Reasons related to the choice of critical care medicine as a specialty by medical residents

Motivos relacionados à escolha da medicina intensiva como especialidade por médicos residentes

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ABSTRACT

Objectives: Critical Care Medicine is a relatively new specialty, which in recent years has made significant progress in Brazil. However, few physicians are willing to acquire this specialization. The main objective of this study was to describe the factors associated with choice of Critical Care Medicine as a specialty by medical residents of Salvador-BA.

Methods: A cross-sectional and descriptive study, in which a questionnaire was submitted to all residents of the specialties that are a prerequisite for Critical Care Medicine (Clinical Medicine, General Surgery and Anesthesiology), between October and December 2007.

Results: The study included 165 residents (89.7% of the total), in which 51.5% were clinical medicine residents, 25.5% were general surgery residents, and 23.0% were anesthesiology residents. Of the respondents, 14 (9.1%) intended to enter Critical Care Medicine residency, although 90 (54.5%) were willing to become intensive care unit physicians after their regular residency. The main reason stated to specialize in critical care medicine was to like work with critically ill patients (92.9%). The main reasons stated not to specialize in critical care medicine, however were related with the poorer quality of life and work. Residents who did intensive care unit initernship during medical studies were more likely to work in an intensive care units after residency.

Conclusions: This population showed little interest to specialize in critical care medicine. The main reasons given for this limited interest were factors related to quality of life and intensive care unit environment. A national survey is required to identify the interventions needed to favor this specialization.

Keywords: Education, medical; Intensive care; Internship and residency; Specialties, medical

INTRODUCTION

Intensive care medicine (ICM) is a relatively new specialty acknowledged by the Brazilian Medical Association since 1981 and by the Federal Medical Council since 1992. In the last years ICM has vigorously developed in Brazil, with a significant increase in the number of intensive care units (ICU) and with a growing need for specialized physicians to meet this demand. Since 1998, government ordinance nº 3432, introduced requirement of a board certified specialist in ICM for the daily activities of Brazilian ICUs for the purpose of optimizing management of critically ill patients.[1] However, many of these units are still lacking a board certified physician.[2]

ICM specialization can be acquired by a two year program of medical resi-

dency in adult ICU. The physician who intends to specialize in ICM must have as a prerequisite concluded two years of residence in clinical medicine, general surgery or anesthesiology.[3] Some aspects, however have hindered development of the specialty, for instance, few hospitals have medical residency in ICM accredited by the National Committee of Medical Residency.[1] On the other hand, there are few resident physicians seeking this specialization, therefore, notwithstanding the small number of vacancies for residency, often they are not filled.[4]

The objective of this study was to describe why resident physicians of Salvador-BA intend or not to finish medical residency in ICM.

METHODS

After approval by the Research Ethics Committee of the Fundação Bahiana para o Desenvolvimento das Ciências with protocol number 53/2007, a cross sectional descriptive study was carried out in which 184 resident physicians, of the specialties considered a prerequisite for ICM (clinical medicine, general surgery and anesthesiology) were assessed, in the city of Salvador-BA. A list of physicians enrolled in the program of medical residency accredited by the Ministry for Education (MEC) in 2007 was requested from the State Commission of Medical Residency from the Department of Health of the State of Bahia. Data was collected in the institutions where physicians were practicing medical residency, from October to December of 2007, by previously trained students from the League of Intensive Care Medicine of Bahia. A self-applied questionnaire was administered (Appendix 1). Resident physicians could mark only one option in questions 10, 11 and 19.

Participation in the study was voluntary and confidential, without identification of residents who completed the questionnaire. Each physician signed an informed consent for participation in the study and publication of data. Prior to administration of the questionnaire in the institution of medical residency, permission was requested from the Teaching Coordination. Whenever requested by the Teaching Coordination's, it was submitted to the CEP of each service.

Analysis of data was made using the software *Statistical Packages for Social Science* (SPSS) version 9.0. Descriptive statistics parameters were used and the usual measures of central tendency and dispersions and simple and relative frequency calculations were adopted. For correlation between two categorical variables the Chi-square test was used and the level of significance adopted was 5%.

RESULTS

Of the 184 resident physicians eligible for study, 165 from the prerequisite specialties for residence in ICM agreed to participate (87.7% of the total). Mean age of interviewees was 26.7 ± 2.2 years. Of the 165 physicians who filled out the questionnaire, 11 did not complete the question related to gender and one did not report year of residency. Other demographic data are seen on table 1. Most of the interviewed resident physicians (60.4%) had intended to do residency in ICM. However, only 14 (8.5%) still considered it after concluding current residency.

Table 1 – Demographic characteristics of resident physicians interviewed (N=165)

Characteristics	% (N)
Gender	
Male	57.1 (88)
Female	42.9 (66)
Currently residency	
Clinical medicine	51.5 (85)
General surgery	25.5 (42)
Anesthesiology	23 (38)
Years of residency	
R1	51.2 (84)
R2	42.1 (69)
R3	6.7 (11)
Intended to do another specialty	79.4 (131)
Residents of Clinical Medicine	97.6 (83)
Cardiology	25.6 (21)
Gastroenterology	14.6 (12)
Endocrinology	14.6 (12)
Intensive care medicine	2.4 (2)
Residents in General Surgery	97.6 (41)
Urology	19.4 (7)
Surgery of the digestive system	13.9 (5)
Intensive care medicine	13.9 (5)
Residents in Anesthesiology	18.9 (7)
Intensive care medicine	100 (7)

Motives highlighted by resident physicians who had never thought about doing residency in ICM and did not specialize in this area were: poor quality of life (52.3%), dislike of work in shifts (52.3%) and stressing environment (50.8%). Yet, the main motive pointed out by residents who had thought about doing ICM, but gave up was quality of life (69.6%). Among residents who intended to specialize in ICM, the main reasons were like to work with critically ill patients (92.9%) and good wages (50%).

During medical studies only 62(37.6%) of resident physicians had carried out curricular internship in ICU, 81 (49.1%) had only done extracurricular internship and 22 (13.3%) had no exposure to the ICM environment during graduation. Most interviewees (90.9%) reported that the basic subjects of ICM are discussed during their current residency, being 37.¨% in a isolated form and 53.1% as part of their own programs. In all the assessed residency programs ICU internship is offered and 86.7% of interviewees had already done this internship. Regarding courses of immersion related to ICM (*Advanced Cardiac Life Support* [ACLS], *Advanced Trauma Life Support* [ATLS] and *Fundamentals in Critical Care Support* [FCCS]), 48.5% of resident physicians had completed one of them (Figure 1).

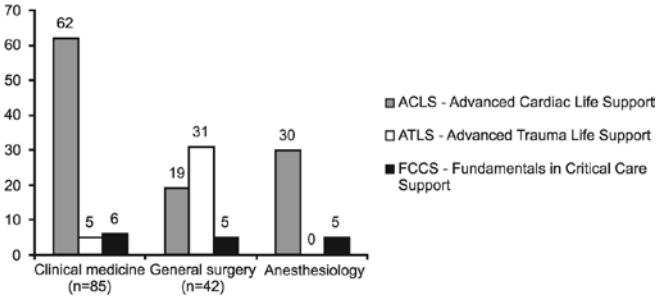

Figure 1 – Immersion courses taken by resident physicians (N=165).

Only 35% of the assessed residents (n=58) feel confident on duty in an ICU and most (72.1%, n=119) believe that on duty physicians of these units should specialize in ICM.

Of the interviewed residents, 77.4% (n=127) had had the opportunity/offer or had been on duty in an ICU (Figure 2). Of the 59 residents that had been on duty in an ICU, 31(52.5%) were general surgery, 17 (28.8%) clinical medicine and 11 (18.6%) anesthesiology residents; 32 (54,2%) had already taken some immersion course and 14 (23.7%) did not feel confident to be on duty in the ICU.

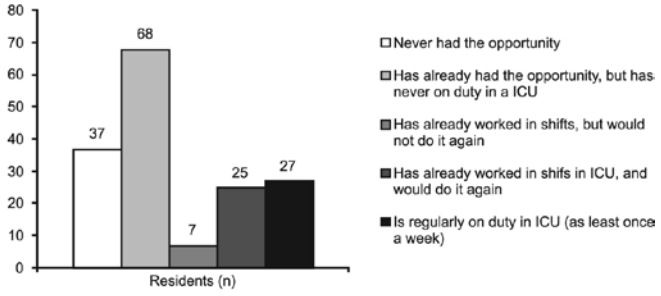

Figure 2 – Activity of the residents as on duty physicians in intensive care units (N= 165).

ICU - Intensive care unit.

Most residents (54.5%, n=90) intended to be on duty in an ICU after residency (Figure 3). Resident physicians who had some internship in ICU during studies were more inclined to become on duty physicians in the ICU after residency (Table 2).

Table 2 – Performance of internship in intensive care units during medical studies and wish to work as on duty physician in intensive care units after residency

		Intends to be on duty physicians in the ICU after residency	
		No	Yes
Made internship in ICU during medical studies	No	17 (77.3)	5 (22.7)
	Yes	58 (40.6)	85 (59.4)

ICU = intensive care unit. Results are expressed in N(%), p = 0.002 (Chi-square test).

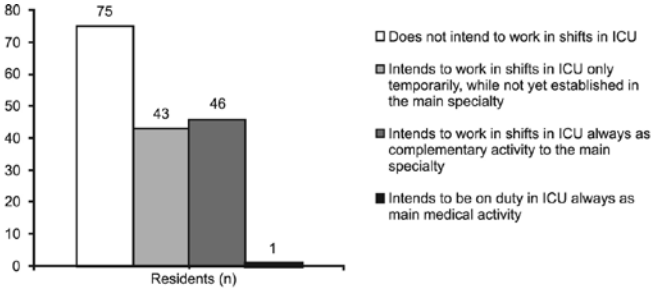

Figure 3 – Wish of residents to work as on duty physicians in intensive care units (ICU) after residency (N=165).

ICU - Intensive care unit.

DISCUSSION

The assessed resident physicians were not greatly interested in specializing in ICM. Principal motives reported were factors related to quality of life of the intensivists and ICU environment. Previous studies indicated that ICU professionals are submitted to multiple stress factors and are more inclined to develop the Burnout syndrome, a reaction to excessive work related stress.[2,5,6] Regarding the work environment for physicians in ICUs, some factors must be highlighted as they contribute to Burnout, such as long working shifts, number of shifts, excessive demands which reduce the quality of care, need to deal with suffering and death and constant exposure to risk.[7] These factors are directly related to poorer quality of life which influence the resident's decision not to specialize in ICM.

The term "quality of life" is broad, abstract and multifactorial because it involves various aspects related to the individual's biopsychosocial well-being, making interpretation difficult. In this context, it should be noted that the study was quite limited because in the questionnaire

among reasons for not carrying out specialization in ICM, the item "quality of life" was generic. Thus, we consider, for instance that the items "work in shifts" and "stressing environment" are also related to poorer quality of life. In this way, interpretation of results presented is restricted as the item "quality of life" encompasses other items pointed out in the questionnaire.

According to results of a survey carried out by CFM, less than 1% of physicians in Brazil were specialized in ICM.[8] The great demand for on duty in ICU associated to the small number of certified intensivists leads to hiring non specialized physicians in the majority of these units.[2] In the USA, only one third of critically ill patients is admitted to ICUs, with physicians specialized in ICM.[9] Studies have shown that this scarcity of specialists in ICM will be aggravated in the next years by growing hospital demand due to aging of the population and constant increase of the number of critical patients.[9] Pronovost et al.[10] claimed that training of specialized ICM physicians led to a significant decrease of mortality and length of patients' stay in the ICU.[10] Faced with this perspective international medical societies began to develop various strategies to improve care of critically ill patients and increase the interest of physicians to graduate in ICM.[11]

A fundamental measure is to improve the teaching of ICM during studies as well as during residency. Frankel et al.[12] studied the teaching methodologies of North-American schools and suggested fostering a rotation in the ICU during schooling years. This would facilitate acquisition of capabilities in procedures and concepts of ICM, offering confidence and effectiveness to future physicians in management of the critically ill. The Surgery Chapter of the Society of Critical Care Medicine (SCCM) also recommends, in a guideline of 2000, that medical studies should include basic physiology of critical illness and understanding of concepts of organ dysfunction and inflammatory response to trauma and infection.[13] In 1995, the SCCM defined a new curriculum for residency in clinical medicine, general surgery, anesthesiology and pediatrics with implementation skills directed towards recognition and initial management of critically ill patients.[14] Teaching of ICM during medical studies and residency programs allows a greater interest of improving knowledge with specialization in ICM, as well as the training of physicians more qualified to care for critically ill patients.[15,16]

In Brazil, there is a major shortcoming of not including of ICM in the medical course.[17] To fill this gap, an alternative found by students and supported by the Brazilian Intensive Care Medicine Association (AMIB), was the creation of ICM academic leagues. From 2005, when the Special Committee of Intensive Care Medicine Leagues (LIGAMI-AMIB), to January 2008 41 leagues were formed in the country. This study discloses that residents with internship in ICU during medical studies were more interested in working in these units after residency. According to a study carried out by LAMIB, medical students have great interest in ICM, but have few contacts with this specialty during studies.[18] As such, majority of students in our milieu, seek extracurricular internship to compensate for this deficiency of the medical schools.[18]

In various European countries, specialty in ICM is carried out together with residency in anesthesiology.[19] In our work, although only a few residents in anesthesiology considered an additional medical residency, all of them wished to do ICM. This data is interesting because in Brazil, anesthesiology is the only specialty considered as prerequisite for ICM that requires three years. The need for two more years of residency, in addition to the abundant offer of jobs for recently graduated residents, may contribute to the limited interest of anesthesiologists in becoming ICM specialists that would delay their entry in the work market.

Among the assessed residents, those who showed less interest in ICM specialization were those in clinical medicine. The low percentage of these who intended to engage in ICM residency compared to other specialties, such as cardiology, gastroenterology and endocrinology, must be addressed in studies directed towards development of strategies to encourage specialization in ICM.

CONCLUSION

Due to the growing demand of physicians specialized for work in ICUs, the deficiency of professionals with this type of training in the market has become a matter of concern. The lack of interest of residents in specializing in ICM is related essentially to the quality of life of intensivists, as well as working in shifts or considering the ICU a stressing environment. A Brazilian survey is now mandatory to identify which interventions are required to further this specialization. Results of this study call attention to the urgent need of measures directed towards improving the quality of life of intensivists and teaching of ICM during medical studies to encourage graduation of new physicians specialized in ICM.

RESUMO

Objetivos: A medicina intensiva é especialidade relativamente nova que apresentou grande desenvolvimento no Brasil

nos últimos anos. No entanto, existe pouca procura por parte dos médicos em realizar este tipo de especialização. O objetivo deste estudo foi descrever os motivos pelos quais os médicos residentes de Salvador-BA pretendem ou não realizar residência médica em medicina intensiva.

Métodos: Trata-se de um estudo transversal e descritivo, em que foi aplicado um questionário, durante o período de outubro a dezembro de 2007, a todos os médicos residentes das especialidades pré-requisito para medicina intensiva (clínica médica, cirurgia geral e anestesiologia).

Resultados: Foram incluídos no estudo 165 médicos residentes (89,7% do total), sendo 51,5% residentes de clínica médica, 25,5% de cirurgia geral e 23% de anestesiologia. Dos entrevistados, 14 (9,1%) pretendem fazer residência de medicina intensiva, embora 90 (54,5%) pretendam ser plantonistas de unidades de terapia intensiva após a residência. O principal motivo destacado para se especializar em medicina intensiva foi gostar de trabalhar com pacientes graves (92,9%). Já os principais motivos para não se especializar em medicina intensiva estão relacionados à pior qualidade de vida ou de trabalho. Os médicos residentes que fizeram algum estágio em unidade de terapia intensiva durante a graduação são mais propensos a serem plantonistas de unidades de terapia intensiva após a residência.

Conclusões: A população avaliada demonstrou baixo interesse em se especializar em medicina intensiva. Os principais motivos apontados foram os fatores relacionados à qualidade de vida dos intensivistas e ao ambiente de trabalho. Um levantamento nacional se faz necessário para identificar quais as intervenções são adequadas para incentivar esta especialização.

Descritores: Educação médica; Cuidados intensivos; Internato e Residência; Especialidades médicas

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Appendix 1

ACADEMIC LEAGUE OF INTENSIVE CARE MEDICINE (LAMIB)

SURVEY OF FACTORS THAT INFLUENCE CHOICE OF INTENSIVE CARE MEDICINE AS MEDICAL SPECIALTY BY RESIDENT PHYSICIANS OF SALVADOR-BA

1. Age _____ 2 Gender: (M) (F) 3. Graduation Year: _____
4. Residency ( ) Clinical medicine ( ) Surgery ( ) Anesthesiology
5. Year of Residency: ( ) R1 ( ) R2 ( ) R3
6. Have you already done any residency before?
   ( ) No ( ) Yes. Which? _____
7. Do you think of doing any residency afterwards?
   ( ) No ( ) Yes. Which? _____
8. Rank your interest in Intensive ca re medicine from 1 to 5 :
   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5
9. Did you ever think of doing residency in Intensive Care Medicine?
   ( ) No ( ) Yes
10. Mark the reasons why you would specialize in intensive care medicine:
   ( ) Good pay
   ( ) I like to work with critically ill patients
   ( ) I like to work on a shift schedule
   ( ) Quality of life
   ( ) More responsibility
   ( ) Others Which? _____
   _____
   _____
11. Mark the reasons why you would NOT specialize in intensive care medicine:
   ( ) I do not like to work with critically ill patients
   ( ) I do not like to work on a shift schedule
   ( ) Stressing environment
   ( ) Quality of life
   ( ) I feel insecure
   ( ) My profile does not fit
   ( ) Others Which? _____
   _____
   _____
12. Have you done a shift in ICU (as on duty physician)?
   ( ) Never had the opportunity
   ( ) I had the opportunity but did not accept
   ( ) A few times but I would not do it again
   ( ) A few times, I would do it again
   ( ) I work a shift in the Uti at least once a week
13. After residency do you consider becoming an on duty physician in ICU?
   ( ) No.
   ( ) Yes, only temporarily while I am not established in my principal specialty.
   ( ) Yes, always as complementary activity to my principal specialty
   ( ) Yes, as principal medical activity.
14. During your medical course did you do any internship in ICU?
   ( ) No ( ) Yes, curricular. ( ) Yes, extracurricular.
15. Basic subjects related to intensive care medicine are discussed in your residency (theoretical approaches)?
   ( ) No ( ) Yes, on isolated occasions.
   ( ) Yes, as par of the residency program.
16. Does your residency offer internship in ICU?
   ( ) No ( ) Yes obligatory. ( ) Yes, optional
17. If yes, have you taken this internship?
   ( ) No ( ) Yes
18. Do you feel confident to be on duty in an ICU?
   ( ) No ( ) Yes
19. Do you believe that an on duty physician in the ICU must specialize in intensive care medicine?
   ( ) No ( ) Yes
20. Have you taken one of the following courses?
   ( ) BLS – Basic Life support
   ( ) ACLS – Advanced Cardiological Life Support
   ( ) ATLS – Advanced Trauma Life Support
   ( ) PALS – Pediatrics Advanced Life Support
   ( ) FCCS – Fundamentals in Critical Care Support
   ( ) Others. _____
21. Comments
   _____
   _____
   _____
   _____
   _____
   _____