

Cultivating Interest in Oncology Through a Medical Student Oncology Society

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Abstract The purpose of this descriptive analysis is to describe a formal method to foster interest in oncology among medical students through a Student Oncology Society (SOS). The SOS is a student-run multidisciplinary interest group that offers oncology-related events to interested medical students at the Boston University School of Medicine (BUSM). We employed a student survey to document the impact of the SOS on student interest in careers in oncology and students' perceived accessibility of mentors in oncology at our institution. All 35 students who attended the event reported that they found the discussion panels "valuable" or "somewhat valuable." A minority of students reported that student and faculty were "somewhat accessible" or "very accessible." At the end of the survey, 37 % of the students reported that a discussion of career paths of various physicians or a student/resident panel on oncology would be beneficial. By giving students an opportunity to learn about the different medical and surgical specialties within oncology, the SOS is able to cultivate early interest and understanding of the field of oncology among pre-clinical medical students. Further work must be done to connect medical students to faculty mentors in oncology. Although this short report provides a model for other medical schools to begin their own student oncology interest groups, further rigorous evaluation of pre-clinical oncology

education initiatives are necessary in order to document their long-term impact on medical education.

Keywords Medical students · Oncology · Student Oncology Society

Introduction

Cancer accounts for almost one in every four deaths and is the second most common cause of death in the USA. However, formal exposure to oncology is limited during the traditional pre-clinical and clinical aspects of undergraduate medical education [5, 1, 12]. Recognizing the need for more structured oncology education for the physician workforce as a whole, medical schools have increased exposure through dedicated pre-clinical oncology modules as well as clinical rotations in medical oncology, surgical oncology, and radiation oncology [2, 7, 4, 16].

An extracurricular pre-clinical interest group in oncology can provide an avenue for students to identify and pursue experiences in oncology beyond the traditional medical school curriculum. Institutions with student interest groups in dermatology, surgery, family medicine, and internal medicine among others have shown that these groups foster early career interest, create mentorship relationships between faculty and students, and encourage student research in the field [9–11, 13]. At the Boston University School of Medicine (BUSM), the Student Oncology Society (SOS), a group organized by second-year medical students and led by a faculty radiation oncologist, has hosted events to generate interest in oncology since 2006.

The purpose of the SOS is not only to cater to the needs of medical students with a particular interest in oncology but also to inform students planning to enter other specialties, since

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many non-oncologists are often at the frontline of screening for cancer and managing cancer survivors. To our knowledge, this is the first documented effort to describe a medical student oncology interest group.

Methods

Structure of the SOS

The SOS is a student-run multidisciplinary interest group created to promote and develop interest in oncologic specialties. The student government-funded organization is led by three to four second-year medical students and a radiation oncology faculty mentor.

SOS Events

The SOS organizes physician panels, oncology case discussions, volunteering events, shadowing opportunities, and career seminars. The career pathways event typically hosts a panel of physicians, including medical oncologists, pediatric oncologists, surgical oncologists, radiation oncologists, and others oncology specialists from our institution. These physicians discuss their career path and describe their typical work day in addition to answering questions from students. By discussing their different roles in the care and management of cancer patients, the physicians highlight the importance of a multidisciplinary cancer team. In the spring, the SOS hosts a palliative care panel consisting of a palliative care physician, a geriatric nurse practitioner, a hospital chaplain, and a bereavement care social worker. At the end of each academic year, the society hosts a student panel of fourth-year medical students and residents who are interested in careers in oncology. The SOS also collaborates with other groups, such as the Radiology Interest Group, to host interactive case discussions that discuss the imaging and management of cancer patients.

During the annual hospital-wide cancer screening day, the SOS pairs students with physicians to provide free cancer

screening and education for the community. Furthermore, students are encouraged to sign up to attend tumor board meetings, shadow individual physicians, and tour the radiation oncology department to obtain early experiential exposure to cancer care.

Study Population, Design, and Statistical Analysis of Student Survey

Students attended a recent lunchtime meeting on careers in oncology featuring a surgical oncologist, a gynecologic oncologist, a medical oncologist, and a radiation oncologist to discuss careers in medicine in February of 2014. A total of 35 students attended the event and 23 completed the survey questionnaire (response rate=65.7 %). Of the 23 students, six (26 %) had attended a previous SOS event. Students were asked to complete a short, 10-question survey to evaluate their perception of oncology education at BUSM, their interest in oncology, and the usefulness of the current panel discussion. Question 1 asked if students had attended an SOS event in the past. Student responses for questions 2–10 followed a 5-point Likert scale, with a score of 3 indicating “uncertain.” The final question asked students what types of lunchtime sessions they would find most useful, with options including discussion about career paths of various physicians, multidisciplinary case study, student/resident panel on oncology, and other (please specify). All questions are listed in Table 1. The average (mean) and standard deviation were reported for each response.

Results

Summary statistics for questions 2–9 are reported in Table 2. All students reported that they were more interested in oncology now than they were before entering medical school, with average ratings of 3.74 before medical school and 4.48 now. A majority of the students (19, 83 %) reported they were either “somewhat interested” or “very interested” in oncology

Table 1 Survey questions

Question number	Question
1	Have you attended Student Oncology Society events in the past?
2	How would you rate your interest in oncology prior to entering medical school?
3	How would you rate your interest in oncology at this point in time?
4	How interested are you in working in oncology in the future?
5	How interested are you in oncology research?
6	What is your perceived accessibility of student mentors in oncology?
7	What is your perceived accessibility of faculty mentors in oncology?
8	How would you rank the quality of oncology education at Boston University School of Medicine?
9	How valuable was this meeting?
10	What would be the most valuable for a lunch meeting in the future?

Table 2 Student responses to survey questions

Question number	Very disinterested	Somewhat disinterested	Uncertain	Somewhat interested	Very interested	Student (<i>n</i> =23) responses mean (standard deviation)	Responses of students who have attended previous SOS events (<i>n</i> =6) mean (standard deviation)	Responses of Students who have not attended previous SOS events (<i>n</i> =17) mean (standard deviation)
2	3	0	5	7	8	3.74 (1.32)	3.67 (1.51)	3.76 (1.30)
3	0	0	1	10	12	4.48 (0.59)	4.83 (0.41)	4.35 (0.61)
4	0	0	3	9	11	4.35 (0.71)	4.50 (0.84)	4.29 (0.69)
5	0	1	3	8	11	4.26 (0.86)	4.17 (1.33)	4.29 (0.69)
6	Very inaccessible 0	Somewhat inaccessible 2	Uncertain 15	Somewhat accessible 4	Very accessible 2	3.26 (0.75)	3.50 (1.05)	3.18 (0.64)
7	0	1	14	4	4	3.48 (0.85)	4.17 (0.98)	3.24 (0.66)
8	Very poor 0	Poor 1	Uncertain 10	Good 10	Very good 2	3.56 (0.73)	3.83 (1.17)	3.47 (0.51)
9	Not at all valuable 0	Not valuable 0	Uncertain 0	Valuable 12	Very valuable 11	4.48 (0.51)	4.50 (0.55)	4.47 (0.51)

research. When asked about their perceived accessibility of student mentors, 15 students (65 %) reported that they were uncertain. Similarly, 14 (61 %) students reported that they were uncertain regarding the accessibility of faculty mentors. A minority of students reported that student mentors and faculty mentors were somewhat accessible or very accessible, with mean scores of 3.26 and 3.48, respectively, for each question. All students reported that they found the panel discussion event to be either “somewhat valuable” or “very valuable.”

Students who had attended previous SOS events reported a higher average interest in oncology, with a score of 4.83, as compared to a score of 4.35 among students who had not previously attended an event. Similarly, students’ perceived accessibility of faculty mentors was higher among those students who had attended previous events. Notably, the difference in the students’ interest in oncology before entering medical school was not significantly different between the two groups, at 3.67 and 3.76, respectively. Similarly, the difference in students’ interest in oncology research was not significantly significant, at 4.17 and 4.29, respectively.

At the end of the survey, students were asked, “What would be most valuable for a lunch meeting in the future?” Four (17 %) students chose “multidisciplinary case study,” nine (39 %) students chose “discussion about career paths of various physicians,” and four (17 %) chose “student/resident panel on oncology.” There was also the option of “other” where students could fill in their own ideas about future lunch topics. Those who chose “other” had ideas such as “information about clinical and hospital opportunities for students,” “information for BU students interested in pediatric oncology,” and “how to pursue oncology research and resources for students.”

Discussion

The primary goal of the SOS is to stimulate interest in oncology by exposing medical students to the field. The rise in interest in oncology among first-time attendees during the time of the survey as compared to before they entered medical school may reflect the results of the Oncology Education Initiative (OEI) at our institution [8, 2, 7]. The OEI has integrated oncology education throughout our medical school curriculum. During the pre-clinical curriculum, students learn via oncology cases during the first-year anatomy class and complete a dedicated pre-clinical oncology block led by a faculty radiation oncologist during the second year. During the clinical curriculum, all students receive a didactic lecture on radiation oncology during the required radiology block and approximately 50 % of students spend time in the radiation oncology clinic. Students can also complete rotations in medical oncology and surgical oncology during the core internal medicine and surgery blocks during the third year. Finally, students have the option of pursuing a range of clinical and research electives in oncological specialties during the fourth year.

The success of the SOS is reliant on its ability to create relationships between faculty and medical students. Early mentorship has been shown to have a significant impact on career selection, career success, research productivity, and student wellbeing across a variety of specialties [14, 3, 15]. Our findings show that students who had attended multiple SOS events perceived faculty mentors in oncology to be more accessible than students who had attended only a single SOS event. Typically, medical students have limited direct contact with oncologists until their clinical rotations, and the only

contact during the pre-clinical years are during large, lecture hall-style lectures on oncology. SOS events featuring oncologists and SOS-sponsored shadowing experiences allow students to personally connect with physician-mentors. At our institution, of the 58 alumni who have participated in the radiation oncology mentorship initiative, 17 (29.3 %) pursued residency in radiation oncology and many more expressed interest in other oncological specialties [6].

Our study is limited by the fact that students who attended the SOS event and completed surveys were likely students with a baseline interest in oncology and not a representative sample of the medical school class as a whole. Furthermore, because we surveyed a single event, it is difficult to draw direct conclusions regarding the efficacy of SOS events as a whole. We also did not assess other avenues that students use to identify mentors in oncology.

Although this short report provides a model for other medical schools to begin their own student oncology interest groups, further rigorous evaluation of pre-clinical oncology education initiatives are necessary in order to document their long-term impact on medical education. In the future, we hope to expand clinical opportunities for first- and second-year medical students with a focus on identifying faculty mentors for interested medical students.

Disclaimers None

References

- Barton MB, Bell P, Sabesan S, Koczwara B (2006) What should doctors know about cancer? Undergraduate medical education from a societal perspective. *Lancet Oncol* 7(7):596–601. doi:10.1016/S1470-2045(06)70760-4
- DeNunzio NJ, Joseph L, Handal R, Agarwal A, Ahuja D, Hirsch AE (2013) Devising the optimal preclinical oncology curriculum for undergraduate medical students in the United States. *J Cancer Educ* 28(2):228–236. doi:10.1007/s13187-012-0442-0
- Frei E, Stamm M, Buddeberg-Fischer B (2010) Mentoring programs for medical students—a review of the PubMed literature 2000–2008. *BMC Med Educ* 10:32. doi:10.1186/1472-6920-10-32
- Golden DW, Spektor A, Rudra S, Ranck MC, Krishnan MS, Jimenez RB, Viswanathan AN, Koshy M, Howard AR, Chmura SJ (2014) Radiation oncology medical student clerkship: implementation and evaluation of a bi-institutional pilot curriculum. *Int J Radiat Oncol Biol Phys* 88(1):45–50. doi:10.1016/j.ijrobp.2013.10.041
- Haagedoorn EM, De Vries J, Robinson E (2000) The UICC/WHO-CCCE Cancer Education project: a different approach. *J Cancer Educ* 15(4):204–208. doi:10.1080/08858190009528698
- Hirsch AE, Agarwal A, Rand AE, DeNunzio NJ, Patel KR, Truong MT, Russo GA, Kachnic LA (2014) Medical student mentorship in radiation oncology at a single academic institution: a 10-year analysis. *Pract Radiat Oncol*. doi:10.1016/j.prro.2014.08.005
- Hirsch AE, Handal R, Daniels J, Levin-Epstein R, Denunzio NJ, Dillon J, Shaffer K, Bishop PM (2012) Quantitatively and qualitatively augmenting medical student knowledge of oncology and radiation oncology: an update on the impact of the oncology education initiative. *J Am Coll Radiol* 9(2):115–120. doi:10.1016/j.jacr.2011.07.001
- Hirsch AE, Singh D, Ozonoff A, Slanetz PJ (2007) Educating medical students about radiation oncology: initial results of the oncology education initiative. *J Am Coll Radiol* 4(10):711–715. doi:10.1016/j.jacr.2007.06.011
- Jalalat SZ, Hunter-Ellul L, Wagner RF Jr (2013) Medical student dermatology interest groups. *Clin Dermatol* 31(5):656–660. doi:10.1016/j.clindermatol.2013.02.001
- Li R, Buxey K, Ashrafi A, Drummond KJ (2013) Assessment of the role of a student-led surgical interest group in surgical education. *J Surg Educ* 70(1):55–58. doi:10.1016/j.jsurg.2012.08.002
- McKee ND, McKague MA, Ramsden VR, Poole RE (2007) Cultivating interest in family medicine: family medicine interest group reaches undergraduate medical students. *Can Fam Physician* 53(4):661–665
- Oskvarek J, Braunstein S, Farnan J, Ferguson MK, Hahn O, Henderson T, Hong S, Levine S, Rosenberg CA, Golden DW (2015) Medical student knowledge of oncology and related disciplines: a targeted needs assessment. *J Cancer Educ*. doi:10.1007/s13187-015-0876-2
- Peota C (2014) Internal medicine incubator. An internal medicine interest group helps students explore career possibilities. *Minn Med* 97(6):8–9
- Stamm M, Buddeberg-Fischer B (2011) The impact of mentoring during postgraduate training on doctors' career success. *Med Educ* 45(5):488–496. doi:10.1111/j.1365-2923.2010.03857.x
- Thakur A, Fedorka P, Ko C, Buchmiller-Crair TL, Atkinson JB, Fonkalsrud EW (2001) Impact of mentor guidance in surgical career selection. *J Pediatr Surg* 36(12):1802–1804. doi:10.1053/jpsu.2001.28842
- Wisniewski WR, Fournier KF, Ling YK, Slack RS, Babiera G, Grubbs EG, Moore LJ, Fleming JB, You YN (2013) A focused curriculum in surgical oncology for the third-year medical students. *J Surg Res* 185(2):555–560. doi:10.1016/j.jss.2013.06.019