Characteristics of training and motivation of physicians working in emergency medicine

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Summary

Introduction: Emergency medicine is an area in which correct decisions often need to be made fast, thus requiring a well-prepared medical team. There is little information regarding the profile of physicians working at emergency departments in Brazil.
Objective: To describe general characteristics of training and motivation of physicians working in the emergency departments of medium and large hospitals in Salvador, Brazil.
Method: A cross-sectional study with standardized interviews applied to physicians who work in emergency units in 25 medium and large hospitals in Salvador. At least 75% of the professionals at each hospital were interviewed. One hospital refused to participate in the study.
Results: A total of 659 physicians were interviewed, with a median age of 34 years (interquartile interval: 29-44 years), 329 (49.9%) were female and 96 (14.6%) were medical residents working at off hours. The percentage of physicians who had been trained with Basic Life Support, Advanced Cardiovascular Life Support and Advanced Trauma Life Support courses was 5.2, 18.4 and 11.0%, respectively, with a greater frequency of Advanced Cardiovascular Life Support training among younger individuals (23.6% versus 13.9%; p<0.001). Thirteen percent said they were completely satisfied with the activity, while 81.3% expressed a desire to stop working in emergency units in the next 15 years, mentioning stress levels as the main reason.
Conclusion: The physicians interviewed had taken few emergency immersion courses. A low motivational level was registered in physicians who work in the emergency departments of medium and large hospitals in Salvador.

Keywords: emergency medicine, physicians, motivation, clinical competence, advanced cardiovascular life support, Brazil.

Study conducted at Escola Bahiana de Medicina e Saúde Pública, Salvador, BA, Brazil

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Introduction

Emergency medical care is designed to intercede in situations requiring quick or immediate decisions to reduce morbidity and mortality related to acute repercussions of systemic diseases or trauma.[1,2] For successful intervention in such situations, a qualified medical team, made up of professionals who are able to make quick decisions and apply effective trauma management and resuscitation techniques, is necessary.[3]

Care provided by the medical staff at the emergency department is a result of professional experience combined with a number of factors, namely proper training at an undergraduate or residency program, completion of immersion courses such as Basic and Advanced Cardiovascular Life Support (BLS and ACLS), motivation and perceived valorization.[4,5]

There is no information regarding these characteristics among emergency physicians in Brazil. This study

aimed to define the profile of doctors working in emergency departments of medium and large hospitals in a big Brazilian city in regard to professional training, motivation and expectations towards their work setting.

Method

Study design

This was a cross-sectional study in which the primary objective was to determine the professional profile of emergency physicians working in all medium and large hospitals in the city of Salvador, Bahia, Brazil. Data were obtained through interviews (questionnaire appliance), carried out between January and March 2012. The study was approved by the Institutional Ethics Committee of Santa Izabel Hospital.

Selection of participants

A questionnaire was applied to physicians working in the emergency services of all 25 medium and large size hospitals in the city of Salvador, the third largest city in Brazil.[6] Hospitals were classified according to the document "Concepts and Definitions in Health", according to which a medium sized hospital has 50 to 150 beds and a large one has 150 or more beds.[7] The number of hospital beds in every institution can be found at the National Database of Health Establishments.[8] All of the physicians gave consent to participate in this study. The Ethics Committee from each hospital was informed about this study. Only one institution refused to participate. Each institution provided a list with the names of all the physicians who were working in its emergency department and visits were made to each service to carry out interviews. The goal was to interview at least 3/4 of the emergency medical staff of each hospital, based on the time scales provided by the coordinators of the emergency services.

Data collection

The questionnaire applied was developed by the authors for the purpose of this research and included questions concerning medical education, graduate degrees and complementary courses, experience in emergency during and after the medical undergraduate program, dedication, and job satisfaction. The median of additional years doctors intended to work in emergency services was a quantitative variable. Interviews were carried out at the emergency department of each hospital by medical students previously trained to apply the questionnaire.

Primary data analysis

Data were expressed as means and standard deviations with Gaussian distribution, or median and interquartile interval when the distribution was not Gaussian. Frequencies were reported as absolute values and percentages. Chi-square test was used for categorical variables and the Mann-Whitney and Kruskal-Wallis for continuous variables. Data analysis was performed with SPSS software, version 13.0.

Results

A total of 659 physicians on duty at emergency departments of large and medium hospitals in Salvador were interviewed. This total corresponded to approximately 75% of the emergency physicians' estimate. We evaluated 24 hospitals, of which 11 (45.8%) were public, 6 (25%) were private, and 7 (29.2%) had both public and private care services (Table 1). Only one hospital refused to participate. All physicians evaluated gave consent to participation in the study.

The emergency physicians were usually young, presenting a median age of 34 years, ranging from 24 to 73 years old. There was no gender predominance. The median of working hours per week in emergency shifts was 24 hours (interquartile range [IQR]: 20-42 hours).

Most physicians (64.5%) considered they had good experience with emergency during the undergraduate program. Ninety-six physicians (14.6%) were medical residents working at residency off hours. About half declared to have specialist qualifications (Table 1).

The percentage of doctors who had already gone through BLS, ACLS and Advanced Trauma Life Support (ATLS) programs in the past two years was 5.2%; 18.4%; 11.0%, respectively (Table 2). ACLS training was the most frequent among the youngest physicians (p=0.001) (Table 3). When asked about what was the main reason for choosing the emergency department as their workplace, the majority chose "I like the activity" out of five alternatives (41.7%) (Table 4). Only 13.1% were fully satisfied with their job (Table 5) and 81.3% said they intended to stop working at the emergency department in the next 15 years, pointing out "excessive stress at work" as their main reason (Table 6). The median of additional years doctors intended to work in emergency services was 5 years (IQR: 2-8 years).

In relation to their self-evaluation as emergency physicians, 11.7% claimed they performed excellently. There was a higher frequency of physicians who considered their performance excellent in the group of doctors who had completed a residency program (14.2% against 1.6%, in the non-residency group; p<0.001). Among the physicians satisfied with their job, 20.9% rated their performance as excellent, against 14.4% in the group of physicians dissatisfied with their job (p<0.001).

TABLE 1 General characteristics of the emergency services and interviewed physicians.

Type of funding	Number of emergencies	Number of emergency physicians		
Public	11 (45.8%)	332 (50.4%)		
Private	6 (25%)	172 (26.1%)		
Public and private	7 (29.2%)	155 (23.5%)		
Total	24	659		
General data	**N / frequency**	**Minimum**	**Maximum**	**Mean (years)**
Age	656	24	73	37.7
Time after degree	656	0	42	12.4
Weekly hours in the ER	524	0	15	4.9
Specialist title: Yes	333 (50.7%)			
No	324 (49.3%)			
Master's degree	33 (5%)			
Doctoral degree	8 (1.2%)			
Sex: Male	330 (50.1%)			
Female	329 (49.9%)			
Completed Medical Residency Program				
Yes (one or more)	502 (76.2%)			
Internal Medicine	97			
Cardiology	32			
General Surgery	110			
Pediatric	95			
Gynecology–Obstetrics	82			
Other residency	235			
No residency	157 (23.8)			
Currently resident				
Yes	96 (14.6%)			
Internal Medicine	15			
Cardiology	6			
General Surgery	8			
Pediatric	10			
Gynecology–Obstetrics	8			
Other residency	49			
No resident	563 (85.4%)			

TABLE 2 Frequency of knowledge and major updating courses in emergency medicine taken in the last two years.

Course	n=659
ACLS	121 (18.4%)
ATLS	72 (11.0%)
BLS	34 (5.2%)

ACLS: Advanced Cardiovascular Life Support; ATLS: Advanced Trauma Life Support; BLS: Basic Life Support.

TABLE 3 Frequency of physicians certified in the major immersion courses in emergency medicine in the last two years by age.

Course	< 34 years (n=311)	≥ 34 years (n=345)	p-value
ACLS	73 (23.6%)	48 (13.9%)	0.001
ATLS	37 (12.0%)	35 (10.1%)	0.456
BLS	19 (6.1%)	15 (4.3%)	0.300

ACLS: Advanced Cardiovascular Life Support; ATLS: Advanced Trauma Life Support; BLS: Basic Life Support.

TABLE 4 Main reasons stated for working in emergency services.

Reason	n=659
I like the activity	270 (41.7%)
It is a job opportunity	145 (22.4%)
Good financial income	137 (21.2%)
I want to acquire experience	63 (9.7%)
Other reasons	32 (4.9%)
Did not respond	12 (1.8%)

TABLE 5 Degree of satisfaction of the physicians with their practice in emergency services.

Degree of satisfaction	n=659
Satisfied	86 (13.1%)
Neutral	473 (71.8%)
Dissatisfied	97 (14.7%)
Did not respond	3 (0.5%)

TABLE 6 Main reasons for not working in emergency in the next 15 years (more than one option could be chosen).

Reason	n=534
Stress	339 (63.7%)
Low remuneration	192 (36.2%)
Inappropriate working conditions	283 (53.4%)

When analyzing the main reason for working in the emergency department, the frequency of the answers "It's a job opportunity" and "Good financial income" was higher in the group of emergency physicians who were dissatisfied with their job (30.4% and 35.1%, respectively). On the other hand, doctors in the "satisfied" group chose "I like the emergency practice" more often (52.4%). The differences were all statistically significant ($p<0.001$).

Among the physicians who were satisfied, 64.0% intended to stop working in emergency medicine in the next 15 years, compared to 93.8% of the dissatisfied doctors and 81.8% of those who were neutral and declared themselves neither satisfied nor dissatisfied ($p<0.001$). Regarding the reasons for stopping working in emergency medicine in the next 15 years, 41.8% of the satisfied, 64.2% neutral and 75.8% dissatisfied physicians reported "stress at work" ($p<0.001$) (Table 7).

Comparing to private and mixed services, the physicians of exclusively public emergency rooms were older, more frequently specialists, less satisfied and less trained in ACLS (Table 8).

Discussion

The aim of this study was to evaluate the general and professional profile of physicians working in emergency departments in the third largest city in Brazil. There was a predominance of young doctors working in the emergency department, similar to what Rosenbach et al.[9] had described. In their report, emergency physicians were younger and less qualified than physicians from other specialties.

Although male doctors are still predominant in Brazil,[10] we found a balanced gender distribution. This may reflect a transition of gender predominance that is seen in Brazil among the youngest physicians.[10]

Half of the physicians had finished their residency program and almost 15% of the professionals were still undergoing their residency. Furthermore, the low frequency of involvement in immersion courses is surprisingly remarkable, as the majority of the most traditional courses focus on various aspects of the emergency practice. Analyzing the results by age, we observed that younger physicians engaged in ACLS courses more often than older ones, which might reflect greater motivation for continuing learning and training among those who are initiating their professional career.

A cross-sectional study conducted between 2003 and 2004 in Salvador, Brazil, evaluated knowledge about cardiopulmonary resuscitation among emergency physicians in public and private hospitals. This report showed that 70.5 and 66.9% of the doctors had never taken ACLS or ATLS courses, respectively.[11]

In our study, 64% of the emergency physicians reported they had good experience in emergencies during their undergraduate program. Another study, conducted with final year medical students from the Faculty of Medical Sciences of the Rio de Janeiro State University showed that 93.7% of the students had done at least one extracurricular training course during their degree. Emergency medicine and intensive care were chosen more frequently than other areas, because students felt they needed more training in these settings despite their regular undergraduate training.[12] In Israel, 65% of the students from the Hebrew University – Hadassah Faculty of Medicine considered "diagnosis and management of medical emergencies" as one of the most deficient points of their medical training.[13] In Iran, on the other hand, a study involving a questionnaire answered by students from Tehran University of Medical Sciences – School of Medicine showed that 69.4% of the students classified their training in medical emergency as "good" or "very good."[14]

In Brazil, in contrast with different countries around the world, there are few residency training programs in

TABLE 7 Differences regarding the reasons for not working in emergency by degree of satisfaction with the job (more than one answer could be chosen).

	Fully satisfied	Partially satisfied	Dissatisfied	p-value
Stress	23 (41.8%)	247 (64.2%)	69 (75.8%)	<0.001
Low remuneration	5 (9.1%)	128 (33.4%)	58 (63.7%)	<0.001
Inappropriate working conditions	7 (12.7%)	201 (52.5%)	74 (81.3%)	<0.001

TABLE 8 Comparisons related to the type of emergency service.

	Public	Private or public and private	p-value
Age			0.004
< 34 years	138 (41.8%)	173 (53.1%)	
≥ 34 years	192 (58.2%)	153 (46.9%)	
Mean formed time (years)	15	10	<0.001
Specialist title frequency	191 (57.9%)	142 (43.4%)	<0.001
Degree of satisfaction			0.001
Satisfied	36 (10.9%)	50 (15.3%)	
Neutral	229 (69.4%)	244 (74.8%)	
Dissatisfied	65 (19.7%)	32 (9.8%)	
Knows ACLS	248 (75.2%)	303 (92.7%)	<0.001

ACLS: Advanced Cardiovascular Life Support.

Emergency Medicine. Currently in Brazil there are only 27 residency programs in Emergency Medicine, distributed in nine states. This number falls far short compared, for example, with specialties such as Internal Medicine or General Surgery, with 287 and 356 programs in all Brazilian states, respectively.[15] In the United States, there are approximately 5,000 emergency departments with 25,000 physicians practicing in these centers. Currently more than 2,700 physicians are being trained in the 132 Emergency Medicine Residency Training Programs approved by the US Accreditation Council for Graduate Medical Education (ACGME). Each year these programs award degrees to approximately 800 physicians that are eligible to become certified as Emergency Medicine specialists. Emergency Medicine has been and continues to be one of the most competitive specialties for medical student applicants.[16]

Despite stating that the main reason for working in the emergency room was that they liked the activity, most physicians expressed their intention to stop working in this field in the next 15 years. This fact highlights the importance to study the profile of the professionals who are working in emergency services. Few professionals seemed to have plans to pursue a career in emergency medicine, even among those fully satisfied with this practice, and only some of them reported to be satisfied with their job. Curiously, the main reasons for working in the emergency department ("good financial income" and "job opportunity") were significantly associated to dissatisfaction with the job as an emergency physician.

In a study with physicians from the American Board of Emergency Medicine (ABEM) about job satisfaction in emergency practice, 23.1% of the physicians reported an intention to stop working in emergency medicine in five years time.[17] Many factors may influence the ceasing of medical emergency practice, such as the great number of patients seen per hour, the stress involved and burnout syndrome.[18,19] A Canadian cross-sectional study showed that emergency physicians are emotionally exhausted, with high levels of depersonalization and relatively low levels of personal accomplishment.[20]

A lower level of satisfaction was associated with practice in public emergency services. A study in Turkey that assessed burnout in public versus private emergency rooms also found that in the public sector, work locations, false accusations, occupational injuries and diseases, work-related permanent disabilities, and organizational support have significantly influence in self-reported perceptions of well-being ($p<0.05$).[21]

There were some limitations in our study. The questionnaire was elaborated and applied by the authors of the article. However, no validated instrument about this theme was found in the medical literature to be used for the purposes of the present study. It was not possible to interview the entire population of physicians working in emergencies from Salvador. This is probably because the

population of doctors working in emergency services changes constantly, and has a fast turnover, associated to the fact that most physicians work regularly in areas other than emergency with occasional shifts in the emergency department, without an actual employment bond in the area. Even though we used a convenience sampling, we believe that our findings likely reflect the characteristics of our target-population, since more than 75% of the emergency physicians of all large and medium size hospitals were interviewed. It was not possible to compare a group that received specific training in emergency medicine with another that did not, because there were no specific training programs in the country. Some factors such as safety at work and provision of materials for an adequate job could have been included in the questionnaire in order to assess their influence on satisfaction of emergency physicians, for example. Additionally, the alternatives in some multiple choice questions might not reflect the exact thoughts of each individual.

Conclusion

We found that the emergency physicians of large and medium-sized hospitals in the city of Salvador are relatively young, without gender predominance. They have little training in emergency immersion courses, and need to be more motivated to practice their profession fully in emergency departments. This information could be extrapolated for other countries that have emergency services working under similar conditions of funds and labor, such as other developing countries or those located in Latin America.

Conflict of interest

The authors declare no conflict of interest.

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