

Surveying Fourth-Year Medical Students Regarding the Choice of Diagnostic Radiology as a Specialty

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Abstract

Purpose: The aim of this study was to survey fourth-year medical students, both those choosing and those not choosing diagnostic radiology as their specialty, regarding factors influencing their choice of specialty and their perceptions of radiology.

Methods: A voluntary anonymous online survey hyperlink was sent to 141 US medical schools for distribution to fourth-year students. Topics included demographics, radiology education, specialty choice and influencing factors, and opinions of radiology.

Results: A representative sampling (7%) of 2015 fourth-year medical students (n = 1,219; 51% men, 49% women) participated: 7% were applying in radiology and 93% were not. For respondents applying in radiology, the most important factor was intellectual challenge. For respondents applying in nonradiology specialties, degree of patient contact was the most important factor in the decision not to choose radiology; job market was not listed as a top-three factor. Women were less likely than men to apply in radiology ($P < .001$), with radiology selected by 11.8% of men (56 of 476) and only 2.8% of women (13 of 459). Respondents self-identifying as Asian had a significantly higher ($P = .015$) likelihood of selecting radiology (19 of 156 [12.2%]) than all other races combined (44 of 723 [6.1%]). Respondents at medical schools with required dedicated medical imaging rotations were more likely to choose radiology as a specialty, but most schools still do not require the clerkship (82%).

Conclusions: The reasons fourth-year medical students choose, or do not choose, diagnostic radiology as a specialty are multifactorial, but noncontrollable factors, such as the job market, proved less compelling than controllable factors, such as taking a radiology rotation.

Key Words: Medical students, radiology, specialty choice

J Am Coll Radiol 2016;13:188-195. Copyright © 2016 American College of Radiology

INTRODUCTION

At the beginning of their fourth year, medical students commit to their choice of specialty by applying to residency programs. Although over the past several years, the

number of students applying to medical school has increased [1], the number of fourth-year medical students applying in diagnostic radiology has declined [2]. Specifically, 2015 saw an all-time low for the number of applications to radiology and an all-time high for the number of unmatched radiology residency spots on match day [3]. Although some strongly believe that this is directly related to the job market, others believe it is multifactorial [4]. However, without hard data, both beliefs are purely conjectural.

Several prior studies have investigated factors influencing medical students' choice of specialty. In 2003, *JAMA* published an article that reported on the influence of controllable lifestyle as a trend that influenced medical students' specialty choice [5]. In the radiology literature, studies have looked at fourth-year medical students' knowledge about a specialty [6] and the impact of early exposure to radiology on medical students' opinions of

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The authors have no conflicts of interest related to the material discussed in this article.

the field [7,8]. To our knowledge, no study has specifically investigated the factors influencing fourth-year medical students' decisions to choose or not choose radiology as their future specialty. Given declining applications to radiology, specific knowledge of these factors could help radiology educators better understand the situation and develop programs to reverse this trend.

The purpose of this study was to survey fourth-year medical students, both those choosing and those not choosing diagnostic radiology as their specialty, regarding factors influencing their choice of specialty and their perceptions of diagnostic radiology.

METHODS

In January 2015, an e-mail invitation to participate in our anonymous, voluntary survey was sent to the radiology contact at each of the 141 medical schools in the United States, as listed by the Alliance of Medical Student Educators in Radiology. These contacts were asked to distribute the survey hyperlink to their current fourth-year medical students. The survey was hosted at SurveyMonkey.com, a web-based survey provider, and was composed of 21 questions (Appendix 1). Survey responses were collected between January 5, 2015, and February 28, 2015; during this time, general reminder e-mails were sent to the list server, and each author personally contacted 10 to 15 medical schools to try to increase participation.

Survey responses were analyzed for trends, and descriptive statistics were calculated to describe the study subject population. A new variable was created that indicated whether a respondent had received dedicated imaging training either by requirement or by personal choice. Twenty-one factors were rated in terms of importance regarding the choice of specialty, and respondents rated their levels of agreement with nine statements about radiology. These factors were converted to five-point Likert-type scores, as shown in Table 1. Fisher exact tests were used to assess whether the likelihood of selecting radiology as a specialty was influenced by gender, race/ethnicity, whether dedicated imaging training was required, and whether dedicated imaging training was taken either by requirement or by choice.

RESULTS

Demographics

In total, 1,219 fourth-year medical students participated in this study, corresponding to a response rate of 7%;

Table 1. Cross-tabulation of students with respect to whether the required imaging training turned them toward or away from radiology and whether they selected radiology as their specialty

Radiology Selected as Specialty?	Direction Required Imaging Turned Student With Respect to Radiology		
	Away	Neither	Toward
No	18	144	19
Yes	1	1	19

18,078, the number of 2014 medical school graduates in the United States [9], was taken as representative of the total number of potential respondents to our survey ($1,219/18,078 = 7\%$). Fifty-one percent of respondents were men and 49% were women. The majority (62%) were white, 15% were Asian, and 6% or less represented all other categories (Hispanic or Latino 4%, black or African American 6%, Native American <1%, two or more races 5%, prefer not to answer 6%). Figure 1 shows the intended future specialties of the survey respondents: 7% were planning careers in diagnostic radiology and 93% were not (specifically, 39% medicine or primary care, 23% surgery or a surgical subspecialty, 6% obstetrics and gynecology, and 25% other fields).

Dedicated Imaging Training

Nine hundred ninety-six students (81.7%) reported that dedicated imaging rotations were not required at their medical schools; of those, 963 answered the question regarding whether they decided to take radiology electives, and 588 (61.1%) answered affirmatively. Of the 588 students who took electives, their reasons for doing

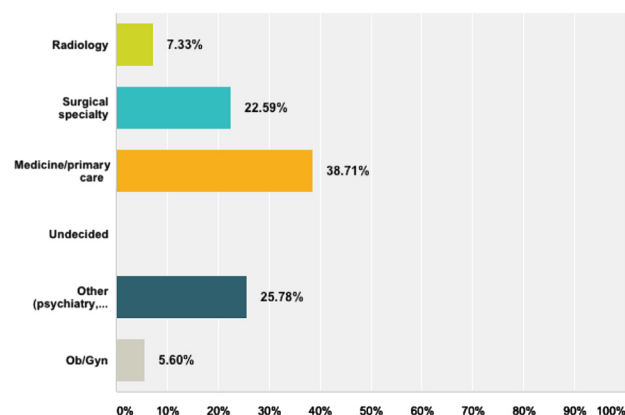


Fig 1. Anticipated future specialties of fourth-year medical student respondents.

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