Motivations influencing the specialty choices of medical school graduates

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ABSTRACT

Background: *Growing national concern about distortions in the size, specialty composition, and availability of the physician workforce -especially after "cultural revolution"- has evoked challenges in Iran.*
Purpose: *To determine various factors that influence medical graduates choices for residency program.*
Methods: *All applicants for residency program in Mazandaran university of Medical Sciences and Health Services completed the Medical School Graduation Questionnaire, and rated each factor using 0 to 4 Likert-type scale. Factors' ratings were also compared across applicants of different residency program, and demographic variables.*
Results: *The top two factors rated as having strong influences were ones related to interest in helping people (rated 3.07), and intellectual content of the specialty (rated 3). Malpractice insurance cost has the least influence (rated 0.98). Most of men preferred independence, whereas most of women preferred predictable working hours. Opportunity to make differences in people's life influenced the specialty choices of usual participants, whereas those who used war veterans quota paid more attention to independence and exercise of social responsibility. Patient contact factors were less important to graduates who chose diagnostic specialties. Also, there was a significant association between the participants' age and four factors.*
Conclusion: *These graduates based their specialty preference heavily on the opportunity that the specialty affords to help people, and intellectual content of the specialty. Knowing the hierarchy of influences on graduates' motivations should help education strategists determine what experiences and perceptions must change if a different mix of specialty decision is to result.*
Keywords: SPECIALTY, MEDICAL SCHOOL, SARI, MAZANDARAN

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Introduction

Growing national concern about disproportionate size, composition, and availability of the specialist - especially after "cultural revolution" - has evoked challenges in the ministry of health, and medical education in Iran.
If any action should be taken in this regard, Measure for a better understanding of medical school graduates' motivations that influence their specialty choices would be undoubtedly among the highest priorities.

Material and Methods

In 1997, for application of residency program in Iran, each applicant was to select a university for his education and choose two fields, according to the order of their preference.

Subjects of the present study were all applicants for specialty in Mazandaran University of medical sciences. All who took their entrance examination at Sari medical faculty were requested to fill out two questionnaires if they will. The first questionnaire together with a short explanation of the purpose of the study comprised of some questions regarding the respondents' demographic data, and their first choice of specialty. Then they were asked to rate 35 factors influencing their specialty choice (sole specialty choice or first choice) in the Farsi translation of modified version Medical School Graduation Questionnaire (GQ) of the Association of American Medical Collages.(1)The mean rating reported herein were derived from 0 (no influence) to 4 (major influence) scale that was used. At that time Sari medical faculty applied for six specialties: internal

medicine, pediatrics, general surgery, pathology, and radiology.

Results

Of the 152 medical school graduates, 150 (98.7%) completed the questionnaires. 102 (68%) of them were men, and 48 (32%) were women. Their age ranged from 26 to 38 years, with mean of 29.57±2.5, median of 29. The mean age of graduates who chose the same specialty showed no significant difference. The percentage of female participants in each specialty choice was: Obstetrics and gynecology 100%, pediatrics 55.5%, pathology 40%, radiology 34.4%, general surgery 13.3%, and internal medicine 9%.

Figure 1 shows the mean ratings of the 35 factors in ascending order of influence on specialty choice, using the 0 to 4 scale mentioned above. The top two factors rated as having strong to major influences were ones related to "interest in helping people" (mean Likert score=3.07/4), and "intellectual content of the specialty" (3/4). The 150 graduates rated that "malpractice insurance costs" as having the least influence on their specialty selections (0.98/4). There was a significant association between the graduates' age and four factors: "interest in helping people" (P=0.005, X2=76.54, df=48), "challenging diagnostic problems" (0.001, 6.73, 8), encouragement from faculty" (0.03,67.54,48), and "job security" (0.05, 64.67,48;Figure 2).

Significant gender differences were displayed concerning choice of specialty, most men preferred "independence" (0.03, 10.21, 4), whereas most women preferred "predictable working hours" (0.02, 11.09,4).

We also studied the relationship between those participants who used war veterans' quota and factors influencing their choice of specialty. "Opportunity to make differences in people's life" influenced in the specialty choices of usual participants more than the participants who used war veterans' quota (P = 0.05, X2 = 15.37, df = 8). Those participants who used war veterans' quota paid more attention to "independence" (P = 0.05, X2=15.39, df=8), and "exercise of social responsibility" (P = 0.01, X2= 20.05, df = 8). It should be mentioned that war veterans, prisoners of war, injured veterans, and the family members of the martyrs of the revolution are entitled to use war veterans' quota. To simplify the analysis, the 150 respondents declaring their planned certification in the 6 specialties were sorted into three groups: medical specialties, surgical specialties, and diagnostic-focused specialties.

Medical specialties are defined here as internal medicine and pediatrics; Surgical specialties are general surgery and obstetrics and gynecology; and diagnostic-focused specialties are radiology and pathology.

Then 35 factors influencing specialty selection were categorized into ten operational categories and the ratings compared across specialty groups, as shown in Table 1.

There was only one significant difference in mean ratings of factors between specialty groups.

The two most and one least influential factors noted above were given about the same weight across specialty groups, although graduates intending to pursue the medical specialties gave lower ratings to them." Patient contact factors" were significantly less important to graduates opting for support specialties (P = 0.04, F=5.6, df = 2 & 6)."Intellectual opportunities", "match of personal interests/skills", and "helping/social responsibility" were rated higher in descending order by all future specialists. The least important factors for all of the specialty groups were "leadership and prestige", "economic issues", and "residency issues".

Discussion

Altogether, 150 Iranian medical school graduates based their specialty decisions heavily on the opportunity that the specialty affords to help people; and intellectual content of the specialty. Whereas, in the USA, type of patient problems encountered; the presumed fit of their personality, skills, and ability with the selected field; the opportunity that the specialty affords to help people; intellectual content; challenging diagnostic problems; and diversity in diagnosis and therapy were strong to major influences respectively.

For the 150 GQ respondents overall, lifestyle variables, encouragement and role modeling, prestige and authority factors, economic influences, and income prospects were given relatively low ratings, which is somewhat similar to the USA study (1). However, when the rating of factors is sorted by residency programs, it is obvious that there were differential affects on graduates decisions.

The importance of patient contact, primary care, patient education, and prevention by graduates

Figure 1. ascending order of mean ratings that medical school graduates gave to factors influencing their specialty choices

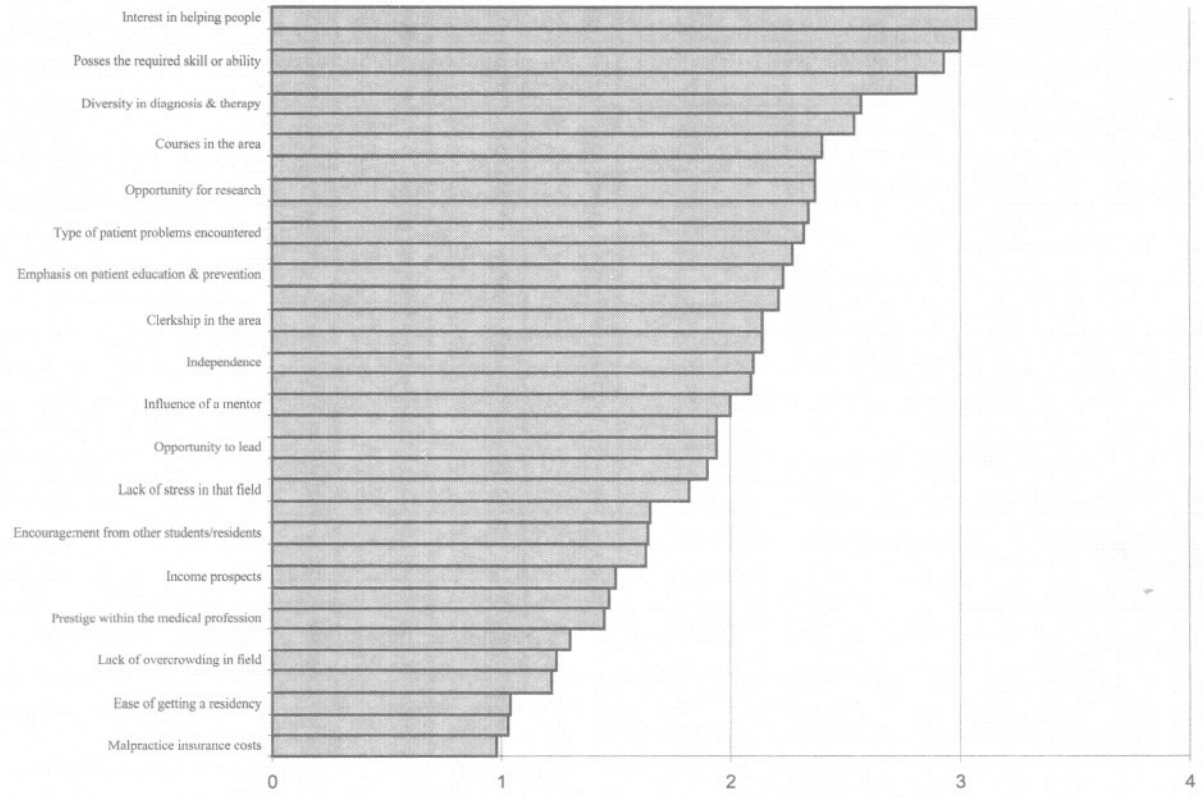
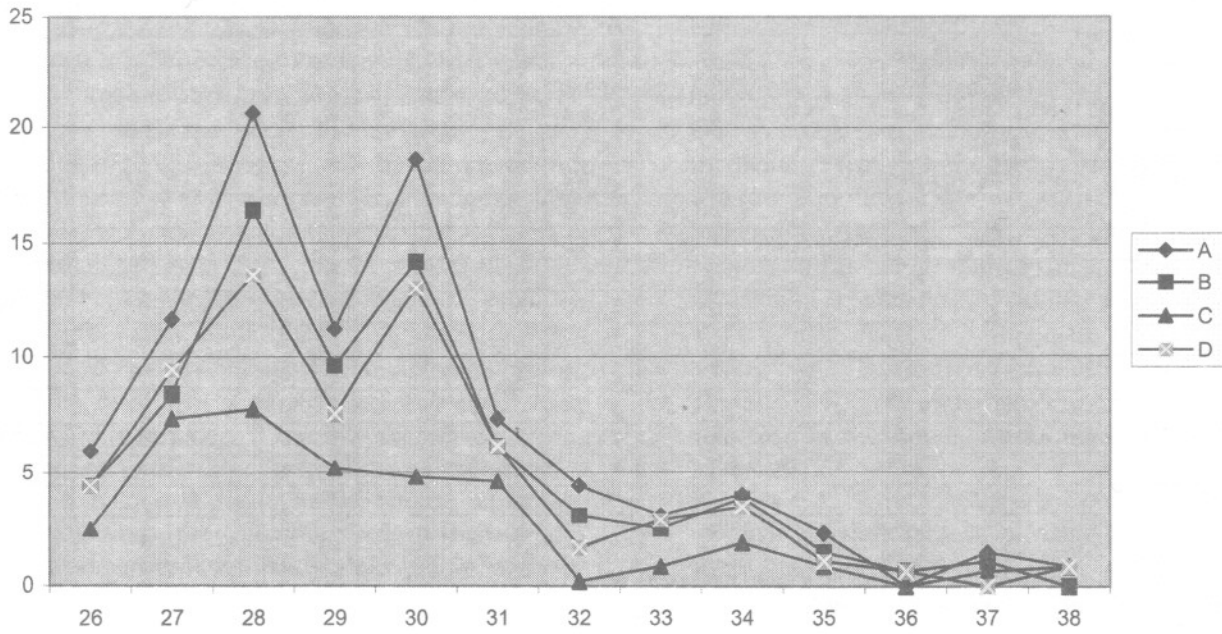


Figure 2. Relatioship between medical school graduates' age and factor influecing their specialty choices



A = Interest in helping B= Challenging diagnosis C= Faculty encouragement D = Job security

TABLE 1. Mean Ratings* of Factors Influencing Specialty Choices of Medical School Graduates, by Specialty Group†

Factors	*All sp1*	*Sup 2 sp1*	*Sur3 sp1*	*Med4 sp1*	*F(df)*	*P*
Intellectual opportunities	**2.58**	**2.77**	**2.57**	**2.41**	**0.65(2&6)**	**0.55**
Intellectual content of the specialty	3.00	3.22	3.10	2.72		
Challenging diagnostic problems	2.37	2.52	2.22	2.37		
Opportunity for research	2.37	2.58	2.40	2.14		
Match of personal interests/skills	**2.45**	**2.47**	**2.52**	**2.38**	**0.1(2&12)**	**0.9**
Posses the required skill or ability	2.93	2.73	3.17	2.90		
Consistent with personality	2.81	2.78	2.73	2.93		
Diversity in diagnosis and therapy	2.57	1.80	2.60	2.32		
Type of patient problems encountered	2.32	2.31	2.40	2.25		
Minimum of uncertainties in diagnosis & therapy	1.63	1.72	1.72	1.47		
Helping/social responsibility	**2.41**	**2.45**	**2.54**	**2.24**	**0.2(2&6)**	**0.82**
Interest in helping people	3.07	3.08	3.20	2.94		
lives	2.27	2.40	2.43	2.00		
Exercise of social responsibility	1.90	1.90	2.00	1.77		
Clerkships/courses	**2.27**	**2.16**	**2.28**	**2.29**	**0.35(2&3)**	**0.73**
Courses in the area	2.40	2.14	2.51	2.52		
Clerkship in the area	2.14	2.18	2.06	2.18		
Patient contact	**2.13**	**1.81**	**2.36**	**2.21**	**5.6(2&6)**	**0.04**
Emphasis on patient education and prevention	2.23	1.93	2.46	2.32		
Type of patients	2.21	2.07	2.35	2.23		
Emphasis on primary care	1.94	1.43	2.28	2.11		
Lifestyle attributes	**1.95**	**2.11**	**1.89**	**1.87**	**0.43(2&15)**	**0.56**
Job security	2.34	2.32	2.26	2.44		
Sufficient time/flexibility for family Obligations	2.14	2.60	1.77	2.07		
Independence	2.10	1.55	2.33	2.42		
Predictable working hours	2.09	2.50	2.14	1.63		
Lack of stress in that field	1.82	2.35	1.50	1.62		
Not too demanding of time and effort	1.22	1.34	1.34	1.00		
Encouragement/role models	**1.83**	**1.67**	**2.02**	**1.78**	**0.67(2&12)**	**0.52**
Example(s) of a physician in this specialty	2.54	2.40	2.76	2.47		
Influence of a mentor	2.00	1.86	2.42	1.71		
Encouragement from participating physicians	1.65	1.50	1.67	1.80		
Encouragement from other students/residents	1.64	1.55	1.85	1.54		
Encouragement from faculty	1.30	1.07	1.43	1.38		
Leadership and prestige	**1.47**	**1.37**	**1.65**	**1.41**	**0.27(2&6)**	**0.76**
Opportunity to lead	1.94	1.65	2.08	2.11		
Prestige within the medical profession	1.45	1.55	1.48	1.32		
Desire for authority	1.03	0.90	1.38	0.81		
Residency issues	**1.25**	**1.26**	**1.33**	**1.17**	**0.24(2&6)**	**0.79**
Length of residency	1.47	1.57	1.44	1.40		
Lack of overcrowding in field	1.24	1.40	1.40	0.93		
Ease of getting a residency	1.04	0.83	1.16	1.20		
Economic issues	**1.24**	**1.41**	**1.20**	**1.10**	**0.34(2&3)**	**0.73**
Income prospects	1.50	1.80	1.36	1.33		
Malpractice insurance costs	0.98	1.03	1.04	0.87		

**.Mean rating as defined in text.*
†.Specialty groups as defined in text and given for decided respondents only.
1.Specialties 2.Support 3.Surgical 4.Medical

selecting generalist specialties (i.e. general family practice, general internal medicine, and general pediatrics) is well known (1,2,3,4,9). Income prospects were less important to graduates heading toward general medical specialties in the USA; so was the importance of research opportunities (1). Although this finding is somewhat similar, but it is not significant in our study. Patient contact and helping factors, the exercise of social responsibility, education and prevention, and primary care emphasis had less influences on graduates' choices of support specialties in both studies. Furthermore, lifestyle variables were rated as more important by graduates selecting the diagnostic-focused specialties than by those heading in other career directions in the USA, predilections noted previously by others (3,5-7,8,9). This finding was not significant in our study. Data suggest that medical students in California seem to be more concerned with issues of "controllable lifestyle" such as adequacy of family and/or leisure time, high level of stress, and amount of work and commitment (11). Although there is a great difference between malpractice insurance costs in the USA and Iran, this item had the least influence on specialty choices in both studies.

There was a descending influence of interest in helping people, challenging diagnostic problems, encouragement from faculty, and job security in specialty choices of older participants.

It seems that because of different roles of each sex in the society and family structure, male physicians pay more attention to independence, and females have more concerns to predictable working hours in our study. Whereas, in a Danish study, most women aimed towards relation-oriented specialties and most men aimed towards autonomy-oriented specialties (12). It is concluded that the growing proportion of women doctors could change the medical profession structure.

The influence of the 35 factors reported here are those affecting the specialty decisions of medical school graduates. While these motivations set the initial direction of graduates' residency training, the same factors may be seen as having different effects on graduates' specialty choices when reexamined in their light of events and experiences encountered during post-graduate education. In any case, knowing the hierarchy of influences on graduates' career intentions should help education strategies determine what experiences and perceptions must change if a different mix of specialty decisions is to result.

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