

Catalan medical students' predisposition to specialize in emergency medicine

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Background and objective: Emergency medicine is in the process of becoming recognized as a specialty for primary residency training in Spain. However, the predisposition of future doctors to specialize in this area is unknown since students have never been asked to express their opinions. Therefore, we sought to discover medical students' attitudes toward specialization in emergency medicine.

Methods: Anonymous survey of students engaged in first- and second-cycle university study of medicine in Catalonia. We recorded demographic data and asked students to indicate their prior theoretical or practical contact with emergency medicine, their intention to enter into such contact, and their intention to choose residency training in emergency medicine if that specialty were available among the range of possibilities. The relations between demographic factors and students' intentions, as the dependent variables, were then analyzed.

Results: A total of 171 students at the University of Barcelona, the Autonomous University of Barcelona, the University of Lleida, and the Rovira i Virgili University responded. Residency training in emergency medicine was the first choice for 2.4% of the students; 52.1% included emergency medicine among their possible choices for residency training. Emergency medicine was among the top 3 choices for 43.3% when students were asked to rank residencies in internal medicine, family practice, intensive care medicine, orthopedic and trauma surgery, cardiology, and general and digestive tract surgery. A course in emergency medicine had been taken or would be taken by 82.2%, and 94.7% had practical experience in emergency medicine or planned to obtain such practice. The only variable associated with expressing an interest in emergency medicine was having a doctor in the family.

Conclusions: Over half the surveyed students of medicine in Catalonia include emergency medicine among the residency training courses they might choose. The students' preferences bear little relation to demographic characteristics or university. [Emergencias 2010;22:15-20]

Key words: Emergency Medicine. Students of Medicine. University. Speciality. Postgraduate Formation.

Introduction

Emergency Medicine (EM) differs from other medical specialties for its intrinsic characteristics and the logistics it requires to be carried out. Real learning about the concept of EM requires specific, structured and comprehensive training, covering triage, cardio-pulmonary resuscitation, initial assessment and emergency treatment until discharge or referral to other professionals of the health system, and includes all levels of emer-

gency care, both pre-hospital and hospital care¹. However, to date, emergencies and therefore the teaching of EM have been understood in a vertical way, i.e. as part of the different diseases that at some point may require urgent attention. Thus the specialty of EM is relatively recent in Europe and is in the process of being fully implemented^{2,3}. In this process, EM as a specialty follows the lead provided by Anglo-Saxon countries like the U.S.A, Canada, United Kingdom, Ireland or Australia, some of which have more than

30 years experience. In the European Union EM is recognized as a primary specialty in the United Kingdom, Ireland, Poland, Malta, Slovakia, Czech Republic, Bulgaria, Hungary and Romania, while in other countries such as France, Greece and Belgium it exists as a supra-specialty^{4,5}.

In Spain, the teaching of EM as a specific discipline is not regulated during medical training or after the degree in medicine⁶. For more than two decades, there has been talk of a future specialty in EM as an independent discipline. Since then, de facto EM and related specialists as well as politicians have debated this topic in depth⁷. However, there has been little interest in hearing the opinion of the main protagonists: future physicians who will choose whether or not to take up this specialty. The aim of this study was to determine the predisposition of medical students to choose the EM specialty if it were offered by the MIR system and the factors associated with willingness to choose it.

Method

This was a descriptive-analytic study performed in Catalonia. We included all universities offering complete degree courses in Medicine and Surgery during the 2008-2009 academic year. An anonymous survey was conducted in students from the first and second cycle and, specifically, third and sixth year students were selected. The technique of sampling was probabilistic, depending on the ability of authors to make contact with each of the teaching units. At least one teaching unit for each faculty was selected, except for the University of Barcelona where we included two teaching units (Hospital Clinic and Hospital de Bellvitge). Students were chosen at random. One day was randomly selected for each teaching centre. Outside the lecture rooms, researchers distributed questionnaires to students of these courses, and two hours later collected completed questionnaires. The survey included demographic data, previous completion or intention to opt for a subject specifically dealing with EM, and previous completion or intention to opt for practical experience in an Emergency Department (with number of hours). The student participants were specifically asked if they would choose the specialty of EM if it were available in the MIR system. They were also asked to rank the specialty in order of preference from a group of EM-related specialties (Internal Medicine, Family Medicine and Community Care Medicine, Orthopaedic Surgery

and Traumatology, Cardiology and General and Digestive Surgery). These last two questions were considered as dependent variables and the others as independent variables.

For statistical analysis we used the mean and standard deviation to describe continuous variables, and absolute values or percentages for discontinuous variables. Student's t test was used for normally distributed continuous variables, and chi-square test for discontinuous variables. Differences with a p value less than 0.05 were considered statistically significant. All calculations were made using SPSS 16.0 software.

Results

The survey was completed by 171 students: 70 from the Universitat de Barcelona (Hospital Clinic 47 and Bellvitge 23), 39 from the Universitat Autònoma de Barcelona (Hospital Sant Pau), 31 from Universitat Rovira i Virgili and 31 from the University of Lleida. The curriculum of all these includes an elective EM subject in the second cycle of the degree course, and the possibility of practicals (in an emergency department) as part of the subject or not. Epidemiological characteristics of the participants are shown in Table 1.

A total of 88 students surveyed (52.1%) ranked the specialty of EM among its preferred options when choosing a place in the MIR, although only 4 students (2.3%) selected it as their first option from among the 48 existing specialties offered in Spain (Table 2). When compared with 6 other EM-related specialties, 11 (6.7%) ranked EM first, but 71 (43.3%) consider it one of their top three options (Table 2, Figure 1).

Table 1. Epidemiological characteristics of the 171 students surveyed

University [n (%)]	
– Barcelona (Barcelona)	70 (41.0)
– Rovira i Virgili (Reus, Tarragona)	31 (18.1)
– Lleida (Lleida)	31 (18.1)
– Autònoma de Barcelona (Cerdanyola, Barcelona)	39 (22.8)
Year [n (%)]	
– 3rd	124 (72.5)
– 6th	47 (27.5)
Age (mean ± SD)	21.4 (± 2)
Gender [n (%)]	
– Women	127 (74.3)
– Men	44 (25.7)
Nationality [n (%)]	
– Spanish	163 (95.3)
– Foreign	8 (4.7)
Physician family member [n (%)]	
– Yes	51 (29.8)
– No	120 (70.2)

Table 2. Intention of students to choose the specialty of Emergency Medicine

	n	%	cumulative %
If I passed the MIR test, the specialty Emergency Medicine would be (n=169)			
- The one I would do	4	2.4	2.4
- One of my favourites	84	49.7	52.1
- I would do it if I had no other alternatives, but it wouldn't be my first choice	70	41.4	93.5
- There is no way I would choose to do it	11	6.5	100.0
Order of choice of Emergency Medicine regarding the seven alternatives presented (n = 164)*			
- 1st choice	11	6.7	6.7
- 2nd choice	29	17.7	24.4
- 3rd choice	31	18.9	43.3
- 4th choice	39	23.8	67.1
- 5th choice	28	17.1	84.1
- 6th choice	18	11	95.1
- 7th choice	8	4.9	100.0

*The seven alternatives presented were: Family and Community Medicine, Internal Medicine, General and Digestive Surgery, Intensive Care, Orthopaedic Surgery and Traumatology, Cardiology and Emergency Medicine.

Regarding practical experience of EM, most participants (139, 82.2%) had completed or intended to take one EM subject, and even higher numbers (160, 94.7%) had completed or intended to have practical EM experience. Of 15 students that had already completed the subject, and 77% of the 46 that had already had practical EM experience, all were in their sixth year. Of these, most had completed 120 hours of practice, with a median of 70 hours (3-240).

There was no relationship between predisposition to choose the specialty of EM in the MIR system and demographic characteristics (Table 3). Regarding the order of preference, we detected

lower preference for the specialty of EM over other similar specialties in students with a physician member of family (48.7% vs. 30.6%, $p < 0.05$, Table 4).

Discussion

The present study reveals that a significant portion of future physicians view the specialty of EM favourably, as more than half ranked it among their preferences. This is high considering the trend in MIR of increasingly opting for specialties with low attending workloads⁸, which is not exactly the case with EM. On the one hand, these results indicate that the students surveyed consider the EM specialty worthy of being chosen, and on the other hand, that the positions offered are likely to be taken up. The idea that students consider EM as distinct from other specialties is reinforced by the fact that, regardless of the preference for choosing the specialty, a large majority of them had voluntarily attended or intended to attend practices in emergency and / or an optional subject in this discipline.

This is the first time that students have been asked for their opinion on the specialty of EM. So far, they had only expressed their ideas in the form of internet blogs⁹ and in free opinions from other surveys¹⁰, repeatedly denouncing the lack of specific EM training during the degree course, and the lack of possibilities for adequate training in the discipline compared with existing specialties.

We chose students in the 3rd and 6th year of medicine as representatives of each cycle to avoid

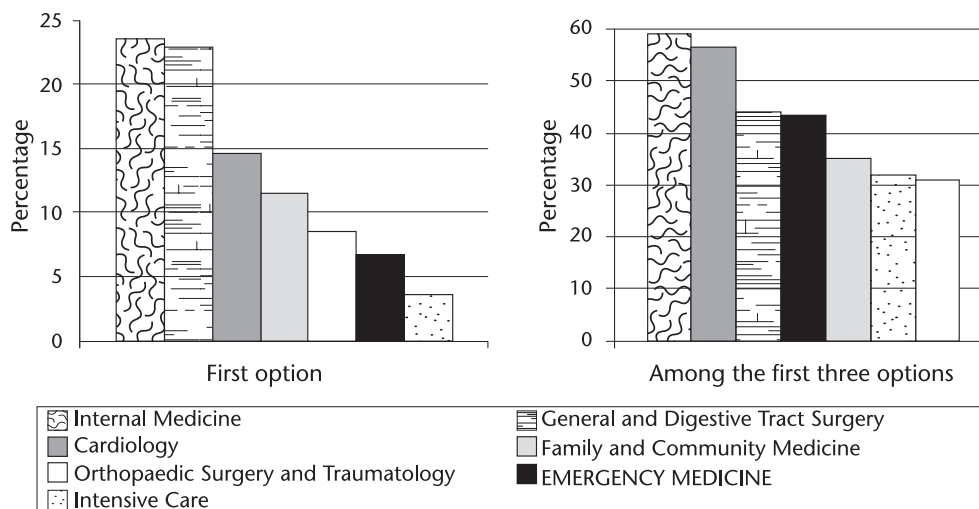


Figure 1. Degree of preference for each of the 7 possible specialties offered in the survey.

Table 3. Study of factors associated with the intention of choosing or not choosing the specialty of Emergency Medicine (EM) in the MIR program. The table includes the analysis of the 169 students who responded to this question

	I would chose EM in MIR N = 88 (52.1%)	I would not coose EM in MIR N = 81 (47.9%)	Odds Ratio (95% confidence interval)	p
University: n (%)				
– Barcelona	32 (46.4)	37 (53.6)	1 (reference category)	–
– Rovira i Virgili	18 (60)	12 (40)	1.73 (0.73-4.14)	0.28
– Lleida	15 (48.4)	16 (51.6)	1.09 (0.46-2.53)	1.00
– Autònoma de Barcelona	23 (59)	16 (41)	1.66 (0.75-3.68)	0.23
Year				
– 3rd	65 (53.3)	57 (46.7)	1 (reference category)	–
– 6th	24 (50)	24 (50)	0.88 (0.45-1.71)	0.74
Age (mean ± SD)	21.5 (±2.5)	21.2 (±1.5)	No procede	NS
Gender				
– Women	68 (54.4)	57 (45.6)	1 (reference category)	–
– Men	20 (45.5)	24 (54.5)	0.70 (0.35-1.39)	0.38
Nationality				
– Spanish	85 (52.8)	76 (47.2)	1 (reference category)	–
– Foreign	3 (37.5)	5 (62.5)	0.53 (0.12-2.32)	0.54
Physician family member				
– No	24 (47)	27 (53)	1 (reference category)	–
– Yes	64 (54.2)	54 (45.8)	0.75 (0.39-1.45)	0.40
Have you completed any subject specifically on EM?				
– No	81 (52.6)	73 (47.4)	1 (reference category)	–
– Yes	7 (46.7)	8 (53.3)	0.79 (0.27-2.28)	0.79
Have you had any practical experience in an emergency department?				
– No	64 (52.5)	58 (47.5)	1 (reference category)	–
– Yes	24 (51)	23 (49)	0.94 (0.48-1.85)	1.00

potential bias. In the first case, students had virtually no clinical practice while in the second, experience in general and particularly in emergencies, allowed for more informed choices. However, opinion on the possibility of practising EM was similar in both groups, so one could speculate that there is pre-faculty inclination towards EM and therefore that there is a social substratum which favours the development of EM. Neither having studied the subject or having practical experience of EM in emergency departments changed this view. This result may be reassuring for advocates of the specialty, as seeing or participating in a situation of intense work, with great stress and usually scarce resources did not deter students from choosing the specialty. It is possible that the existence of a specialty may encourage more students to choose it. But efforts must be made not only to develop a specialty that is structured but one that is also worthy for patients and challenging for students.

Student preferences were independent of the faculty to which they belonged. This result indicates that their favourable opinion was homogeneous and not influenced by a greater or lesser tradition of teaching the discipline. This uniformity in the vision of emergencies was also unchanged by previous contact or not with EM in

practice. Interestingly, students with physicians in the family were the least likely to choose EM as a specialty. This is probably due to the influence of previous generations' experience in emergency departments of old, with fewer staff, less training and fewer resources, where the work, in both pre-hospital and the hospital emergency departments, was carried out primarily by junior physicians. Another possible explanation is that students with a physician member of family may tend to choose the same specialty, which rules out EM since it does not yet exist.

When compared with other specialties akin to emergencies, the students ranking of EM was intermediate. Perhaps EM should have been compared with more specialties, but the objective of the study was to assess their rating of EM compared with specialties which are also associated with the need for speed in medical response, stress and high workload. In the new program for residents being prepared by the Ministry of Health, some of these specialties have been grouped in the same category as EM^{11,12}. Another possible limitation of the study is the not having surveyed a greater number of students, since our approach was probabilistic and not universal sampling. However, we believe that the inclusion of students from the faculties and from both cycles

Table 4. Study of factors related to the preference for Emergency Medicine (EM) between the first three from a list of 7 possible specialties (family and community medicine, internal medicine, general and digestive surgery, intensive care, orthopaedic surgery and traumatology, cardiology and EM). The table includes analysis of the 164 students who answered this question

	Preference for EM from among the top three N = 71 (43.3%)	Non-preference for EM from among the top three N = 93 (56.7%)	Odds Ratio (95% confidence interval)	p
University: n (%)				
– Universitat de Barcelona	29 (43.3)	38 (56.7)	1 (reference category)	–
– Universitat Rovira i Virgili	12 (40)	18 (60)	0.87 (0.36-2.10)	0.82
– Universitat de Lleida	12 (40)	18 (60)	0.87 (0.36-2.10)	0.82
– Universitat Autònoma de Barcelona	18 (48.6)	19 (51.4)	0.91 (0.40-2.09)	1.00
Year				
– 3rd	47 (39.8)	71 (60.2)	1 (reference category)	–
– 6th	24 (52.2)	22 (47.5)	1.65 (0.83-3.27)	0.16
Age (mean ± SD)	21.8 (± 2.6)	21.1 (± 1.5)	No procede	NS
Gender				
– Women	17 (40.5)	25 (59.5)	1 (reference category)	–
– Men	54 (44.3)	68 (55.7)	1.17 (0.57-2.38)	0.72
Nationality				
– Spanish	70 (44.9)	86 (55.1)	1 (reference category)	–
– Foreign	1 (12.5)	7 (87.5)	0.18 (0.02-1.46)	0.14
Physician family member				
– No	56 (48.7)	59 (51.3)	1 (reference category)	–
– Yes	15 (30.6)	34 (69.4)	0.46 (0.23-0.94)	< 0.05
Have you completed any subject specifically on EM?				
– No	64 (43)	85 (57)	1 (reference category)	–
– Yes	7 (46.7)	8 (53.3)	1.16 (0.40-3.37)	0.79
Have you had any practical experience in an emergency department?				
– No	48 (40.7)	70 (59.3)	1 (reference category)	–
– Yes	23 (50)	23 (50)	1.45 (0.74-2.89)	0.30

of the degree course resulted in a representative sample.

In conclusion, this study shows that medical students in Catalonia view EM as a specialty with intrinsic value, sufficiently attractive enough to be pursued in their professional future. We believe that this is one more voice (in this case, of future protagonists) in favour of the specialty of EM, which decision makers would do well to heed.

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Predisposición de los estudiantes de medicina catalanes a especializarse en Medicina de Urgencias y Emergencias

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Introducción: La Medicina de Urgencias y Emergencias (MUE) se encuentra actualmente en trámites de ser reconocida como especialidad primaria en España. Sin embargo, se desconoce la predisposición de los futuros médicos a especializarse en ella, ya que nunca se les ha preguntado su opinión. Por ello, el objetivo de este estudio fue conocer su posicionamiento respecto a esta especialidad.

Método: Encuestas anónimas a estudiantes de primer y segundo ciclo de las facultades de medicina de Cataluña. Se recogieron variables demográficas, se preguntó por el contacto previo con la MUE (teórico y/o práctico), la intención de tenerlo, la intención de escoger en el MIR la especialidad de MUE si la hubiere y el orden de preferencia de la MUE entre otras especialidades afines. Se analizó si existía algún factor demográfico asociado con estas dos últimas variables, que fueron las consideradas dependientes en el estudio.

Resultados: Participaron 171 estudiantes de las universidades de Barcelona, Autónoma de Barcelona, Lleida y Rovira i Virgili. El 2,4% escogerían MUE como primera opción en el MIR y el 52,1% sitúa a la MUE entre sus preferencias para la residencia. Un 43,3% coloca a la MUE entre las 3 primeras posiciones al compararla junto con medicina interna, medicina familiar y comunitaria, medicina intensiva, cirugía ortopédica y traumatología, cardiología y cirugía general y digestiva. Un 82,2% había cursado una asignatura de urgencias o tenía intención de realizarla y un 94,7% había cursado prácticas en servicios de urgencias o tenía intención de hacerlo. Sólo el hecho de tener un familiar médico se asoció con una menor preferencia por la MUE.

Conclusión: Más de la mitad de los estudiantes de medicina de Cataluña sitúan la futura especialidad de MUE entre sus preferencias. Estas preferencias son esencialmente independientes de las características demográficas de los estudiantes o de la universidad de procedencia. [Emergencias 2010;22:15-20]

Palabras clave: Medicina de Urgencias y Emergencias. Estudiantes de medicina. Docencia. Universidad. Especialidad. Formación post-grado.