

Education



WELL-BEING AMONG EMERGENCY MEDICINE RESIDENT PHYSICIANS: RESULTS FROM THE ABEM LONGITUDINAL STUDY OF EMERGENCY MEDICINE RESIDENTS

Debra G. Perina, MD,^{*} Catherine A. Marco, MD,[†] Rebecca Smith-Coggins, MD,[‡] Terry Kowalenko, MD,[§]
Mary M. Johnston, PhD,^{||} and Anne Harvey, PhD^{||}

^{*}Department of Emergency Medicine, University of Virginia, Charlottesville, Virginia, [†]Department of Emergency Medicine, Wright State University, Dayton, Ohio, [‡]Department of Emergency Medicine, Stanford University, Stanford, California, [§]Department of Emergency Medicine, University of Michigan Health System, Beaumont, Ann Arbor, Michigan, and ^{||}American Board of Emergency Medicine, East Lansing, Michigan

Reprint Address: Debra G. Perina, MD, Department of Emergency Medicine, University of Virginia, P.O. Box 800699, Charlottesville, VA 22908

Abstract—Background: The Longitudinal Study of Emergency Medicine Residents (LSEMR) conducted by the American Board of Emergency Medicine queries a randomized cohort of emergency medicine (EM) residents. It is designed to identify residents' perceptions of their training, sources of stress, well-being level, and career choice satisfaction over time. **Objectives:** This study utilizes LSEMR to identify resident well-being levels, career satisfaction, factors producing stress, and whether a specific cohort is more stressed than the overall respondent group. **Methods:** Data from five longitudinal cohorts were analyzed using descriptive statistics to assess stressors, career satisfaction, and self-reported resident well-being. **Participants'** answers were reported on a 5-point Likert scale. **Results:** There were 766 residents who completed the survey in five cohorts. Respondents were 30 years old (median 29), male (66%), and predominantly White (79%). The most frequently encountered problems included "time devoted to documentation and bureaucratic issues," "knowing enough," and "crowding in the emergency department." In contrast, the least frequently reported problems included "gender discrimination," "EMS support," "minority discrimination," and "other residents." Respondents thought being an EM resident was fun and would select EM again. Less than 20% indicated they had seriously considered transferring to another EM program. Resident reports of health concerns changed over time, with fewer residents reporting they were exceptionally healthy in 2016. **Conclusions:** Residents

are, overall, happy with their career choice. However, concern was expressed regarding continued well-being in training. Sources of stress in training are identified. Strategies should be developed to decrease identified stressors and increase well-being among EM residents. © 2018 Elsevier Inc. All rights reserved.

Keywords—well-being; resident training; stressors in training

INTRODUCTION

Residency training is inherently time consuming and stressful. Educators and oversight organizations have sought to identify and mitigate issues that might affect resident well-being during training. Previous studies into this issue have been general in nature, with few specialty specific. As the practice of emergency medicine (EM) has unique stressors, we sought to identify sources of stress for EM residents, if these changed over time, and explore ways to mitigate any identified stressors.

The Longitudinal Study of Emergency Medicine Residents (LSEMR) is conducted by the American Board of Emergency Medicine and queries a randomized cohort of EM residents. Participation is voluntary, and answers are

pooled and anonymous. The survey consists of a demographic section, questions on professional interests, attitudes, and goals, extent to which various factors are problematic, scale of personality traits, and self-reported well-being and leisure activities. It is designed to identify residents' goals, aspirations, motivation, effects of training on well-being, and satisfaction with career choice changes over time. In addition, it also contains questions directly relevant to identification of sources of stressors. This study seeks to use the LSEMR results from five separate cohorts to identify specific factors that produce stress in EM residents, effects this may have had on their career choice, and if a specific cohort is more stressed than the overall group.

METHODS

Study Design and Population

A randomized cohort of EM residents identified at the beginning of entrance into an EM training program are solicited in their first year of training and asked to complete an annual survey. New cohorts are solicited every 5 years. Participation in the LSEMR is voluntary and all responses are de-identified and aggregated. The first panel of residents was gathered in 1996. The current study used data from five panel cohorts: 1996, 2001, 2006, 2011, and 2016. The number of respondents and response rates for each panel are presented in [Table 1](#). With the exception of 2011, the response rate across panels was > 80%. This study was reviewed and determined to be exempt by the University of Virginia Institutional Review Board.

Measures

Residents participating in the LSEMR are sent a survey of approximately 60 items divided into five sections: (A) Professional Interests, Attitudes, and Goals; (B) Training and Certification; (C) Professional Experience; (D) Well-being and Leisure Activities; and (E) Demographic Information. Eleven questions from the survey pertaining to residents' perceptions about their EM program, severity of problems encountered during their training, personality traits, attitudes, and well-being were analyzed for the cur-

rent study (see Appendix, [Supplementary Table 1](#)). The majority of questions were answered using either a 4-point or 5-point Likert rating scale where higher values indicate higher levels of agreement. For example, respondents answered the question "Overall, how much fun is it to be an EM resident?" using a 5-point Likert scale ranging from 1 (*Almost Never Fun*) to 5 (*Almost Always Fun*).

Data Analysis

Analyses were performed using SAS 9.4 (1). Descriptive statistics including means and standard deviations for continuous variables, and percentages and sample size for categorical variables were calculated and reported. Multiple regression and chi-squared goodness-of-fit analyses were used to evaluate whether residents' severity of perceived problems, attitudes, decisions about future changes, and well-being changed over time. Significant regression omnibus tests were followed with pairwise comparisons. Significant chi-squared goodness-of-fit tests were followed with a post hoc analysis of standardized residuals (2). Stepwise regression analyses were conducted to evaluate if EM residents' personality traits predicted how much fun they had as an EM resident.

RESULTS

Respondent demographic information across the five survey panels is presented in [Table 2](#) (see Appendix, [Supplementary Table 2](#) for demographic information by panel). Of the 766 residents who completed the survey, 713 provided demographic information. On average, respondents were 30 years old (median age 29), male (66.20%), and predominantly White (79.10%). Approximately half of the respondents indicated they were married (49.93%) or single or cohabitating (46.70%). The demographics of the LSEMR respondents in this study are similar to the demographics of the total 2017 EM resident population (3). For example, the median age of the 2017 EM resident population was 31 years, 65% were male, and 65% were White. Thus, we believe our results can be generalized to the total EM resident population.

Descriptive statistics of the problems residents encountered in their daily life residents are presented in [Table 3](#), rank ordered starting with problems reported in the 2016 cohort. The most frequently encountered problems included "time devoted to documentation and bureaucratic issues," "knowing enough," and "crowding in the emergency department." In contrast, the least frequently reported problems included "gender discrimination," "EMS support," "minority discrimination," and "other residents."

Putting the 2016 results in the context of all five survey panels, the top 10 ranked problems for each panel are

Table 1. Number of Participants, By Panel

Panel	Number of Participants	Response Rate	Length of Survey (Number of Items)
1996	147	92.45%	63
2001	169	91.35%	63
2006	163	81.91%	62
2011	111	58.42%	59
2016	176	88.89%	59

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