ARTICLE ORIGINAL/ORIGINAL ARTICLE

FACTORS INFLUENCING THE CHOICE OF SPECIALTY AMONG MEDICAL STUDENTS IN LEBANON

Beatrice KHATER-MENASSA, Stella MAJOR

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ABSTRACT • STATEMENT OF THE PROBLEM : We focus on graduating students from two medical schools in Lebanon to identify the proportions who select primary care careers, to highlight factors that are considered when making a career choice, and to compare these among primary care (PC) and non-primary care (NPC) candidates.

METHODS : Anonymous self-administered questionnaire was used to assess student demographics, chosen career, and perceived level of importance concerning 27 career influencing factors using a 5-point Likert scale.

RESULTS : 127 (97%) students responded. 53 (42%) students selected primary care. 20 (61%) of the females were in the primary care group. Among all, the most important factors scored (3.30 to 3.06) represent : "intellectual opportunities", "match of personal interest and skills" and "helping and social responsibilities". Least important factors scored (1.96 to 1.13) and represent : "encouragement/role models", "clerkships and courses", and "residency issues". "Diversity in diagnosis and treatment" and "emphasis on patient education and prevention" were significantly higher for the primary care career groups (p = 0.001, p = 0.001) and "working with new technology" significantly more important (p = 0.001) for the non-primary care group.

CONCLUSION : Among the students surveyed "intellectual opportunities", "match of personal interest and skills" and "helping and social responsibilities" were the most important criteria reported to influence their choice of career in medicine.

Khater-Menassa B, Major S. Facteurs influençant le choix de la spécialité chez les étudiants en médecine au Liban. J Méd Lib 2005 ; 53 (1) : 16-20.

RÉSUMÉ • PROBLÉMATIQUE : Dans une population d'étudiants en médecine, diplômés de deux facultés au Liban, nous déterminons la proportion de ceux qui choisissent une spécialité en médecine de première ligne. Les facteurs influençant le choix de la spécialité sont mis en relief et comparés dans deux sous-groupes : spécialité en médecine de première ligne ou non.

MÉTHODE : Un questionnaire anonyme portant sur les données démographiques, le choix de la spécialité et le degré d'importance perçue de 27 facteurs influençant ce choix, sur une échelle de Likert à 5 points.

RÉSULTATS : 127 (97%) étudiants ont répondu. 53 (42%) dont 20 (61%) parmi les femmes ont choisi une spécialité en médecine de première ligne. Les facteurs ayant l'influence la plus importante (scores entre 3,30 et 3,06) sont : « possibilités intellectuelles », « correspondant aux intérêts personnels et compétences » et « désir d'aide et sens de responsabilité sociale ». Les facteurs les moins influençants (scores entre 1,96 et 1,13) sont : « encouragements/modèle de rôle », « rotations et cours » et « problèmes relatifs au résidanat ». « Variétés des diagnostics et thérapeutiques » et « intérêt particulier dans l'éducation des patients et la prévention » avaient des scores significativement plus élevés dans le groupe de « médecine de première ligne » (p = 0,001, p = 0,001) alors que « utiliser les nouvelles technologies » était significativement (p = 0,001) plus important pour le groupe ayant choisi une spécialité en médecine de non première ligne.

CONCLUSION : Dans la population étudiée, les « possibilités intellectuelles », « correspondant aux intérêts personnels et compétences », « désir d'aide et sens de responsabilité sociale » étaient les facteurs ayant une influence importante pour le choix de la spécialité en médecine.

INTRODUCTION

Much has been hypothesized about the factors that influence medical students' choice of specialty. These factors have been analyzed in depth in the western literature to interpret preference for a specialty and to try to understand shifts in the choice throughout medical school years.

Changes in trends reflect a decrease in the percentage of US medical student graduates who choose careers in primary care. This drop has had important implications on the US physician workforce [1].

Although opinions vary on the optimal ratio of primary care to non-primary physicians, the consensus among leaders in medicine in the 1990's set this ratio at 50% [2]. In Lebanon 101 family physicians and 2711 general practitioners provide primary health care, whereas there are 6243 physicians who are registered and practice as specialists in various medical disciplines (2004 Medical Directory of the Lebanese Order of Physicians).

Department of Family Medicine, American University of Beirut Medical Center, Beirut, Lebanon.

Correspondent : *Dr Stella Major. Department of Family Medicine. American University of Beirut Medical Center. PO Box 11-0236. Beirut. Lebanon.*

Tel : *(961) 3 368 367* Fax : *(961) 1 744 464* Email : *smajor@aub.edu.lb*

Thus, there is an important imbalance in the proportions of physicians providing primary care versus non-primary care in the country.

Extensive research has been conducted on the factors influencing medical students' choice of career. For instance being female [3], having a "feeling type" personality [4], experiencing clinical rotations in primary care [5] are important factors for candidates choosing primary care careers.

Conversely, attaching importance to income [6] and prestige [7], having a "thinking type" personality [4], and preferring the perceived intellectual content of a specialty [8] were factors found to be favored by students choosing non-primary care careers.

As educators and family practitioners, in this study we are interested in determining the factors that are perceived as important for Lebanese medical students when choosing a clinical career. This information can help enhance our understanding of how students make career choices in medicine, and can help in the planning of strategies to make primary care more appealing to Lebanese graduating medical students.

METHOD

Graduating medical students from the American University of Beirut and the Saint-Joseph University were invited to participate in this study. These universities were selected as the site for this research for two reasons. Firstly, at the time the study was conducted, these were the only medical schools which emphasized training in primary care through their departments of family medicine. Secondly, these were chosen out of convenience, and as a pilot for future work in other medical schools in Lebanon.

An anonymous self-administered questionnaire was designed using items selected from the Medical School Graduation Questionnaire of the Association of American Medical Colleges [9]. It was pilot-tested for comprehension, clarity and reproducibility and was subsequently modified accordingly.

The questionnaire was distributed to the students at the end of their final exam and they were asked to complete it before leaving the examination hall. It addressed the student demographics, the specialty the student had chosen and the extent to which each of the 27 listed factors influenced the students' choice of specialty. Responses were rated on a five-point Likert scale where 1 signified "not important", 2 "of little importance", 3 "somewhat important", 4 "more important" and 5 "of major importance" respectively.

Table I lists the 27 career influencing factors which fall under the following headings : 1. match of personal interest/skills, 2. helping/social responsibility, 3. intellectual opportunities, 4. patient contact, 5. encouragement/role models, 6. lifestyle attributes, 7. clerkships/courses, 8. leadership and prestige, 9. residency issues and 10. economic issues.

TABLE I
FACTORS INFLUENCING THE CHOICE OF CAREERS BY CATEGORIES

CATEGORIES / Factors
1. MATCH OF PERSONAL INTEREST/SKILLS
• Consistent with personality
• Diversity in diagnosis and therapy
2. HELPING/SOCIAL RESPONSIBILITY
• Interest in helping people
3. INTELLECTUAL OPPORTUNITIES
• Intellectual content of the specialty
• Challenging diagnostic problems
• Opportunity for research
• Working with new technology
• Keeping options open for subspecialty
4. PATIENT CONTACT
• Type of patients
• Desire to do ambulatory care
• Emphasis on patient education and prevention
5. ENCOURAGEMENT/ROLE MODELS
• Role model of a physician in the specialty
• Opinion of other students/residents
6. LIFESTYLE ATTRIBUTES
• Sufficient time for family/personal activities
• Predictable working hours
• Lack of stress in the field
7. CLERKSHIP/COURSES
• Availability of residency program locally
• Availability of residency program internationally
• Ease of enrollment in residency program locally
• Ease of enrollment in residency program internationally
8. LEADERSHIP AND PRESTIGE
• Opportunity to lead
• Prestige of chosen specialty
9. RESIDENCY ISSUES
• Not enough field specialists
• Length and lifestyle of residency
10. ECONOMIC ISSUES
• Income prospect
• Malpractice insurance costs

ANALYSIS

For the purpose of the analysis, we divided the career choices into two groups : primary care (PC) and non-primary care (NPC). PC includes family medicine, pediatrics and internal medicine when no sub-specialty was indicated [10]. NPC includes all other entries. PC was not further subdivided because of small sample size.

Frequencies of demographics and choice of specialty, and mean rates of the factors were obtained. To compare the responses of students who chose PC with those who chose NPC, we used the nonparametric Kruskal-Wallis for bivariate analysis for all factors which scored at least 3 "somewhat important" in either PC or NPC groups. We considered a difference to be significant if $p < 0.05$.

RESULTS

One hundred and thirty-one students received a questionnaire. One hundred and twenty-seven students responded to the survey, giving a response rate of 97%. Ninety-four students (74%) were males and 33 (26%) females. The mean age was 25 yrs (range 23-30), and only 2% were married.

Fifty-three students (42%) selected a primary care career and 12 (23%) indicated family medicine specifically. Among the primary care career group, 33 (62%) were males and 20 (38%) females respectively. Of all the females surveyed, 20 (61%) chose a primary care career.

Table II reports the distribution of specialties chosen. Fifty-three (42%) students selected a primary care career. Among the primary care choices, family medicine and general pediatrics were equally second.

TABLE II
CHOICE OF CAREERS
AMONG LEBANESE MEDICAL STUDENTS

CAREER CHOICE	N = 127 (%)
PRIMARY CARE CAREERS	**53 (42%)**
Internal Medicine	29 (22.8)
General Pediatrics	12 (9.45)
Family Medicine	12 (9.45)
NON-PRIMARY CARE CAREERS	**74 (58%)**
Surgery and subspecialties	22 (17.3)
Internal Medicine subspecialties	17 (13.4)
Obstetrics and Gynecology	9 (7.1)
Radiology, Anesthesia, Laboratory Medicine	8 (6.3)
Pediatric subspecialties	5 (3.9)
OTHER	
Psychiatry	4 (3.1)
Hospital Management	3 (2.4)
Pathology	3 (2.4)
Genetics	2 (1.6)
Immunology	1 (0.8)

Table III shows the mean scores of the 27 factors in decreasing order of influence on career choice among all students, and among the primary care and non-primary care groups respectively. The most important factors with mean scores ranging from 3.30 to 3.06 among all students is represented by three main categories ; "intellectual opportunities", "match of personal interest and skills" and "helping and social responsibilities".

The least important factors with mean scores from 1.96 to 1.13 among all students is represented by the following three main categories ; "encouragement/role models", "clerkships and courses", and "residency issues".

The two main categories representing the majority of mean scores between 2.61 and 2.02 are : "patient contact" and "lifestyle attributes", respectively.

TABLE III
MEAN SCORES OF FACTORS INFLUENCING
CAREER CHOICE AMONG ALL, PRIMARY CARE (PC)
AND NON PRIMARY CARE (NPC) STUDENTS

FACTOR	Mean Score		
	All Students	PC	NPC
Consistent with personality	3.30	3.18	3.35
Challenging diagnostic factors	3.22	3.25	3.18
Intellectual content of the specialty	3.22	3.28	3.16
Interest in helping people	3.21	3.27	3.06
Keeping options open for subspecialty	3.21	3.11	3.32
Diversity in diagnosis & therapy	3.06	3.33	2.86
Working with new technology	2.82	2.2	3.26
Emphasis on patient education & prevention	2.61	3.05	2.39
Sufficient time for family & personal matters	2.60	2.72	2.65
Opportunity for research	2.59	2.42	2.59
Type of patients	2.58	2.83	2.12
Opportunity to lead	2.55	2.58	2.48
Predictable working hours	2.48	2.62	2.51
Desire to do ambulatory care	2.35	2.88	2.08
Role model of a physician in the specialty	2.26	2.16	2.23
Income prospects	2.24	2.01	2.26
Lifestyle during residency	2.10	2.22	1.86
Lack of stress in that field	2.02	2.2	1.87
Not enough field specialists	1.96	2.05	1.85
Ease of enrolment in residency program internationally	1.91	1.94	1.9
Availability of residency program internationally	1.84	2.38	2.48
Availability of residency program locally	1.81	1.96	1.59
Length of residency	1.63	1.9	1.48
Prestige of chosen specialty	1.55	1.35	1.53
Malpractice insurance costs	1.34	1.48	1.08
Ease of enrolment in residency program locally	1.34	1.5	1.11
Opinion of other students/residents	1.13	1.22	0.91

Bivariate analysis of all factors which scored at least 3 for either the primary care or the non-primary care group revealed "diversity in diagnosis and treatment" and "emphasis on patient education and prevention" to be significantly higher for the primary care career groups ($p = 0.001$, $p = 0.001$) respectively and "working with new technology" was found to be significantly more important ($p = 0.001$) for the non-primary care groups.

DISCUSSION

This study reveals that among our sample of graduating Lebanese medical students 42% opted for training in primary care disciplines, and of these, 9.4% specified family medicine. This compares well with recently published data which reports that 9.3% of graduating medical students from US medical schools selected family medicine in 2003 [11].

Our results reveal that there is agreement in 3 of the 6 most important factors influencing career choice among the Lebanese medical students surveyed and their western counterparts [8-9]. These are : "challenging diagnostic factors", "intellectual content of the specialty" and "diversity in diagnosis and therapy". In this study "intellectual content of the specialty" was important to both PC and NPC groups. There is a report which suggests that students, who opt for NPC careers, do so, because they perceive PC to lack in intellectual content [8].

As might be expected, students who selected PC careers attached most importance to "diversity in diagnosis and treatment" and "patient education and prevention".

Despite females representing only 26% of the study population, they represent 61% of the students who chose careers in PC. This gender distribution also agrees with reports from the western literature although female gender is not consistently predictive of a career choice [12].

In a recent study by Schafer et al. 86% of students considered "the positive physician example" as one of the factors which had the highest proportion of agreement among positive influences on specialty choice [8]. Some important characteristics in a role model are the role model's personality, and his/her teaching and clinical skills [13]. Furthermore there is evidence to suggest that role models influenced candidates choosing PC more than those choosing NPC careers [14].

In this study, the effect of the role model was perceived to be "little to somewhat important" among all students with very little variation in scores between the two subgroups. These findings are in contrast with the literature. Reasons to account for this difference are not clear and can benefit from further exploration.

Unexpectedly, income prospects were ranked in 16th position among all the factors with a mean score of 2.24 implying "of little to somewhat important". We had expected that the economic crisis prevailing in Lebanon may have a greater impact on student's choice of specialty in favor of more remunerative career options. Nevertheless, as is reported in US literature [6-7], in this study also, income was found to be a more important factor for those choosing NPC careers.

"Malpractice insurance costs" were among factors rated as having almost no influence on career choice. This may be explained by the fact that malpractice suits are still relatively rare in Lebanon in contrast to other parts of the world.

Although both "ease of enrolment in a residency program internationally" and "nationally" were perceived to be of little importance, the former ranked more important (1.91) than the latter (1.34) for all students concerned. The existing trend among Lebanese medical students is for them to try to register into career specialization programs outside the Lebanon, and in particular in the US. Data from the American University of Beirut Medical School Dean's Office reports that the proportion of MD graduates leaving for specialization training to the US increased from 17% in 2000 to 32% in 2001. However, with the mean scores being less than 2 this suggests that these Lebanese students who plan to travel abroad do not find competition for residency positions to be a factor important enough to influence their career choices. This increasing trend in medical students leaving Lebanon to travel and specialize abroad may explain the high score (3.21) which was given by all the respondents for the factor "keeping options open for subpecialty".

In contrast to US students who report prestige as one of the most important factors when choosing a career [7], this was rated as not important by the Lebanese students surveyed. Further investigations of the causes of this reported difference may be warranted.

Given the good response rate from the students surveyed, coupled with the absence of any previous reports on this subject in the literature, this study reports original data on the factors affecting Lebanese medical students' career choices. This study provides interesting preliminary information which can be further developed on by in-depth focus group discussions and wider follow-up surveys.

The study has several limitations. Although the items used in the questionnaire were selected from the literature, the questionnaire itself needs to be validated.

Although not a limitation in itself, the timing of data collection at the end of final exams may have meant that all the respondents were tired, and may have influenced the way they filled in the questionnaire.

As reported in the literature, grouping the PC specialties may in itself limit the interpretation of the results [15]. However, due to a small sample size, analysis of data without grouping would make these results uninterpretable.

This study reveals that among the Lebanese medical students surveyed, 42% chose careers in primary care. Categories which influenced career choices for all were "challenging diagnostic factors", "intellectual content of the specialty" and "diversity in diagnosis and therapy". For the PC group," diversity in diagnosis and treatment" and "emphasis on patient education and prevention" were significantly more important and for the NPC group "working with new technology" respectively.

Further research work is needed to produce a validated survey instrument which can be used to survey a wider sector of the Lebanese graduating medical student population. In addition, more in-depth interview techniques should be used in order to obtain results that can

be generalized, and to determine the reasons that account for the differences between the graduates from Lebanon and their peers from other parts of the world.

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العوامل المؤثّرة لاختيار الاختصاص الطبي عند طلاب الطب في لبنان

موجز: الاشكالية – في مجموعة طلاب الطب الذين نالوا شهادتهم من الجامعتين في لبنان، نجد نسبة لمن تختار اختصاصها في الطب من الدرجة الأولى. العوامل المؤثّرة في اختيار الاختصاص قد أبرزت وقورنت في مجموعتي فريقين أصغرين اختصاً في الطب من الدرجة الأولى أم لا.

الطرق – استبيان حيادي (مغفل) وُزّع وفيه المعطيات الديموغرافية، واختيار الاختصاص ودرجة الأهمية المستحصل عليها لسبعة وعشرين عاملاً.

النتائج – ١٢٧ طالباً (٩٧٪) أجاب منهم ٥٣ (٤٢٪) طالباً اختاروا من الدرجة الأولى، ومن الإناث ٢٠ (٦١٪) اخترن اختصاصاً طبياً من الدرجة الأولى. ومن العوامل الهامة المنجزة (٣،٣٠ – ٣،٠٦) هي «الاحتمالات العقلية» الملائمة للمصلحة والشخصية والجدارة وإرادة المساعدة والشعور بالمسؤولية الاجتماعية. العوامل الأقل تأثيراً (الحرز بين ١،٩٦ و١،١٣) هي: «تشجيع طريقة العمل»، «أشكال التشخيص والمعالجات والمصلحة الخاصة لإرشاد المرضى والوقاية» وهذه لها حرز بليغ أعلن في مجموعة أطباء الدرجة الأولى (إحتمال ٠،٠٠١ و٠،٠٠١) بينما استعمال التقنيات الحديثة كانت واضحة (إحتمال ٠،٠٠١) وأكثر اهتماماً في المجموعة التي اختارت اختصاصاً في الطب ليس من الدرجة الأولى.

الخلاصة – في مجموعة دراستنا فإن الاحتمالات العقلية تتفق مع المصلحة الشخصية والجدارة. الاهتمام بالمساعدة والشعور بالمسؤولية الاجتماعية كانا العاملان ذو التأثير المهم لاختيار الاختصاص في الطب.