

A Follow-up Longitudinal Survey on a Cohort of Undergraduate Medical Students' Attitudes towards Radiology

Dear Editor,

As a follow-up to an earlier study comparing the attitudes of first year undergraduate medical students following the introduction of a new radiology curriculum in 2008 with their clinical seniors who did not have an early exposure to radiology;¹ we again surveyed this same cohort of first year students who are now in their fifth year in 2013 to see if their attitudes towards radiology have changed.

Introduction

Revision of the first-year curriculum with 13 1-hour formal radiology lectures was done in 2008/9. This came about as we realised that radiology was not a popular specialty for undergraduate student electives or postgraduate training amongst students from a local undergraduate medical school.¹ For example, out of the May and November 2007 intakes of the first-year radiology medical officers (MOs), only 1 in 5 (20%) MOs was a graduate from the local undergraduate medical school.² The rest were graduates from overseas medical schools.

Our primary aim is to attract more local students to join the radiology residency and our secondary aim is for the rest of the students to appreciate radiology and to learn how to optimally utilise radiology services for patient management. Earlier studies have shown that early exposure of first-year medical students to radiology improved their impression of radiology as a specialty.³

Our initial survey in 2009 showed that early exposure of first-year medical students to radiology increased their interest in the subject.¹ Further changes were made to their radiology curriculum in subsequent years: second year – 8 formal lectures; third and fifth year – small group tutorials; and fourth year – 1-week radiology department attachment. Given that this is the first batch of students to have continued exposure to radiology throughout all the 5 years, and that we wanted to evaluate as to whether the interest in radiology that we saw in this cohort during their first year is sustained to their fifth year, we decided to survey this same cohort of students.

Materials and Methods

The same hard copy anonymous 6-question survey

that was administered to these students in their first year (2009) was administered to them in their fifth year (2013). Exemption from full Institutional Review Board (IRB) review was sought and approved by the National University of Singapore (NUS) IRB. Survey forms were distributed to students at the start of their lecture and collected at the end. Survey responses were tabulated and students' attitudes whilst they were in their first and fifth years were compared using the Mann-Whitney rank sum tests.

Results

The response rate to the survey was 118 out of 270 students. Figure 1 summarises the results comparing the same cohort of students' response to the same administered survey whilst they were in year 1 and year 5 of medical school.

Non-parametric statistically testing was used for data analysis as the responses were not a continuous variable, and the differences between responses were not equal. The two surveys done in 2009 and 2013 were also considered to be independent samples as the respondents were not identifiable.

Students' response to Question 1 (How much do you know about radiology?) showed a statistically significant difference in response when they were in year 1, compared to when they were in year 5 (P = value for median was 0.007, P -value for distribution was 0.044).

Students' response to Question 2 (How much radiology have you been exposed to?) showed 57% of students attending lectures and study sessions when they were in year 5, compared to 1.9% when they were in year 1.

Students' response to Question 3 (How interesting is the subject matter in radiology?) showed 50% of students found radiology to be interesting in its own right in year 5, compared to 30.3% when they were in year 1.

This, however, did not translate into more students considering radiology as a career (Question 4) or as an elective (Question 5). In fact, there were more polarised responses with respect to radiology as a career, with more students adopting a negative disposition.

There was also a more polarised response to the impact of radiology on other areas of medicine (Question 6), with a tendency towards radiology playing a more conservative role.

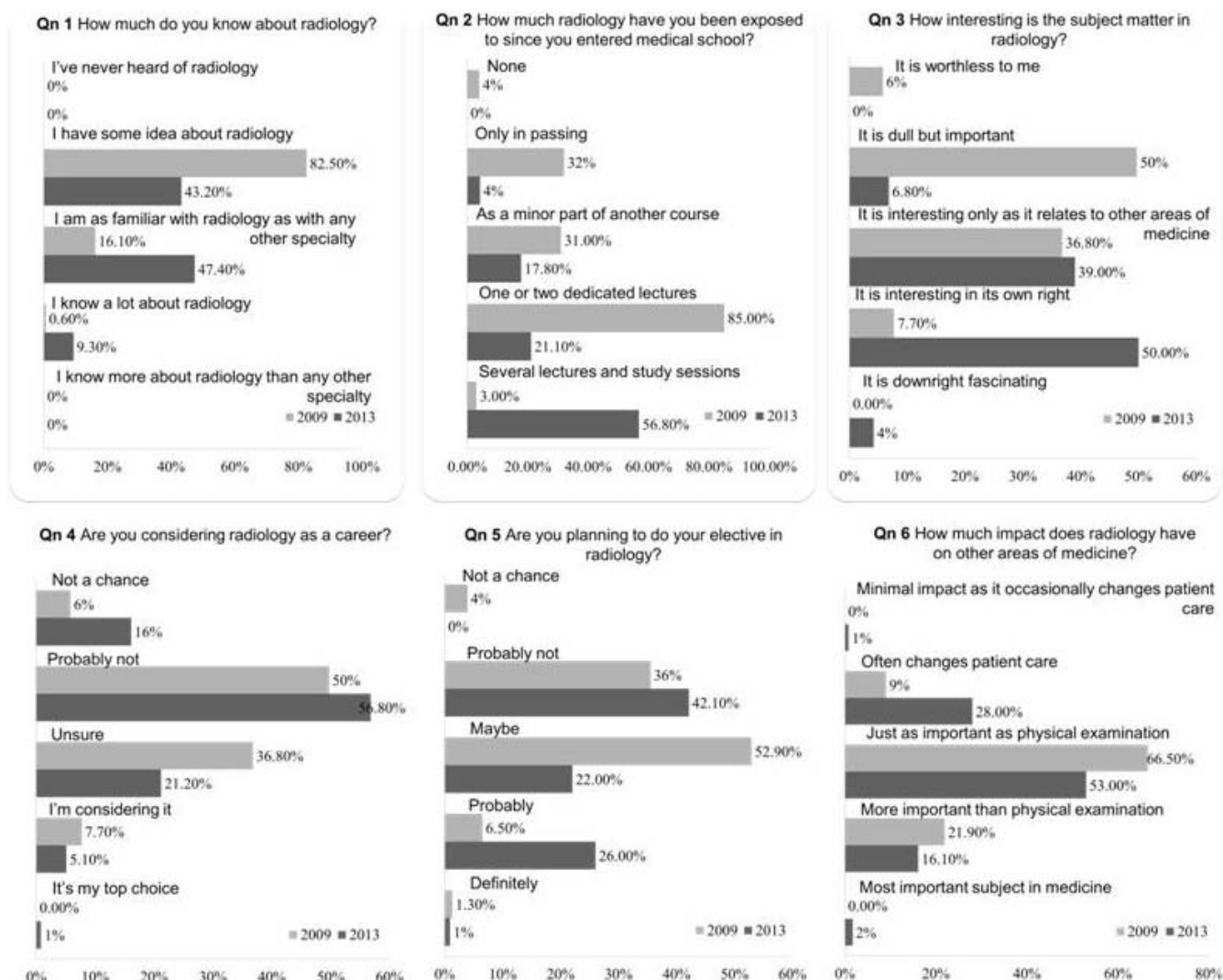


Fig. 1. Survey questions and comparison of results of the same cohort in 2009 (year 1) and 2013 (year 5).

Discussion

Although the survey results did not achieve our main aim of increasing the popularity of radiology as a student elective or career choice, we managed to demonstrate a significant increase in students feeling familiar with radiology as with other specialties, a higher percentage of students attending radiology teaching sessions, and an increase in the percentage of students feeling that radiology was interesting in its own right.

Since the start of the Accreditation Council of Graduate Medical Education-International (ACGME-I) Diagnostic Radiology Residency in 2011, we have also been trying to engage local medical students through other channels; for example, holding Open House and tea-sessions for final-year medical students with one-on-one meetings with the faculty for career development.

On the ground, we have been seeing the fruits of our labour. In 2008, we only had 1 out of 5 (20%) radiology residents who were graduates from our local undergraduate medical school. Since the start of the ACGME-I Diagnostic Radiology residency and our repeated attempts to increase the profile of radiology in our local undergraduate medical school, our residency intake with graduates from the local medical school has increased to between 60% to 75% and are as follows: 2011: 3 out of 4 residents; 2012: 3 out of 4 residents; 2013: 3 out of 5 residents.

Conclusion

Early and continued exposure of students to radiology increases their interest and appreciation of this subject. Although this longitudinal survey is not reflective of increased popularity of radiology as a student elective or

career choice (which was our primary aim), on the ground, we are seeing more local graduates join the radiology residency system in our institution. It would, however, be interesting to know the application rates from the local medical school before and after the revised medical school curriculum, something that is beyond the scope of our study.

Our secondary aim for students to appreciate and learn how to optimally use the radiology department has been achieved, given that it is so important for all doctors to appreciate the utility of various imaging modalities, and to refer patients appropriately for radiological investigations.

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REFERENCES

1. Teo LLS, Venkatesh SK, Goh PS, Chong VFH. A survey of local preclinical and clinical medical students' attitudes towards radiology. *Ann Acad Med Singapore* 2010;39:692-4.
2. Department of Diagnostic Imaging, National University Hospital, Singapore. Postgraduate trainee-mentor lists of May 2007, November 2007, May 2008 and November 2008.
3. Branstetter BF 4th, Faix LE, Humphrey AL, Schumann JB. Preclinical medical student training in radiology: the effect of early exposure. *Am J Roentgenol* 2007;188:W9-14.