



THE REASONS OF CHOOSING EMERGENCY MEDICINE RESIDENCY IN IRAN

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ABSTRACT

Introduction: Emergency medicine is a relatively new founded medical specialty, since its establishment in Iran 15 years ago, factors behind an interest to enroll in this medical specialty have not been evaluated.

Methods and materials: In this cross-sectional study, information was gathered in the format of a questionnaire gathering the residents' demographic information and the factors behind choosing emergency medicine as a specialty. A census was performed and many tests were used for data analysis.

Results: Four hundred emergency medicine residents participated in this study, 51.2% were men and 48.8% were women. The average age of male residents was 43.97 ± 5.17 while the average age of female residents was 38.6 ± 5.89 . The most significant factor behind tendency toward this field in all participating residents was clinical interest. There was a meaningful correlation between enrolling in this field due to the free time between shifts and lack of any other options and the residents' gender. Also there was a noticeable correlation between factors behind opting for this field such as good income and the possibility of being hired in the capital of a province and the age of residents.

Conclusion: This survey of motivational factors behind enrolling in emergency medicine can provide useful information for the betterment of this medical specialty.

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Introduction

Emergency medicine is a pioneering and newly founded field of medicine in Iran [1]. According to information gathered from educational facilities around the country, changes are occurring in the demographic characteristics of emergency medicine residents [2]. Therefore it's important to gather information about residents and the reason behind their inclination to this field, all in order to plan for the future and improve the quality of education in this field [3].

Recent studies have shown a substantial increase in the ratio of female residents and also their average age [4]. It's worth investigating the factors causing enrolment in this field due to recent demographic changes and the lack of a comprehensive study, this study was performed in order to discuss the factors encouraging choosing this medical specialty and to provide more countrywide information.

Materials and Methods

In this cross-sectional study, the statistical population consisted only of emergency medicine residents in Iran, between 2012 and 2015. The sampling method was a census and consistent with the society. Admittance criteria to the study were studying emergency medicine and informed consent to participate in the survey.

Instruments for collecting data consisted of a questionnaire and a multipart checklist. The first part of the questionnaire contained demographic information about the residents such as age, sex, marital status and the year of entry to the field. The second part had a list of motivational factors for selecting the field (including a main reason), which were designed with the help of literature review and input from assorted experts.

All four hundred questionnaires contained demographic information about the residents and also included some checklists consisting of motivational factors behind selecting emergency medicine as a specialty. The factors were (in order): The short duration of residency, Good income, Clinical interest, free time between shifts, possibility of finding occupation in the provincial capital, lack of different option.

At the end of the questionnaire, questions about the probability of reselecting this field provided the opportunity, work experience in emergency care before enrolment, incidence of deciding to quit the specialty sometime during the residency and whether they had enrolled in their city of residence. All of them were yes/no questions. The last question on the checklist was which subspecialty of emergency medicine is more necessary for our country.

To test the validity of the checklist a pilot was designed and the results were evaluated by experts. The checklists were sent to all educational departments of emergency medicine in Iran. The response rate was increased by calling emergency medicine education administrators directly. Other required information was gathered from other reliable databases.

In order to analyze the information, chi-square test, independent T test and the correlation coefficient of Pearson test was used. Consent was granted from all participants and all data was anonymous.

Result

In this study 400 checklists were evaluated. 205 (51.2%) residents were male and 195 (48.8%) were female. The demographical information section revealed that 205 (51.2%) men and 197 (48.8%) women participated in the study. The average and median age of men was about four years younger than women. The female residents' age ranged from 29 to 34 years while the mean was 33.97 ± 5.17 years. The male residents' age ranged from 18 to 38 years while the mean was 38.6 ± 5.89 years. The highest number of participants (20%) came from Iran medical university which was to be expected owing to the origin of study and the large number of residents in this university. 285 (71.3%) participants were married. 63.5% of residents had at least 3 months of work experience in emergency medicine before enrolment. 54.3% had their residency in their own city. 71.5% of residents said they would choose emergency medicine if granted another opportunity.

Based on the independent T test results, the average age interval between graduating as a GP and enrolment in the residency program was (4.84 ± 4.5) for males and (2.63 ± 1.6) for females and was statistically significant ($p < 0.001$). There was also a linear relationship between this duration and age in the correlation coefficient of Pearson test, meaning older residents were more likely to have had a longer interval between graduation and enrolment ($r = 0.73$, $P < 0.000.1$)

166 (41.5%) of participants mentioned the following factors in choosing this field: the short duration of the course, 79 (19.8%) good income, 127 (31.8%) the free time between shifts, 280 (70%) clinical interest 188 (47%), possibility of finding occupation in the provincial capital, 158 (39.5%) possibility of becoming a faculty board member and 88 (22%) lack of a different option. But the most important reasons were (in order): clinical interest (40.5%), short duration of the course (15%), the possibility of becoming an faculty board member (12%), lack of a different option (8%), free time between shifts (7.5%), good income (5.3%) and the possibility of occupation in the provincial capital (1.5%).

Also the most prevalent subspecialties chosen by the participants were (in order): ultrasonography (34.3%), critical care (24.5%), disaster management (21.3%), EMS (10.3%), clinical toxicology (5.3%) and pediatric emergency medicine (4.5%).

Based on the results available in table 1, there was no statistical correlation between age and the short duration of residency, clinical interest, the free time between shifts, possibility of becoming a faculty member and lack of a different option.

But according to the chi-square test results, there was a noticeable correlation between age and selecting the field for good income, possibility of occupation in the provincial capital. Participants younger than 36 were more likely to choose this field because of good income, while older participants were more likely to choose this field for the possibility of occupation in province capital. (Table 1)

Based on the results of Table 2, there was no meaningful correlation between gender and reason for choosing the field (such as the short duration of residency, good income, interest, the possibility of occupation in the provincial capital or becoming a faculty member. ($P < 0.05$))

On the other hand according to chi-square test results there was a considerable relationship between gender and choosing this field due to the free time between shifts and lack of a different option. In a way that women were more likely to pick emergency medicine due to the free time between shifts and men were more likely to pick emergency medicine due to lack of a different option. (Table 2).

Discussion

Due to the continuing development of emergency medicine and increase in emergency medicine specialists countrywide, having demographical information about this group and their interests at hand could have many uses. Four hundred emergency medicine residents enrolled in all of the medical universities in Iran participated in this study.

In the next part of the questionnaire was comprised of motivational factors behind choosing this field, the most prevalent factor (72.9%) was clinical interest (due to being the first line of treatment). Other factors (in order of prevalence): becoming a faculty board member, the possibility of finding occupation in the provincial capital, short duration of residency, free time between clinical shifts, good income and finally lack of a different option. The correlation of these motivational factors with gender and the median age of residents was studied in order to show if these two are effective on options or not.

Clearly we can see a correlation between younger age and good income ($P=0.04$) or the possibility of finding occupation in the provincial capitals ($P=0.019$), which probably stems from financial concerns in younger residents because owing to the inability to earn money while being a student or while serving a mandatory military service (for men). According to other statistical results with lower P-values, there was a correlation between older age and the possibility of finding occupation in the provincial capitals, maybe due to having better facilities in bigger cities or a long term plan to live in a city [5, 6].

Gender wise, women were more likely to state the free time between shifts women as a factor in order to spend more time with their family if they were married. ($P=0.001$). There was also a meaningful difference between men and women in selecting lack of different options ($P=0.001$). This indicates that women were more eager to choose this field but most men chose it for good income and lack of different options [7-9].

114 (28.5%) participants had decided to withdraw sometime during the residency (without indicating the reason), probably due to work pressures and high stress. 137 (34.3%) participants selected the ultrasonography subspecialty due to an increasing demand for ultrasound in emergency medicine, high availability of it and it helping achieve a faster diagnosis in emergency situations [10, 11].

Due to the fact that this study is a pioneering one in emergency medicine and the owing to the absence of similar information in any archive in the country, this study may be regarded as similar to Perina et al. [12, 13] which were performed by the Emergency Medicine Association of the United States based on gender/age and race differences. However our study does not include information about all residents and it does not include their race.

In Perina study [12] one of the reasons of choosing emergency medicine was the higher number of scholarships for this field. In our study average age of enrolment in this field was 36 in Iran, while it was 29 in the USA. Older age of entrance was correlated to lower work time and is interesting due to the high amounts of money spent on training residents. This demonstrates the necessity of interviewing and also age restriction in our country. In the USA, females made up %41 of participants (near the results from Iran). Nowadays, women are more inclined to study in order to flourish and demonstrate their capabilities and increase their self-esteem.

This study can provide information about the age, gender and attitude of residents for further studies and intergroup studies.

Conclusion

Based on this study, the average age of enrolment in emergency medicine in Iran was higher than acceptable. The most prevalent motivational factor in enrolling in emergency medicine in both genders and all ages was clinical interest. In younger residents' high income and the possibility of finding occupation in the provincial capital and between women free time between shifts was stated more. Lastly, residents picked ultrasound fellowship as the best subspecialty for emergency medicine.

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Table 1. comparison the age of residents and the reasons of choosing emergency medicine residency

reasons		age		P value
		=<36 n (%)	36< n (%)	
short duration of residency	yes	120 (39.9)	46 (46.5)	0.144
	no	181 (60.1)	53 (53.5)	
good income	yes	66 (21.9)	13 (13.1)	0.041
	no	235 (78.1)	86 (86.9)	
interest	yes	217 (72.1)	63 (63.3)	0.119
	no	84 (27.9)	36 (36.4)	
free time between shifts	yes	103 (34.2)	24 (24.3)	0.169
	no	198 (65.8)	75 (75.7)	
possibility of occupation in the provincial capital	yes	153 (50.8)	36 (36.4)	0.019
	no	148 (49.2)	63 (63.6)	
becoming a faculty member	yes	126 (41.8)	32 (32.3)	0.291
	no	175 (58.2)	67 (67.7)	
lack of a different option	yes	64 (21.3)	24 (24.2)	0.330
	no	237 (78.7)	75 (75.8)	

Table 2. comparison gender deference of residents and the reasons of choosing emergency medicine residency

reasons		gender		P value
		male n (%)	female n (%)	
short duration of residency	yes	80 (39)	86 (51.8)	0.303
	no	125 (61)	109 (46.4)	
good income	yes	34 (16.6)	45 (23.1)	0.103
	no	171 (83.4)	150 (76.9)	
interest	yes	141 (68.8)	139 (71.3)	0.585
	no	64 (31.2)	56 (28.7)	
free time between shifts	yes	50 (24.4)	118 (60.5)	0.001
	no	155 (75.5)	77 (39.5)	
possibility of occupation in the provincial capital	yes	95 (46.3)	93 (47.7)	0.787
	no	110 (53.7)	102 (52.3)	
becoming a faculty member	yes	87 (42.4)	71 (36.4)	0.218
	no	118 (57.6)	124 (63.6)	
lack of a different option	yes	61 (29.8)	67 (13.8)	<0.001
	no	144 (70.2)	168 (86.2)	