

Career Satisfaction in Emergency Medicine: The ABEM Longitudinal Study of Emergency Physicians

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Study objective: The primary objective of this study is to measure career satisfaction among emergency physicians participating in the 1994, 1999, and 2004 American Board of Emergency Medicine Longitudinal Study of Emergency Physicians. The secondary objectives are to determine factors associated with high and low career satisfaction and burnout.

Methods: This was a secondary analysis of a cohort database created with stratified, random sampling of 1,008 emergency physicians collected in 1994, 1999, and 2004. The survey consisted of 25 questions on professional interests, attitudes, and goals; 17 questions on training, certification, and licensing; 36 questions on professional experience; 4 questions on well-being and leisure activities; and 8 questions about demographics. Data were analyzed with a descriptive statistics and panel series regression modeling (Stata/SE 9.2 for Windows). Questions relating to satisfaction were scored with a 5-point Likert-like scale, with 1=not satisfied and 5=very satisfied. Questions relating to stress and burnout were scored with a 5-point Likert-like scale, with 1=not a problem and 5=serious problem. During analysis, answers to the questions "Overall, how satisfied are you with your career in emergency medicine?" "How much of a problem is stress in your day-to-day work for pay?" "How much of a problem is burnout in your day-to-day work for pay?" were further dichotomized to high levels (4, 5) and low levels (1, 2).

Results: Response rates from the original cohort were 94% (945) in 1994, 82% (823) in 1999, and 76% (771) in 2004. In 2004, 65.2% of emergency physicians reported high career satisfaction (4, 5), whereas 12.7% of emergency physicians reported low career satisfaction (1, 2). The majority of respondents (77.4% in 1994, 80.6% in 1999, 77.4% in 2004) stated that emergency medicine has met or exceeded their career expectations. Despite overall high levels of career satisfaction, one-third of respondents (33.4% in 1994, 31.3% in 1999, 31% in 2004) reported that burnout was a significant problem.

Conclusion: Overall, more than half of emergency physicians reported high levels of career satisfaction. Although career satisfaction has remained high among emergency physicians, concern about burnout is substantial. [Ann Emerg Med. 2008;51:714-722.]

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SEE EDITORIAL, P. 729.

INTRODUCTION

Background

Surveys describing levels of career satisfaction among physicians during the last decade report findings ranging from decreasing career satisfaction to stable levels of satisfaction.¹⁻²⁴ Although some of the variability in results can be accounted for by problems with survey design, ie, that most surveys have relied on cross-sectional data^{25,26} and have focused on single specialties,^{1,3,22,27-30} most data indicate that career satisfaction and dissatisfaction vary across

specialty, as well as age, income, region, and site of practice.¹⁻²⁴

Although one might expect more concordant data within the same specialty, survey data collected within emergency medicine are also discordant. Some investigators report low levels of stress and high levels of job satisfaction and others report high levels of stress and job dissatisfaction.^{16,31-33} A longitudinal survey including physicians in various stages of career, sites of practice, and regions of the country may help clarify the different findings previously reported.

The primary objective of this study was to measure career satisfaction among emergency physicians participating in the

Editor's Capsule Summary*What is already known on this topic*

Cross-sectional physician career satisfaction surveys have produced variable results. Longitudinal surveys may more accurately reflect the feeling of actively practicing physicians.

What question this study addressed

The degree of career satisfaction and what factors correlate with career satisfaction and burnout in a longitudinal study of 945 American Board of Medical Specialties diplomates begun in 1994.

What this study adds to our knowledge

Career satisfaction remained high in 2004 among 771 respondents despite concerns about burnout. Jobs that provided diversity in practice correlated with higher career satisfaction.

How this might affect clinical practice

Providing and encouraging diversity in a professional practice may increase satisfaction and retention in emergency medicine.

1994, 1999, and 2004 American Board of Emergency Medicine (ABEM) Longitudinal Study of Emergency Physicians. The secondary objectives were to determine factors associated with high and low career satisfaction and burnout.

MATERIALS AND METHODS**Study Design**

This is a secondary data analysis of data gathered from the 3 rounds of the ABEM Longitudinal Study of Emergency Physicians. Only data from physicians who were invited to participate since the inception of the project in 1994 were included in the current analysis: 1994 (round 1: 945 respondents; 94% response rate), 1999 (round 2: 823 respondents; 82% response rate), and 2004 (round 3: 771 respondents; 76% response rate). Responses from participants invited after 1995 were excluded.

Selection of Participants

Cohorts were solicited in 1994 for participation in the ABEM Longitudinal Study of Emergency Physicians. Initial participants were selected with a stratified, random sampling methodology to identify representative emergency physicians within 4 cohorts representing different stages in the development of the specialty and ensuring representative samples of emergency physicians who had completed an emergency medicine residency and those who had not. Initial cohorts admitted into the survey consisted of 1,008 physicians applying for certification: (1) 1979 and before representing the first years individuals could apply for ABEM certification

(n=248), (2) 1984 (n=248), (3) 1988 (n=248), (4) 1993 (n=264). Each of the cohorts from the 1979, 1984, and 1988 cohorts were further stratified into ABEM diplomates–residency eligible and ABEM diplomates non–residency eligible. The 1993 cohort was further stratified into ABEM candidates–residency eligible and American College of Emergency Physician members who identified themselves as full-time emergency physicians but were not ABEM diplomates. New cohorts are randomly identified and enrolled in the study every 5 years. All cohorts, beginning in 1999, consist only of graduates of Accreditation Council for Graduate Medical Education (ACGME)–approved emergency medicine residency programs, consistent with the ABMS policy for ABEM diplomates.¹⁶ As previously mentioned, responses from participants invited after 1995 were excluded from the current analysis.

The ABEM Longitudinal Study of Emergency Physicians was initiated to describe the development of the new medical specialty of emergency medicine through the continuing study of the lives of representative emergency physicians. The survey was created by an expert panel of emergency physicians and included information in the following 5 domains: professional interests, attitudes, and goals; training, certification, and licensing; professional experience; well-being and leisure activities; and demographic information. The initial survey was presented to another group of expert emergency physicians who were asked to comment on the items. The survey was altered according to their suggestions and represented until changes were no longer being suggested. The final survey consisted of 25 questions on professional interests, attitudes, and goals; 17 questions on training, certification, and licensing; 36 questions on professional experience; 4 questions on well-being and leisure activities; and 8 questions on demographics. Some questions had up to 32 subsections.

Further details about tool development, including sampling stratification, sampling precision and sample sizes, reliability, survey design participation solicitation and return, informed consent, participant confidentiality, institutional approval, and scale development, have been previously described.¹⁶

Data collection began in 1994. Participants were asked to complete a lengthy survey every 5 years and an abbreviated survey every year. A 4-step procedure to ensure adequate return rates is used for the lengthy surveys sent out every 5 years: (1) a cover letter about the survey, a copy of the survey, and a postage-paid return envelope; (2) a postcard follow-up; (3) a second cover letter, a copy of the survey, and a postage-paid return envelope; and (4) a certified letter. All data were collected through self-reporting by physician participants and were not verified. Survey responses were then entered into a data file.

Primary Data Analysis

All analyses were conducted using Stata/SE 9.2 (StataCorp, College Station, TX). We computed descriptive information on career satisfaction with information from each of the 3 lengthy

surveys. Information from the yearly interim surveys was not included in this analysis.

The level of satisfaction assigned to each physician was determined by the answer to the following question: Overall, how satisfied are you with your CAREER in emergency medicine? The answer choices were presented in a Likert-like scale and ranged from 1 (not satisfied) to 5 (very satisfied). The numeric assignment of "satisfied" was 3. A classification scheme was designed to identify physicians who were highly satisfied and those who were dissatisfied with their careers in emergency medicine. Responses of 4 and 5 were classified as "highly satisfied" (4, 5) and responses of 1 and 2 were classified as "dissatisfied." Two dichotomized variables were then created for the secondary outcomes analyses: highly satisfied (4,5)/not highly satisfied (1,2,3) and dissatisfied (1,2)/not dissatisfied (3,4,5). We then examined the percent of emergency physicians who were highly satisfied and dissatisfied from 1994, 1999, and 2004.

Physicians were also asked: Knowing what you know now, if you had to decide whether to select the specialty of emergency medicine, what would you decide? The answer choices were: 1) "Definitely would not select emergency medicine," 2) "Probably would not select emergency medicine," 3) "Probably would select emergency medicine," 4) "Definitely would select emergency medicine."

Physicians were asked to rank a list of 32 items in response to the question, How much of a problem is each of the following in your day-to-day work for pay? The ranked items were ancillary support services, attending conferences, burnout, colleagues, emergency medical services (EMS) support, exercising medical judgment, fatigue, sex discrimination, minority discrimination, having enough time for family, having enough time for personal life, hospital administration, hospital politics, income, infectious disease exposure, keeping up with the medical literature, knowing enough, learning new skills and procedures, length of shifts, level of energy needed to work, level of patient acuity, number of shifts, number of night shifts, number of patients, nursing staff, respect from medical colleagues, safety in the emergency department (ED), stress, subspecialty support, time for conducting research, concern about malpractice suits, and difficult moral or ethical issues. Again the answer choices were presented in a Likert-like scale and ranged from 1 (not at all) to 5 (serious problem). An answer choice of 4 or 5 was recoded as 1 ("considered to be a serious problem") and an answer choice of 1, 2, or 3 was recoded as 0 ("not considered to be a serious problem").

Physicians were asked, Is each of the following work conditions available in your current position(s)? about the following: administrative opportunity, autonomy at work, opportunity to attend conferences, compatible colleagues, control over working conditions, defined working hours, exciting work, fair compensation, fringe benefits, job security, personal reward, opportunity for subspecialization, sense of ownership, sufficient up-to-date equipment, promotion

Table 1. Demographics.

Characteristic	1994, n=945 (%)	1999, n =823 (%)	2004, n=771 (%)
Women, %	125 (13.9)	*	101 (13.8)
Mean age, y (SD)	39.9 (10.5)	44.9 (10.5)	49.9 (10.5)
Ethnic group, %			
White	819 (95.9)	640 (95.8)	663 (95.7)
Black	16 (1.9)	11 (1.7)	13 (1.8)
Hispanic	9 (1.0)	7 (1.0)	9 (1.5)
Married, %	745 (82.6)	593 (84.1)	606 (83.4)
Children, %	712 (79.0)	592 (84.2)	621 (85.2)
Retired, %	13 (1.4)	52 (7.3)	86 (11.7)
Residency-trained, % yes	461 (50.9)	368 (51.7)	394 (53.7)
Years in practice, %			
0-10	292 (37.8)	82 (15.8)	11 (2.2)
11-20	333 (43.1)	237 (45.7)	211 (42.8)
21-30	144 (18.6)	184 (35.5)	210 (42.6)
>30	3 (0.4)	15 (2.9)	61(12.4)
Practice includes, % yes			
Academic writing	160 (21.0)	93 (20.0)	84 (19.7)
Administration	527 (68.9)	332 (67.9)	290 (64.6)
Clinical practice	743 (97.9)	497 (98.0)	468 (98.7)
Clinical teaching	506 (66.1)	338 (70.3)	290 (65.3)
Consulting	162 (21.2)	123 (26.2)	103 (23.9)
Research	143 (18.7)	85 (18.1)	79 (18.2)

% Is the percentage of respondents to the particular question. Not all respondents answered every question.

*Sex was not included in 1999 survey.

opportunity, research opportunity, teaching opportunity. The answer choices were yes or no.

The primary outcome of career satisfaction among emergency physicians was measured by calculating proportions of each response by year of survey to the question, Overall, how satisfied are you with your CAREER in emergency medicine? For the secondary outcome analysis, 3 separate panel series regression models were built with the dichotomized outcome of interest as the dependent variable (high career satisfaction, low career satisfaction, burnout). The independent variables entered were the dichotomized answers to the questions about problems and opportunities, along with demographic variables and variables describing practice setting, practice types (ie, any involvement with clinical practice, academic writing, administrative, teaching, consulting, political, research), residency training, income, ED census, involvement in organized medicine, and leadership roles (See Appendix E1, available at <http://www.annemergmed.com>). We used the Stata 9.2 SE Longitudinal/Panel data xt module for analysis (StataCorp) All statistical analyses are reported using 95% confidence intervals (CIs).

This study was approved by the ABEM Research Committee.

RESULTS

Characteristics of Study Subjects

Seven hundred forty participants responded to all 3 waves. Demographic characteristics of the respondents are presented in

Table 2. Career satisfaction from 1994 to 2004.

Satisfaction Indicators	1994, Women	1994, Men	1994, Total, N=945	1999, Total, N=823	2004, Women	2004, Men	2004, Total, N=771
High satisfaction, %*	59.8	65.5	64.8	65.0	62.3	65.7	65.2
Low satisfaction/dissatisfaction, %*	10.7	11.7	11.6	12.2	15.3	12.3	12.7
Problems with stress, % [†]	36.7	38.0	37.8	33.1	44.2	32.3	34.0
Problems with burnout, % [†]	33.1	33.5	33.4	31.3	32.9	30.7	31.0

Sex was not included in 1999 survey.

*Participants were asked the following:

Overall, how satisfied are you with your CAREER in emergency medicine?

(Circle only one)

Not Satisfied Satisfied Very Satisfied
1 2 3 4 5

Responses of 4 and 5 were collapsed to indicate "high satisfaction." Responses of 1 and 2 were collapsed to indicate "low satisfaction, dissatisfaction."

[†]Participants were asked the following:

How much of a problem is each of the following in your day-to-day work for pay?

(Circle only one for each item)

		Not A Problem			Serious Problem			Not Applicable
Stress	1	2	3	4	5		8	
Burnout	1	2	3	4	5		8	

Responses of 4 and 5 were collapsed to indicate "serious problem." Responses of 1 and 2 were collapsed to indicate "not a serious problem."

Table 1. Ninety-five percent (819) of the original cohort were white and 13.9% (125) of the original cohort were women. Fifty-one percent (461) of the original cohort were residency trained. Ninety-eight percent (743) of participants reported spending some time in clinical practice, and 69% (527) reported spending 1 to 4 hours each week on administrative tasks and clinical teaching.

Main Results

Eighty-eight percent of emergency physicians reported satisfaction levels of 3 or higher with their careers from 1994 to 2004. Sixty-five percent of emergency physicians reported levels of career satisfaction of 4 or 5, whereas 12% of emergency physicians reported levels of career satisfaction of 1 or 2 (Table 2). Career satisfaction was similar among men and women. Similar numbers of residency-trained and non-residency-trained emergency physicians reported career satisfaction levels of 3 or higher; 85.6% (95% CI 82.2% to 88.8%) in 1994 and 87.5 (95% CI 83.6 to 91.4) in 2004 in non-emergency medicine residency-trained physicians to 90.3 (95% CI 87.7 to 93.1) in 1994 and 87.3 (95% CI 83.8 to 90.7) in emergency medicine residency-trained physicians. As such, no further analysis was performed adjusting for training status. Figures 1 to 4 depict data on career satisfaction, stress, and burnout among the various cohorts.

Emergency physicians continued to report that emergency medicine meets or exceeds most of their career expectations (77.4% in 1994 versus 80.6% in 1999 versus 77.4% in 2004). A similar number of physicians stated that they would choose the specialty of emergency medicine again.

Despite high levels of career satisfaction, issues relating to stress and burnout remain prominent. Thirty-four percent of physicians continue to report that stress is a serious problem in

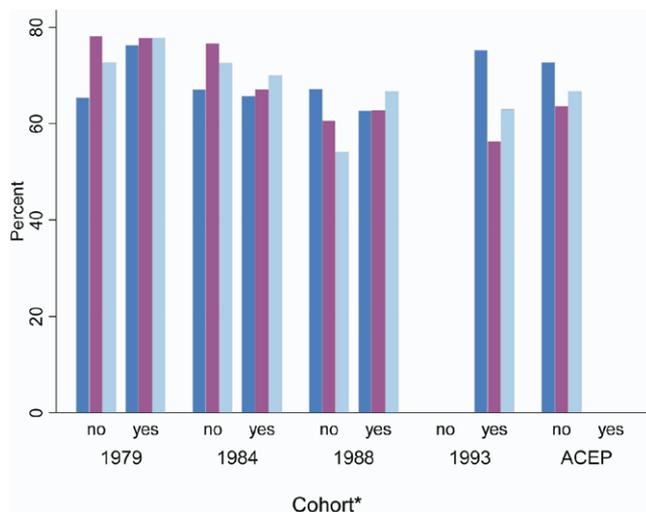


Figure 1. Percentage reporting high satisfaction by cohort and emergency medicine residency training.

*Yes indicates "Completed residency training in emergency medicine." No indicates "Did not complete residency training in emergency medicine."

their day-to-day work, and 31% continue to report that burnout is a serious problem in their day-to-day work.

Results of the multivariable panel series regression to determine variables associated with high career satisfaction are presented in Table 3. In multivariable analysis, physicians who assumed leadership roles either in their day-to-day work or in organized medicine in any way were twice as likely to report high career satisfaction levels as those who did not assume a leadership role. Physicians who considered their work exciting and found their work personally rewarding also were more likely to report high career satisfaction levels. Job security and fair and

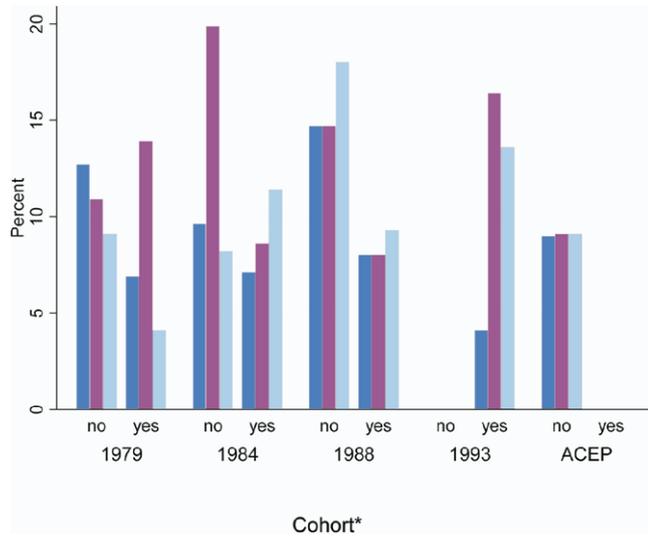


Figure 2. Percentage reporting low satisfaction by cohort and emergency medicine residency training.

*Yes indicates “Completed residency training in emergency medicine.” No indicates “Did not complete residency training in emergency medicine.”

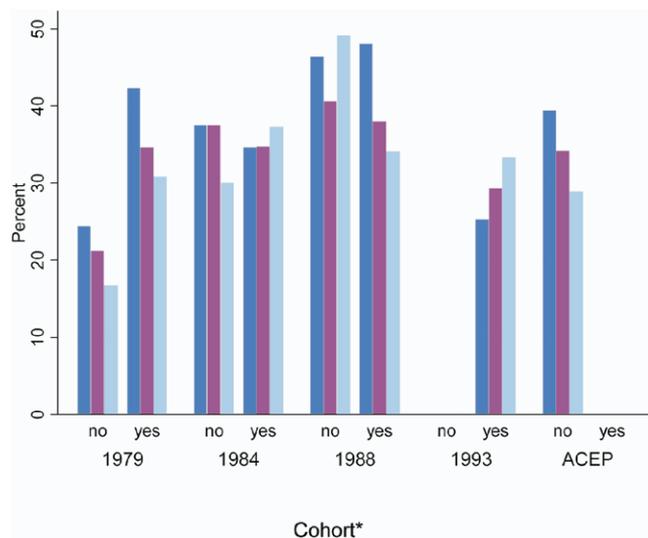


Figure 3. Percentage reporting stress is a serious problem by cohort and emergency medicine residency training.

*Yes indicates “Completed residency training in emergency medicine.” No indicates “Did not complete residency training in emergency medicine.”

especially high compensation also were associated with high career satisfaction. Finally, physicians who were involved with clinical teaching, consulting, or political activity within medicine were twice as likely to report high levels of career satisfaction as their peers.

Physicians who responded that they did not have enough time for their personal life were less likely to report high levels of career satisfaction. Physicians who worked in a high-census ED and those who reported problems with energy levels needed

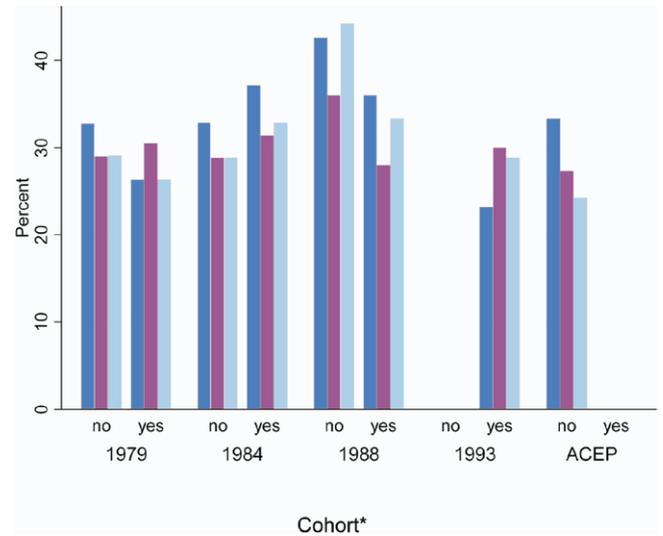


Figure 4. Reports that burnout is a serious problem by cohort.

*Yes indicates “Completed residency training in emergency medicine.” No indicates “Did not complete residency training in emergency medicine.”

Table 3. Variables associated with high career satisfaction.

Variable	Odds Ratio	95% CI
Any leadership role in professional life	2.1	1.3–3.2
Consider these to be serious problems in day to day work:		
Stress	0.6	0.4–0.9
Burnout	0.3	0.2–0.4
Level of energy needed for work	0.6	0.4–0.9
Enough time for personal life	0.5	0.3–0.9
Hospital administration	0.5	0.2–0.9
Length of shifts	0.3	0.1–0.5
Subspecialty support	0.5	0.3–0.9
Believe these work conditions/opportunities exist in current position		
Exciting work	5.0	1.8–13.6
Fair compensation	2.5	1.1
>\$300,000/y From emergency medicine	4.3	1.5–12.6
Job security	2.1	1.1–4.2
Personally reward	2.8	1.2–6.7
Clinical teaching	2.3	1.2–4.5
Consulting	2.3	1.1–4.5
Political activity	2.0	1.0–4.0
ED census >50,000	0.3	0.1–0.7

Panel series regression analysis for longitudinal/panel data adjusted for sex, age, and 58 other variables.

to work, length of shifts, serious problems with subspecialty hospital administration support were less likely to find their careers highly satisfying. Finally, physicians who reported that stress or burnout were serious problems in their day-to-day work were less likely to report high levels of career satisfaction.

The setting in which physicians worked—teaching versus nonteaching hospital, urban versus rural versus suburban, and demographic mix of patients—was not associated with career satisfaction levels.

Table 4. Variables associated with low career satisfaction.

Variable	Odds Ratio	95% CI
Any leadership role in professional life	0.3	0.2–0.6
Consider these to be serious problems in day-to-day work		
Burnout	7.5	4.1–14.0
Level of energy needed for work	2.2	1.2–4.2
Enough time for personal life	2.8	1.2–6.3
Believe these work conditions/opportunities exist in current position		
Lack of control over working conditions	2.3	1.0–5.2
Lack of exciting work	4.2	1.5–12.0
Lack of job security	2.7	1.2–6.3
Lack of personal reward	4.7	1.8–12.2
Clinical teaching	0.2	0.1–0.6

Panel series regression analysis for longitudinal/panel data adjusted for sex, age, and 58 other variables.

Table 5. Variables associated with burnout.

Variable	Odds Ratio	95% CI
Any leadership role in professional life	0.6	0.4–0.9
Consider these to be serious problems in day-to-day work		
Knowing enough	2.0	1.2–3.2
Level of energy needed to work	3.0	2.0–4.7
Fatigue	6.0	3.9–9.2
Enough time for personal life	1.9	1.1–3.2
Consider these to be serious problems in day-to-day work		
Level of patient acuity	2.3	1.2–4.2
Length of shifts	3.7	2.0–6.9
Number of night shifts	3.6	2.0–6.2
Opportunity to attend conferences	3.0	1.5–5.8
Colleagues	3.7	1.8–8.0
Believe these work conditions/opportunities exist in current position		
Lack of control over working conditions	1.9	1.1–3.4
Lack of personal reward	2.8	1.2–6.4
ED census 20,000–60,000	2.2	1.2–4.5

Panel series regression analysis for longitudinal/panel data adjusted for sex, age, and 58 other variables.

Results of the multivariable panel series regression to determine variables associated with low career satisfaction are presented in Table 4. In multivariable analysis, physicians who assumed leadership roles either in their day-to-day work or in organized medicine in any way and those physicians who were involved with teaching were much less likely to report low levels of career satisfaction or dissatisfaction. Physicians who perceived a lack of control over their working conditions, a lack of job security, and that their work environment lacked excitement and personal reward were more likely to report low career satisfaction levels.

Physicians who believed that they did not have enough time for their personal life and those who reported problems with energy levels needed to work and a feeling of burnout were more likely to report low levels of career satisfaction.

Results of the multivariable panel series regression to determine variables associated with burnout are presented in Table 5. Again, in multivariable analysis, physicians who assumed leadership roles either in their day-to-day work or in organized medicine in any way were 40% less likely to report that burnout was a problem. Physicians who perceived a lack of control over their working conditions and a lack of personal reward from work were more likely to report burnout. Physicians who believed that the level of patient acuity, the length of shifts, or the number of night shifts were problematic were also more likely to report burnout. Similarly associated were lack of enough time for personal life, not knowing enough, a lack of energy needed to work, fatigue, and problematic stress levels. Finally, problematic colleagues and an inability to attend educational conferences were highly associated with a feeling of burnout.

LIMITATIONS

Our data are subject to several limitations. First, the data are self-reported and were not verified. Second, we only used a single measure to define career satisfaction. Our measure is robust and has been used in other studies,⁵ suggesting that our measure of career satisfaction is sound. Third, if we assume that all dropouts from our survey represented dissatisfied physicians, we may have overestimated career satisfaction. Alternatively, the converse may be true. Fourth, the terms “burnout” and “stress” were not defined in the survey, so all physicians may not have had the same understanding of the words when completing the survey. Fourth, the population studied is intended to represent those emergency physicians who were in practice in 1994 and who have continued to practice. Our results are not intended to be and may not be generalizable to the population of emergency physicians who entered emergency medicine after this study was initiated. Finally, although these data are longitudinal, we did not attempt to develop a causal model. Therefore, we do not know whether the associations with satisfaction and burnout are the cause or the effect of the condition.

DISCUSSION

To our knowledge, this is the first large study to prospectively and longitudinally report career satisfaction levels and explore variables associated with career satisfaction among emergency physicians. Our data are unique because we were able to use prospective data collected from a cohort of practicing emergency physicians during the course of a decade.

Overall, career satisfaction among emergency physicians remained high between 1994 and 2004. Our findings reflect a higher level of career satisfaction among emergency physicians than previously reported.⁷ More than three-fourths of emergency physicians relate that emergency medicine meets or exceeds their career expectations and that they would pursue a similar career again if they were given a choice. These results paint a much more optimistic picture than that described in recent surveys indicating that 30% to 40% of practicing

physicians would not choose to enter the medical profession if deciding on a career again.³⁴

Our data indicate that women are as satisfied with their careers in emergency medicine as men. Similar findings have been reported in most, but not all, other specialties.^{8,12,35-38} Carr et al³⁶ reported that women in academic careers who have children are less productive and less satisfied than their male colleagues. They found that productivity and satisfaction levels were similar among all men and women without children. We observed that marital status and children were unrelated to career satisfaction and burnout for both sexes and did not evaluate this issue further.

These data suggest that both personal and work-related issues contribute to career satisfaction levels. Physicians in professional leadership roles of any kind report more satisfaction, less dissatisfaction, and less burnout. Similar findings were reported among Canadian physicians.^{39,40} We were unable to determine whether more satisfied physicians seek these roles or whether seeking leadership roles leads to greater satisfaction.

Physicians who do not have enough time for personal life are 3 times as likely to report low career satisfaction/dissatisfaction and twice as likely to experience burnout, whereas physicians with time for a personal life have high career satisfaction levels. Fatigue is highly predictive of burnout, as is a sense of lack of personal reward. These findings suggest that finding a job that allows time for personal life—or making time for personal life—and ensuring adequate rest and fitness are vital to career satisfaction and avoiding burnout. Further research into this area is needed.

A number of workplace conditions and opportunities are associated with overall satisfaction. Exciting work was one of the best work environment predictors of career satisfaction. The opportunity to teach, in an academic environment or at a community level, is associated with both high levels of career satisfaction and low levels of career dissatisfaction, suggesting that teaching is valued by emergency physicians. Although involvement with research, academic writing, and administrative tasks did not predict satisfaction levels in the population studied, involvement with consulting roles and medical politics was associated with higher levels of satisfaction, again suggesting that engagement with one's profession in addition to patient care improves satisfaction.

Physicians working in supportive environments reported more satisfying careers, whereas lack of collegial support strongly predicted burnout. Emergency physicians who reported problems with autonomy and control in their working conditions were more likely to experience low levels of career satisfaction and burnout.

Compensation and job security appear to be fundamental components of professional equity among emergency physicians. Like other groups of US physicians, higher income levels strongly predicted satisfaction.^{7,40}

Although overall career satisfaction remained high among emergency physicians from 1994 to 2004, concerns about high

levels of stress and burnout remain. More than 1 in 10 physicians reported career dissatisfaction and more than one-third of physicians reported significant problems with work-related stress and burnout. Similar levels of career dissatisfaction among emergency physicians were reported by Leigh et al.⁷ Previous estimates of burnout among emergency physicians in the United States range from 25% to 60% and more than 90% among Canadian emergency physicians.^{32,41-45}

Dissatisfaction is an important factor underlying intention to quit and early retirement.^{33,42,46-50} Likourezos et al⁵¹ reported that emergency physicians who were dissatisfied with professional autonomy and compensation were more likely to seek a new position. In addition, dissatisfied physicians are 2 to 3 times more likely to leave medicine than satisfied physicians.⁵⁰

Risk factors for burnout are multifactorial and include underlying personality traits, work stressors, and family stressors.⁵² Factors reported to be associated with burnout include lack of job involvement, excessive clinical workload, night shifts and sleep disturbances, problems with subspecialty services, and unhealthy lifestyle.^{32,41-45} Problems in emergency medicine such as high patient acuity, length of shifts, and number of night shifts have previously been identified as potentially leading to stress and depression.^{32,43-45,49,53-58}

Issues such as feelings of inadequate knowledge base and lack of opportunity to attend conferences predict burnout and are interrelated. We postulate that they reflect the convergence of a rapidly increasing quantity of information required to practice high-quality medicine, increasing acuity of patients presenting for care, and perceived lack of time to pursue new skills.

In summary, to our knowledge this is the first study to prospectively follow a large cohort of emergency physicians and examine the association of personal and work-related issues with career satisfaction. We found that more than half of emergency physicians report high levels of career satisfaction. Physicians who assume leadership roles, make time for their personal lives and wellness needs, work in a supportive environment, feel well compensated, and are engaged in teaching, consulting, or medical politics are more likely to be highly satisfied with their careers. Although career satisfaction has remained high among emergency physicians, concern about burnout is substantial. Understanding factors associated with career satisfaction and burnout may help guide physicians in making satisfactory career choices.

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Appendix E1. Variables included in panel series regression analysis.

1. Serious problem with ancillary support services
2. Serious problem with attending conferences
3. Serious problem with burnout*
4. Serious problem with colleagues
5. Serious problem with EMS support
6. Serious problem with fatigue
7. Serious problem with having enough time for family
8. Serious problem with having enough time for personal life
9. Serious problem with hospital administration
10. Serious problem with hospital politics
11. Serious problem with income
12. Serious problem with keeping up with the medical literature
13. Serious problem with knowing enough
14. Serious problem with length of shifts
15. Serious problem with level of energy needed to work
16. Serious problem with level of patient acuity
17. Serious problem with number of shifts
18. Serious problem with number of night shifts
19. Serious problem with nursing staff
20. Serious problem with stress
21. Serious problem with subspecialty support
22. This work condition is available in my current position: Administrative opportunity
23. This work condition is available in my current position: Autonomy in work
24. This work condition is available in my current position: Opportunity to attend conferences
25. This work condition is available in my current position: Compatible colleagues
26. This work condition is available in my current position: Control over working condition
27. This work condition is available in my current position: Defined working hours
28. This work condition is available in my current position: Exciting work
29. This work condition is available in my current position: Fair compensation
30. This work condition is available in my current position: Fringe benefits
31. This work condition is available in my current position: Job security
32. This work condition is available in my current position: Personal reward
33. This work condition is available in my current position: Opportunity for subspecialization
34. This work condition is available in my current position: Sense of ownership
35. This work condition is available in my current position: Sufficient up-to-date equipment
36. This work condition is available in my current position: Promotion opportunity
37. This work condition is available in my current position: Research opportunity
38. This work condition is available in my current position: Teaching opportunity
39. I spend at least 1–4 hours per week in clinical practice of emergency medicine
40. I spend at least 1–4 hours per week in academic writing
41. I spend at least 1–4 hours per week in administration
42. I spend at least 1–4 hours per week in clinical practice
43. I spend at least 1–4 hours per week in clinical teaching
44. I spend at least 1–4 hours per week in consulting
45. I spend at least 1–4 hours per week in research
46. Emergency medicine residency training
47. Income from emergency medicine
48. Practice setting
49. ED census
50. ED demographics
51. Member of organization
52. Offices held
53. Current role in work for pay
54. Leadership roles
55. Date of birth
56. Years in practice
57. Sex
58. Racial or ethnic group
59. Present marital status
60. Number of living children

*Not included as a variable in analysis in which burnout was the dependent variable.
