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The Exposure Dilemma: Qualitative Study of Medical Student Opinions and Perceptions of Radiology

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Abstract

Purpose: According to a national survey of over 900 Canadian medical students, the stereotype of an isolated radiologist working in a dark room persists. The purpose of this study is to use qualitative methods to explore the ways exposure to radiology in medical school impacts students' opinions and perceptions of radiology and radiologists.

Methods: After receiving ethics approval, 4 focus groups were conducted, 1 per year of undergraduate medical training at Western University. The transcribed audio recordings and accompanying field notes, together with the open-ended questions obtained from the national survey, were analyzed using thematic analysis.

Results: Five hundred sixty students in medical school years 1 and 2 (preclerkship) participated in the national survey and 18 in the focus groups; 336 students in years 3 and 4 [clerkship] participated in the national survey and 10 in the focus groups. Three major findings emerged from the analysis of the data. First, stereotypes are perpetuated mainly through informal interactions. Second, there is limited exposure to radiology and radiologists in medical school, especially in preclerkship. Third, students want to know what to expect if they choose a career in radiology.

Conclusions: Medical students, especially those in preclerkship, are seeking accurate information to modify or reinforce radiology stereotypes. Limited exposure makes interactions with students impactful and mentorship essential. Students want meaningful interactions with radiologists and radiology residents.

Résumé

Objectif : Un sondage national mené auprès de plus de 900 étudiants en médecine canadiens révèle que le stéréotype du radiologiste travaillant seul dans une chambre noire persiste. Cette étude a pour objectif d'utiliser des méthodes qualitatives pour explorer la façon dont l'exposition à la radiologie pendant les études en médecine influe sur l'opinion et les perceptions des étudiants à l'égard de la radiologie et des radiologistes.

Méthodes : Une fois le projet approuvé par le comité d'éthique, quatre groupes de discussion ont été réunis, soit un à l'intention des étudiants de chaque année d'études de premier cycle en médecine à la Western University. La transcription des enregistrements sonores et les notes prises sur le vif, ainsi que les réponses aux questions ouvertes recueillies dans le cadre du sondage national ont fait l'objet d'une analyse thématique.

Résultats : Cinq cent soixante étudiants de première et de deuxième années de médecine (avant le début du stage clinique) ont participé au sondage national et 18, aux groupes de discussion, alors que 336 étudiants de troisième et de quatrième années (stage clinique) ont participé au sondage national et 10, aux groupes de discussion. L'analyse des données a permis trois grandes observations. D'abord, les stéréotypes sont principalement perpétués dans le cadre d'échanges informels. Ensuite, les étudiants en médecine sont peu exposés à la radiologie et aux radiologistes, surtout s'ils n'ont pas encore fait de stage clinique. Enfin, les étudiants veulent savoir ce qui les attend s'ils choisissent de poursuivre une carrière en radiologie.

Conclusions : Les étudiants en médecine, en particulier ceux qui n'ont pas encore effectué de stage clinique, veulent obtenir des renseignements exacts qui permettront de briser ou de confirmer les stéréotypes associés à la radiologie. Cette exposition limitée à la

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radiologie donne un caractère percutant aux interactions avec les étudiants et un caractère essentiel au mentorat. Les étudiants veulent avoir des interactions concrètes avec les radiologistes et les résidents en radiologie.

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Key Words: Education; Medical students; Radiology and radiologists; Qualitative research; Undergraduate medical education

According to a national survey (NS) of more than 900 Canadian medical students, the stereotype of an isolated radiologist working in a dark room persists [1]. This study also found that one of the most cited factors deterring medical students from pursuing a career in radiology is lack of previous exposure or mentorship in the field. Furthermore, lack of exposure to research and observerships was offered as a possible factor contributing to the persistently low number of females pursuing a career in radiology. These findings reflect a problem for the future of radiology. With a trend towards decreasing applications for radiology resident programs, it is of interest to explore new possibilities for promoting the profession. Although more studies are needed to better assess this association, the question remains—how does exposure to radiology in medical school shape students' opinions and perceptions of radiology and radiologists?

Previous studies have found that exposure to radiology in preclinical years has a positive and long-lasting impact on medical students' attitudes towards radiology. Also, early exposure reduced the prevalence of negative stereotypes about radiologists among graduating medical students [2,3]. Furthermore, a study that involved the development of a radiology medical student society with active staff involvement demonstrated a 5-fold increase in the number of students applying to radiology as a career [4].

The methodology of the aforementioned studies used quantitative methods, primarily surveys with closed-ended questions. Although valuable, there has been a growing recognition in medical education literature that some of the relevant and pressing questions in the field cannot be satisfactorily explored with this approach [5]. As such, a valuable complementary approach is the application of qualitative methods to gain new insights into the experiences and perspectives of medical students [6]. In radiology education literature, there is a salient deficit of qualitative studies that endeavor to better understand how medical students develop their perceptions of radiology and radiologists, as well as how these perceptions may impact the profession.

The purpose of this study was 2-fold and will be presented in 2 papers. For this paper, we used qualitative methods to explore how exposure to radiology during medical school impacts medical students' opinions and perceptions of radiology and radiologists. To do this, we used student comments collected by the NS combined with data from focus groups (FG) of medical students at 1 medical school to further explore 2 main questions:

1. What are the perceptions that medical students have of radiology and of radiologists?
2. How does formal and informal exposure to radiology in medical school shape these perceptions?

After presenting our findings, we discuss the potential implications of these perceptions on the future of the profession.

Methods

Rationale

Qualitative methodology was chosen for its potential to interpret human experience in order to identify problems and form theories [7]. Of the various qualitative methods, FGs were deemed most appropriate for several reasons. FGs allow for a discussion of complex topics and emphasize the interactions among participants to generate data and explore multiple perspectives on a topic. In theory, the group setting provides a safe environment that enables participants to share experiences and perceptions and to discuss difficulties or suboptimal practices. Also, interactions among participants can provide valuable information regarding group norms and less easily articulated attitudes [6,8].

Design

Following institutional ethics approval, between September 2012 and April 2013, students in each of the 4 years of undergraduate medical education from Western University, London, Ontario, Canada were invited to participate in FGs. Participation was voluntary and written informed consent was attained. To protect anonymity and confidentiality no personally identifiable data was collected. For this reason, we are unable to attribute comments to specific participants.

Data were collected by way of semi-structured FGs utilizing a moderator guide (Appendix 1) developed from the literature [9] and through discussion among the authors about the purpose of the study and the findings of the previous (NS) study. Each session was 1.5–2 hours in length and moderated by the primary investigator (K.L.V.). Sessions were recorded using a voice recorder and transcribed verbatim. Field notes were taken by the coauthor (G.N.) to document interactions, expression and events that would not have been captured on the voice recordings.

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