of the youngest compared to 23% of the oldest age group of doctors had chosen an operative specialty, and 31% of the youngest compared to 24% of the oldest had chosen a conservative specialty. On the other hand, the oldest doctors compared to the youngest had chosen a psychiatric specialty and general practice more often. In diagnostic specialties, the differences between age groups were quite small.

In this study, the diversity of the work was the most significant motive in doctors' choices of specialty, as presented in Table 3. As many as 76% of respondents thought it had affected their choices of medical specialty considerably or very much. Good prospects of employment were an important consideration for 47% of respondents, and positive experiences in the specialty during undergraduate training for 45% when choosing a specialty. These were followed by the good

example set by colleagues and reasonable on-call duty. Altogether 29% of respondents replied that coincidence had affected their choice of specialty to a considerably or great extent. In this study, opportunity to carry out research and high-quality specialization programmes were the least notable reasons for choice of specialty.

There were some significant differences between genders in respect of how they had chosen their specialties (Table 3). Opportunities for career development, opportunity to secure a good income and opportunity to carry out research were significantly more important motives for male doctors compared to females. On the other hand, reasonable on-call load was a significantly more important motive for female doctors.

When examining differences in motives between doctors in different age groups, we found that the diversity of the work, positive experiences in the specialty during undergraduate training, the good example of colleagues in the specialty, reasonable on-call load, opportunities for career development and high-quality specialization programme were all significantly more important motives for the youngest age group when choosing a specialty (Table 4). On the other hand, coincidence was notably less important for the youngest age group compared to others. There was no significant difference between groups when assessing the opportunity to gain a good income.

In analysing answers from different groups of medical specialties, several differences emerged. The six most frequently chosen motives, and motives bringing out the greatest differences between groups, are shown in Figure 1. The diversity of the work was the most important motive for doctors in most of the groups when choosing a specialty, doctors in diagnostic specialties being the only exception. Of doctors in diagnostic specialties, 58% thought it had influenced their choice considerably or very much, while 70% thought that reasonable on-call load was an important motive. A reasonable on-call load was also a significantly more important motive for general practitioners and doctors in psychiatric specialties compared to those in operative and conservative

Table 2. Choices of specialty groups (%) of Finnish doctors graduating in 1977–2006 in different age groups.

	Under 35 <i>n</i> = 526	35–44 <i>n</i> = 1081	45–54 <i>n</i> = 1257	55 and older <i>n</i> = 422
Operative specialties	33.1	25.6	24.7	23.0
Conservative specialties	30.8	31.0	25.5	23.5
Diagnostic specialties	7.8	7.1	7.5	8.5
Psychiatric specialties	5.3	11.2	14.0	18.2
General practice	23.0	25.1	28.3	26.8

Table 3. Proportions (%) of Finnish male and female doctors, and differences in proportions (% units) of male and female doctors graduating in 1977–2006 who answered 'Considerably' or 'Very much' to the question 'If you are a specialist or specializing, to what extent did the following items affect your choice of specialty?' in 2008, and statistical significance of the differences (*p*).

	Genders		Difference	<i>p</i>	Total <i>n</i> = 3413–3455
	Males <i>n</i> = 1184–1198	Females <i>n</i> = 2229–2258			
Opportunities for career development	32.9	21.3	11.6	<0.001	25.4
Opportunity to gain good income	34.2	26.9	7.3	<0.001	29.4
Opportunity to carry out research	22.3	15.4	6.9	<0.001	17.8
Positive experiences in the specialty during my undergraduate training	48.0	42.9	5.1	0.004	44.7
Good example set by colleagues in the specialty	45.0	40.7	4.3	0.014	42.2
Opportunities to work in the private sector	29.8	25.6	4.2	0.007	27.0
Good prospects of employment	49.3	46.0	3.3	0.066	47.1
High-quality specialization programme	15.4	14.0	1.4	0.276	14.5
By chance	28.1	29.5	−1.4	0.408	29.0
Diversity of work	74.9	76.5	−1.6	0.278	76.0
Reasonable on-call load	31.8	42.0	−10.2	<0.001	38.4

Note: The items are sorted according to the differences between genders.

Table 4. Proportions (%) of Finnish doctors graduating in 1977–2006 in different age groups who answered 'Considerably' or 'Very much' to the question 'If you are a specialist or specializing, to what extent did the following items affect your choice of specialty?' in 2008 ($n = 3372$ – 3411), and statistical significance of the differences (p).

	Under 35 $n = 536$ – 542	35–44 $n = 1104$ – 1114	45–54 $n = 1299$ – 1317	Over 54 $n = 433$ – 442	p
Diversity of work	83.9	74.6	74.5	74.3	<0.001
Positive experiences in the specialty during my undergraduate training	52.4	43.2	43.0	44.2	0.001
Good prospects of employment	52.1	46.2	46.0	47.5	0.090
Good example set by colleagues in the specialty	48.4	44.7	39.0	37.4	<0.001
Reasonable on-call load	43.4	41.8	35.4	32.7	<0.001
Opportunities for career development	39.0	22.9	22.4	25.1	<0.001
Opportunity to gain good income	33.4	29.1	28.7	29.8	0.226
Opportunities to work in the private sector	33.2	26.5	25.2	27.9	0.005
High-quality specialization programme	21.3	14.7	11.6	13.6	<0.001
By chance	19.6	29.3	33.0	26.1	<0.001
Opportunity to carry out research	19.0	18.0	16.7	17.8	0.642

Note: The items are sorted according to the answers of the youngest age group.

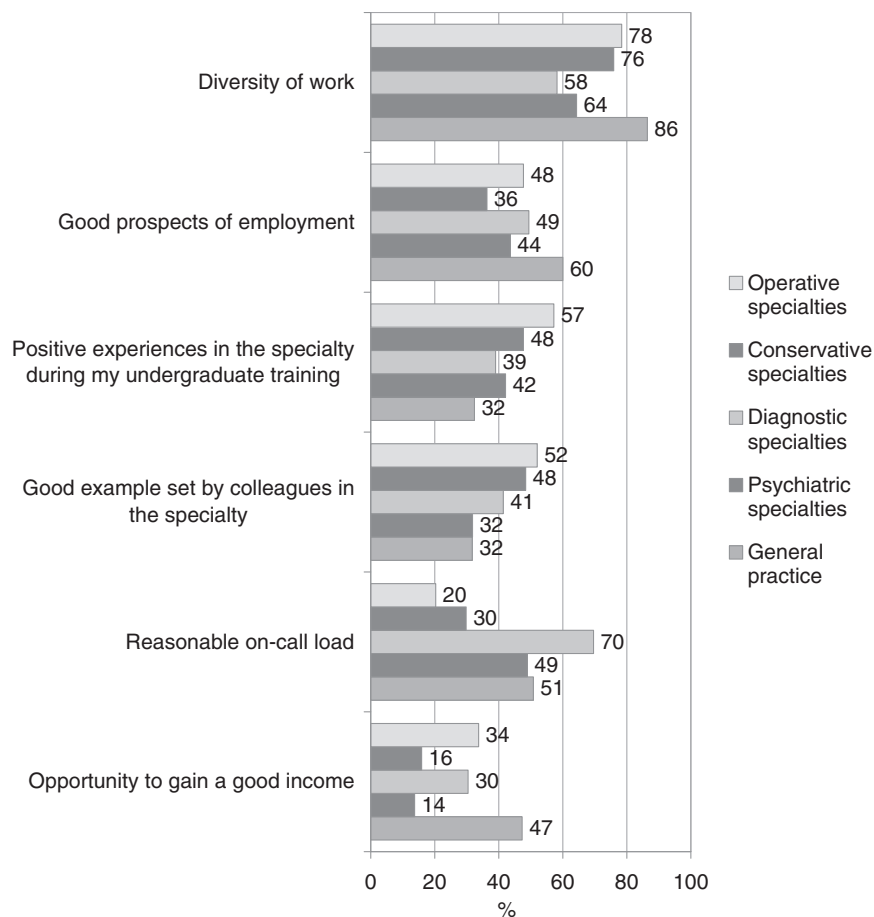


Figure 1. Proportions (%) of Finnish doctors graduating in 1977–2006 in different specialty groups who answered 'Considerably' or 'Very much' to the question 'If you are a specialist or specializing, to what extent did the following items affect your choice of specialty?' in 2008 ($n = 3253$ – 3292). The six most frequently chosen items.

specialties. Positive experiences in the specialty during undergraduate training and the good example set by colleagues in the specialty were more significant motives for doctors in operative and in conservative specialties compared to those in psychiatric specialties and general practice.

In respect of the other items, only 4% of general practitioners thought that opportunity to carry out research was an important motive when choosing a specialty, while 39% of those in diagnostic specialties, 27% in conservative specialties, 17% in operative specialties and 12% in

psychiatric specialties considered this to be an important motive.

Discussion

According to our findings, the diversity of work was the most important motive for most doctors when choosing a medical specialty. Positive experiences in the specialty during undergraduate training and the good example of colleagues in the specialty were both important motives for a half of all respondents. Reasonable on-call load seemed to direct the choice of speciality to some degree.

In the Physician 2008 Study, the study population contained 83% of Finnish working-age doctors. Male doctors had a somewhat lower responding rate than females. However, this does not substantially affect the findings of this study and the results presented here can be generalized to the Finnish medical profession. In responding to the questionnaire, respondents had to recall what might have happened a long time ago. It has been proved that important events in life remain in the memory quite well (Dex 1991). Since the decision to take up a specialty can be seen as such an event, one can assume that items related to it are remembered well. However, this may involve certain flaws.

The percentage of responses 'considerably' and 'very much' among under 35 years old physicians was significantly higher in a fairly large proportion of issues in this study. This may derive from the shorter time elapsed from the decision on specialty, when thoughts about it are still quite current. On the other hand, it may also be due to the younger generations' different made of answering this kind of questionnaire. For this reason, the differences between age groups may not be as great as would appear from this study.

The diversity of tasks was the most important motive when choosing a specialty for all respondents except those in diagnostic specialties. For them, it was the second most significant motive, after reasonable on-call duty. This is an important finding in that it seems to be similar regardless of age, gender or specialty. There has recently been debate on the need for a more specialized work force in view of the rapid progress of social systems and health care (Sheldon 2003; Stitzenberg & Sheldon 2005). Even then, doctors in different areas of medicine seem to regard their work as interesting and versatile. Not surprisingly, the diversity of the work is emphasized especially among general practitioners, whose work involves all areas of medicine.

Especially to the youngest generation of physicians, the example given by older colleagues during studies and first training or working experiences emerged as important motives in choosing a specialty. In the youngest age group, the proportion of physicians in operative and conservative specialties was larger than in the oldest age groups. At the same time, the importance of positive experiences and good example when choosing a specialty were also significantly higher in the groups of operative and conservative specialties. There is also some previous evidence to suggest that first clinical experiences and the medical school and its teachers' attitudes have a role in young physicians' choice of specialty (Goldacre et al. 2004; Mahoney et al. 2004; Maiorova et al.

2008). It is thus not a matter of indifference what kind of role model the teachers in medical universities and other colleagues give to medical students and young physicians. Quite to the contrary, the fascination and example set by teachers and mentors of medical students and young physicians may have a critical influence on younger colleagues' career choices. However, it has previously been noted that also personality may influence medical students' choice, and that career satisfaction differs between specialties (Vaidya et al. 2004; Mohammadreza & Zuckerman 2008; Leigh et al. 2009). This should also be taken into consideration when advising young doctors to find their identity and career.

For the youngest age group, the opportunity for career development, diversity of the work, positive experiences in the specialty during studies and for the two youngest age groups reasonable on-call load, were markedly more important motives compared to those of older age groups, all indicating that younger physicians give more thought to content and flexibility in work. On the other hand, there were also fairly marked differences in specialty choices between age groups. In younger age groups, a larger proportion had chosen operative or conservative specialties, and a smaller proportion psychiatric specialties and general practice compared to older age groups.

Reasonable on-call load was a significantly more important motive for female than for male doctors, while male doctors were clearly more career-oriented. These differences might constitute one of the reasons behind the difference in career choices found earlier between genders (Lambert et al. 2006). However, despite these differences, it can be noticed that differences between genders were over all much smaller than between age or specialty groups. Therefore, it can be said that medical specialty and generation specify physician more than gender.

Reasonable on-call load was also a more significant motive for the two younger age groups of doctors compared to older age groups. It has also previously emerged that flexible working, control over working pattern and personal time, all have an effect on young doctors' career choices (Blades et al. 2000). On the other hand, the youngest generation of physicians seem to choose operative specialties more often than older physicians despite the fairly heavy on-call duties of these specialties. It would appear that while for some the on-call duties have an effect when choosing a specialty, for others other reasons such as the content of the work or interest in the specialty are more important motives, surpassing the pressure of on-call duties. In any case, these findings may indicate changes in work-life when more women have entered medicine, and attitudes of younger generations towards work seem to be changing.

A good specializing programme and a good possibility to carry out research were not major items in choosing a specialty, although for doctors in diagnostic fields research was a significantly more important item compared to the other groups. The reason for this does not emerge from this study and requires further research.

According to the present findings, diversity of the work is the main motivating factor affecting physicians' important career choices. In other words, physicians would still appear to be deeply devoted to their work. On the other hand, attitudes

towards on-call load seem to divide physicians to some degree. Even so, particularly female and younger physicians, and also physicians in diagnostic and to some degree in psychiatric specialties and in general practice, seem to appreciate reasonable on-call duties. There is, thus, an increasing need to generate different models to add flexibility to on-call work, and thereby improve control over working pattern and reduce the stressfulness of work–life. Furthermore, especially, younger physicians follow the example set by more experienced colleagues, which places teachers in medical schools in an excellent position to influence their students career choices by giving a good example.

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