

ASCO-Sponsored Oncology Student Interest Groups in the World

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PURPOSE In 2015, ASCO established a program designed to support medical interest in cancer-related careers: Oncology Student Interest Groups (OSIGs). The purpose of this study was to describe the characteristics of current student leaders of ASCO-sponsored OSIGs and their perceptions of cancer-related careers.

METHODS We reviewed the list of all ASCO-sponsored OSIGs between 2015 and 2021. For this study, we focused on OSIGs that were sponsored during the 2019-2020 academic year. All student leaders of the 89 OSIGs active in that academic year were invited to participate.

RESULTS The number of groups has more than tripled in the 6 years since the program's inception. The number of international groups has increased to become almost one fifth of all OSIGs; however, the range of countries represented remains limited. The majority of OSIG leaders were female. Eighty two percent of OSIGs were returning members, with most of their leaders being registered ASCO student members. Almost all participants reported an interest in pursuing a cancer-related specialty. Only a minority (14.8%) reported having a family member working in a cancer-related career. However, 85% reported having experience with a cancer diagnosis in their family. The majority of the respondents had a favorable perception of medical oncology as a specialty. Participants reported the highest levels of interest in medical oncology and pediatric oncology.

CONCLUSION The number of ASCO-sponsored OSIGs has steadily increased since the creation of the program. Most participants reported an interest in pursuing a cancer-related career. To our knowledge, this study is the first to provide insights into the makeup of this program around the world. Additional efforts are needed to increase the global reach of the program, particularly in low-income countries.

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INTRODUCTION

The worldwide incidence of cancer continues to rise,¹ and thanks to improvements in early diagnosis and treatment approaches, patients with cancer are living longer.² Despite this, there are an insufficient number of oncologists worldwide.³ To avoid a future oncology shortage, there is a critical need for strategies and programs that encourage and support those entering medical practice to consider pursuing careers in oncology-related specialties.^{4,5}

The choice of a medical specialty is a complex and dynamic process influenced by many factors, including the trainee's perception of each specialty and cultural and personal factors. Nevertheless, only a small number of trainees choose cancer specialties.^{4,6} Studies have suggested that the primary experiences that influence a trainee's choice of specialty come from clinical rotations and research opportunities granted from summer rotations, regardless of medical school training.⁶ It has also

been shown that new oncologists are especially attracted to the holistic and multidisciplinary nature of the specialty and the depth and variety of human relationships developed during clinical practice.⁷

Trainee participation in interest groups has been shown to promote consideration for careers in oncology.^{6,8} ASCO began sponsoring Oncology Student Interest Groups (OSIGs) in 2015. ASCO supports OSIGs by providing funding, mentoring, and networking opportunities to their members. Furthermore, OSIG members can submit abstracts to a dedicated forum for medical students and residents that takes place during the ASCO annual meeting. OSIG registration takes place annually between June and August and is required each year for both new and returning groups.⁴ The groups usually operate with a multistudent leadership board made up of a leader and a variable number of officers.⁴ Although most ASCO-sponsored OSIGs are in the United States, the development and maintenance of OSIGs worldwide can support the development and

ASSOCIATED CONTENT

Author affiliations and support information (if applicable) appear at the end of this article.

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CONTEXT

Key Objective

What are the characteristics of current student leaders of ASCO-sponsored Oncology Student Interest Groups (OSIGs) and their perceptions of cancer-related careers?

Knowledge Generated

The number of groups has more than tripled in the 6 years since the program's inception. The number of international groups has increased to become almost one fifth of all OSIGs; however, the range of countries represented remains limited. The majority of the respondents had a favorable perception of medical oncology as a specialty, including the impression that it is an attractive specialty with a favorable work environment and enjoys scientific prestige and good compensation compared with other specialties.

Relevance

The number of ASCO-sponsored OSIGs has steadily increased since the creation of the program. Most participants reported interest in pursuing a cancer-related career. Additional efforts are needed to increase the global reach of the program, particularly in low-income countries.

growth of the international oncology workforce.⁹ In the United States, international medical graduates (IMGs) make up a significant component of the oncology workforce: 36.4% of active hematologist-oncologists are IMGs and 40.9% of hematology-oncology fellows are IMGs.^{8,10,11} As such, evaluation of the impact of these interventions on the international student community is of interest both globally and in the United States.

We previously evaluated student perceptions of members of Latin American ASCO-sponsored OSIGs. We found favorable impressions of these groups' impact on students and their opinion on oncology specialties.⁸ Since then, the ASCO OSIG initiative has expanded, with the addition of multiple other groups in the world. This study aimed to describe the makeup of the ASCO-sponsored OSIG of the world and the characteristics of their leaders.

METHODS

A list of all ASCO-sponsored OSIGs established between 2015 and 2021 was obtained from the ASCO Professional Development Committee. We identified active participating OSIGs during the 2019-2020 academic year and invited each one of their leaders to participate by completing a 40-item web-based questionnaire developed for this study. The study was promoted on social media and the OSIG newsletter sent to ASCO leaders.

Active participating OSIGs during the 2019-2020 academic year (July 2019-June 2020) were eligible. An invitation with a link to the survey was sent to each eligible ASCO-sponsored OSIG leader via the OSIG newsletter and e-mail invitations. The link included an informed consent form and a 40-item web-based questionnaire. The questionnaire was an adaptation of a previous questionnaire evaluating ASCO-sponsored OSIGs in Latin America.⁸ The questionnaire was developed using Google Forms and consisted of four sections: personal background, oncology

training, professional practice expectations, and information about their OSIG.

For qualitative variables, descriptive statistics were used, including frequencies and percentages. To analyze interest in cancer-related careers, we used a Likert scale ranging from 1 to 5 (1 = not at all interested and 5 = very interested).⁸ Because of the differences in training duration and curriculum between countries, we only asked specific questions about the perception of medical oncology as a medical specialty. We assessed the career interest level for specialties such as medical oncology, gynecologic oncology, pediatric oncology, surgical oncology, palliative care, and radiation oncology. Data were subjected to a paired *t*-test. All analyses were performed in STATA. All *P* values are two-sided at a significance level of .05. The Research Ethics Committee of Universidad Nacional Mayor de San Marcos approved the protocol (15-2020).

RESULTS

A total of 132 OSIGs were created between 2015 and 2021 worldwide, with 94 participating during the 2020-2021 period. Of all the ASCO-OSIGs since the beginning (*N* = 132), 71% are returning members.

Of the 94 OSIGs in the 2020-2021 period, 76 (81%) were located in the United States and 18 (19%) in the rest of the world. The average duration of current OSIGs in the program was 3.8 years. Six groups did not have ASCO sponsorship for a period and one for two periods. The location of all ASCO-sponsored OSIGs as of February 2021 is shown in [Figure 1](#). The US states with the highest number of OSIGs were Texas and Ohio with seven and six, respectively. Eighteen groups, all in medical schools in the United States, were founding OSIG members established in 2015 at the beginning of the OSIG initiative. Of these, 66.67% have National Cancer Institute–designated cancer centers affiliated with their medical schools.

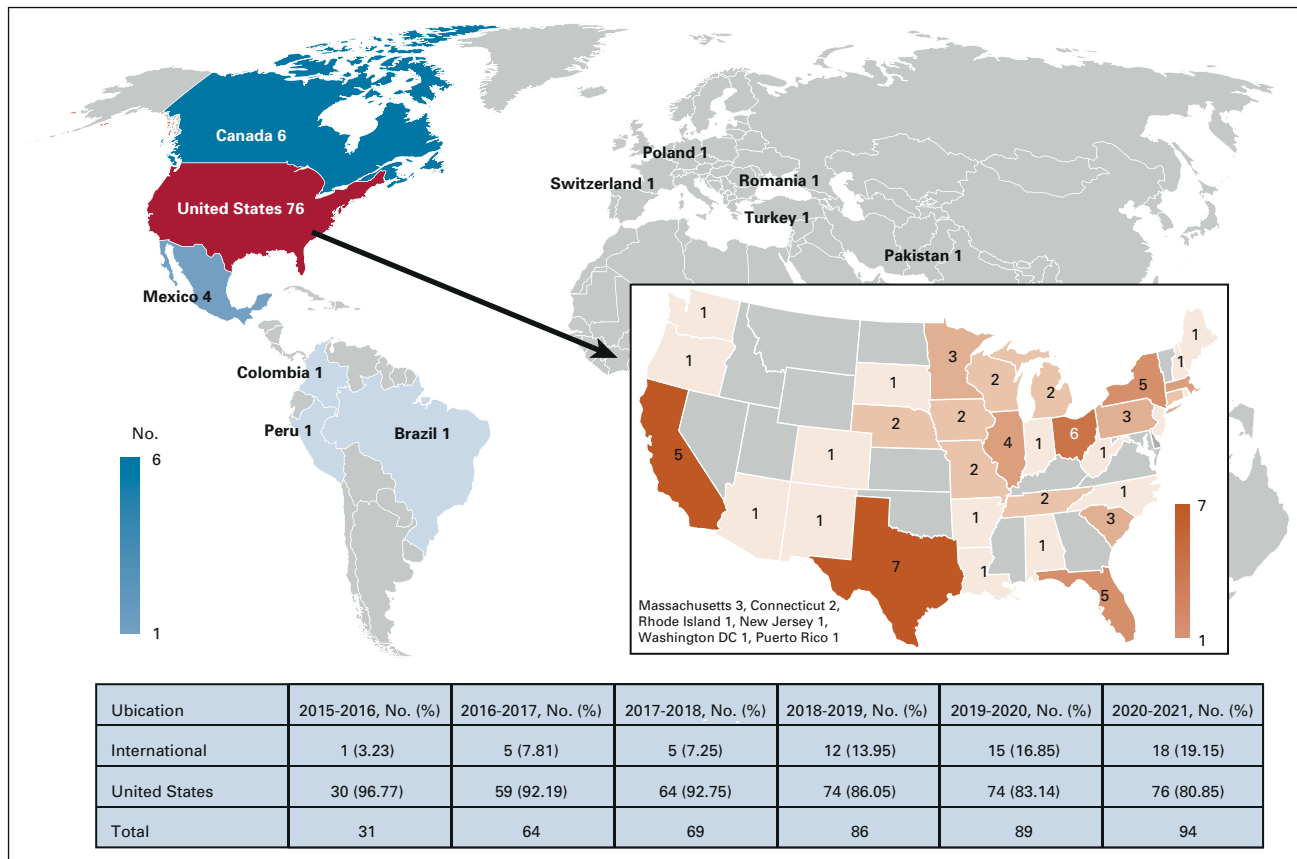


FIG 1. Oncology Student Interest Groups in the world (2015-2021).

The number of OSIGs has more than tripled in the 6 years since the program’s inception. In 2015, there was only one international OSIG located in Canada. Over the subsequent 6 years, international groups have steadily increased and currently represent almost one fifth of all OSIGs. Outside the United States, Canada and Mexico have the highest number of OSIGs, with six and four groups, respectively.

In the 2019-2020 academic year, the number of active OSIGs was 89; 74 in the US states or territories, four in Canada, four in Mexico, and one in Barbados, Brazil, Peru, Poland, Romania, Switzerland, and Turkey. We invited all 74 registered OSIG leaders to participate in the study and provided them with an electronic link to the survey. Additionally, the survey was advertised on Twitter and the OSIG newsletter. Responses to the survey were obtained between July and December 2020.

A total of 27 OSIG leaders responded (response rate 30.34%). All 27 surveys were included in the data analysis. Table 1 shows the characteristics of the groups as provided by their respective leaders. During the 2019-2020 period, the average number (standard deviation) of members was 52.33 ± 46.57 , with the largest OSIG being composed of 210 members (Bahcesehir University in Turkey) and an average of new members of 25.74 ± 41.03 . The OSIGs met

an average of 8.93 ± 9.00 times during the 2019-2020 period.

Characteristics of the surveyed OSIG leaders are described in Table 1. The majority of respondents were female (51.58%). Eighteen leaders (66.67%) were citizens of the United States, and nine were citizens of other countries, including one student leader of a group in the United States. The majority of leaders (70.37%) reported having been members of their OSIG for more than 12 months ($n = 19$), and 81.48% belonged to returning OSIGs. Almost all (85.19%) were registered ASCO student members. All the leaders (international and United States) had experienced direct contact with patients as part of their coursework. The majority of leaders of international groups reported being fluent in English (33.33% native English level and 55.56% advanced English level).

Almost all participants reported interest in pursuing a cancer-related career (62.96% very interested and 33.33% somewhat interested) at the time of the survey, and 85.19% ($n = 17$) of the students reported having a family member with a cancer diagnosis, whereas only a minority (4, 14.81%) reported having a family member who worked in an oncology-related field. Perceptions of the OSIG leaders regarding oncology specialties are shown in Table 2. Generally speaking, the majority had favorable impressions

TABLE 1. Characteristics of the OSIG Leaders

Characteristic	United States, No. (%)	International, No. (%)	Total, No. (%)
No.	19 (70.37)	8 (29.63)	27 (100)
Age, years	26 ± 1.63	24 ± 4.84	25.41 ± 3.00
Female	9 (33.33)	5 (18.52)	14 (51.58)
First period of the OSIG with ASCO sponsorship	3 (11.11)	2 (7.41)	5 (18.52)
Have attended a medical meeting	7 (25.93)	5 (18.52)	12 (44.44)
ASCO student membership	15 (55.56)	8 (29.63)	23 (85.19)
Published scientific articles	12 (44.44)	5 (18.52)	17 (62.96)
Have attended ASCO conference	7 (25.93)	6 (22.22)	13 (48.15)
Have taken courses with patient contact	19 (70.37)	8 (29.63)	27 (100)
Have a family member who works in an oncology-related field	4 (14.81)	0 (0)	4 (14.81)
Have had a family member diagnosed with cancer	17 (62.96)	6 (22.22)	23 (85.19)
Medical school in the United States	19 (70.37)	0 (0)	19 (70.37)
Member since			
< 6 months	3 (11.11)	0 (0.00)	3 (11.11)
6-12 months	3 (11.11)	2 (7.41)	5 (18.52)
> 12 months	13 (48.15)	6 (22.22)	19 (70.37)
Interest in pursuing a cancer-related career			
Not at all interested	0 (0)	0 (0)	0 (0)
Not very interested	0 (0)	0 (0)	0 (0)
Neutral	1 (3.70)	0 (0)	1 (3.70)
Somewhat interested	7 (25.93)	2 (7.41)	9 (33.33)
Very interested	11 (40.74)	6 (22.22)	17 (62.96)

Abbreviation: OSIG, Oncology Student Interest Group.

of medical oncology as a specialty. Most reported agreeing or strongly agreeing with medical oncology as an attractive specialty that provides a favorable work environment and enjoys scientific prestige and a good compensation compared with other specialties.

Regarding oncology education in their medical school, the majority agreed or strongly agreed to the statements “the training I receive in oncology seems adequate to me” and rated the overall quality of oncologic education provided at their medical school at 6.74 ± 2.43 (on a 10-point scale).

About their respective OSIG, the majority agreed or strongly agreed that these organizations had sufficient resources to carry out all their activities, were accessible to all medical students at their institution, contributed to increased interest in oncology, and promoted professional connections. The majority reported being interested or very interested in pursuing medical oncology (66.67%) and pediatric oncology (51.58%), followed by surgical oncology, radiation oncology, and palliative medicine (40.74%, 40.74%, and 37.03%, respectively), and gynecologic oncology (11.11%; Table 3).

DISCUSSION

With the continuous advances in global cancer care and the improvements in cancer survivorship, more cancer specialists are increasingly needed to enter the workforce

worldwide. ASCO-sponsored OSIGs and other similar efforts seek to attract trainees to the field, nurture their interest, and increase the number of applicants to a career in cancer care.^{3,4,12,13} Since ASCO began sponsoring OSIGs in 2015, the number of OSIGs has grown consistently,⁹ demonstrating trainee interest in such initiatives. As of 2021, most of the OSIGs were in the United States; however, the number of international groups has steadily increased.

Although the global uptake of the ASCO-sponsored OSIGs has grown since the program’s inception, the number of participating countries beyond the US territories remains limited. Uptake has been highest in the Americas (five countries: Canada, Mexico, Colombia, Peru, and Brazil), with only a few OSIGs in Europe and Asia and no representation in Africa. There are currently no groups in the top five countries attending the ASCO annual meeting (United Kingdom, Japan, Germany, Spain, and France).¹⁴ The limited uptake in Europe and Asia may partly relate to closer relationship of trainee groups with oncology societies such as the European Society of Medical Oncology and the European Society of Oncology, both of which have medical student initiatives, and other efforts such as the British Oncology Network for Undergraduate Societies, which consists of a network of students and junior physicians

TABLE 2. Perception by OSIG Leaders of Oncology as a Specialty and Impact of OSIGs

Component	Item	SD, No. (%)				
		D, No. (%)	N, No. (%)	A, No. (%)	SA, No. (%)	
Medical oncology as a specialty in the country where you study	Is an attractive specialty	0	0	2 (7.41)	12 (44.44)	13 (48.15)
	Is well-compensated compared with other medical specialties	0	2 (7.41)	5 (18.52)	14 (51.85)	6 (22.22)
	Has a good work environment	0	0	4 (14.81)	12 (44.44)	11 (40.74)
	Is well-regarded by other medical specialists	0	0	1 (3.70)	13 (48.15)	13 (48.15)
	Enjoys scientific prestige	0	0	1 (3.70)	10 (37.04)	16 (59.26)
	Has an essential role in society	0	0	4 (14.81)	3 (11.11)	20 (74.07)
Oncology education in your medical school	Oncology training was a required part of my curriculum	0	6 (22.22)	8 (29.63)	6 (22.22)	7 (25.93)
	The training I receive in oncology seems appropriate to me	1 (3.70)	3 (11.11)	9 (33.33)	7 (25.93)	7 (25.93)
OSIG of your medical school	Has sufficient resources to carry out all its activities	1 (3.70)	1 (3.70)	4 (14.81)	13 (48.15)	8 (29.63)
	Is accessible to all students at my institution	0	0	0	4 (14.81)	23 (85.19)
	Increases the interest in oncology in medical students	0	0	3 (11.11)	11 (40.74)	13 (48.15)
	Promotes professional connections	0	0	3 (11.11)	7 (25.93)	17 (62.96)

Abbreviations: A, agree; D, disagree; N, neutral; OSIG, Oncology Student Interest Group; SA, strongly agree; SD, strongly disagree.

promoting careers in oncology.¹⁵ It is likely that many of the trainee needs are largely satisfied by these efforts. However, the existence of student groups organized and supported by different oncology societies with common goals, but with different insights into regional student needs, offers opportunities for global student exchange, networking, and collaboration in an increasingly connected world. Such opportunities also offer the potential to expose students to aspects of global cancer care early in their careers.

It is also important to note that there has been minimal uptake in low-income countries in South America and Africa.¹⁶ The regional influence of ASCO in the Americas, coupled with the limited student support groups in other countries in the continent, represents a major opportunity to attract medical students from Central and South America to apply and benefit from ASCO sponsorship. Although we have not directly explored this, we postulate that language differences may pose a barrier that defuses student interest in applying to seek ASCO sponsorship, considering that the

application needs to be completed in English. Creation of informational and application materials in Spanish and other major languages may remove that barrier and increase interest. Alternatively, offering non-English-speaking students with support during the application process through ASCO mentors and volunteers who speak the student's native languages may facilitate this process. Blogs, articles, and information sessions about OSIGs in ASCO channels have increased awareness and promoted the program.^{9,17,18} Advertising the program through the ASCO international newsletter, social media, and organizations with global reach such as OncoAlert, eCancer, or the Hem-Onc Fellows network¹⁹ offers the potential to reach more international trainee audiences.

The majority of the participating OSIG leaders reported interest in pursuing a future career in oncology. The process of choosing a specialty is complex and influenced by many factors including sex, potential salary, personal experiences, perceived lifestyle, and work-life balance,

TABLE 3. The Interest of OSIG Leaders in Careers in Oncology Specialties

Item	NAI, No. (%)	NVI, No. (%)	N, No. (%)	SI, No. (%)	VI, No. (%)
Medical oncology	2 (7.41)	2 (7.41)	5 (18.52)	8 (29.63)	10 (37.04)
Radiation oncology	6 (22.22)	2 (7.41)	8 (29.63)	6 (22.22)	5 (18.52)
Surgical oncology	9 (33.33)	2 (7.41)	5 (18.52)	7 (25.93)	4 (14.81)
Gynecologic oncology	8 (29.63)	7 (25.93)	9 (33.33)	3 (11.11)	0 (0.00)
Pediatric oncology	5 (18.52)	1 (3.70)	7 (25.93)	9 (33.33)	5 (18.52)
Palliative medicine	7 (25.93)	5 (18.52)	5 (18.52)	9 (33.33)	1 (3.70)

Abbreviations: N, neutral; NAI, not at all interested; NVI, not very interested; SI, somewhat interested; VI, very interested.

among others.^{13,20} The impact of oncology groups on medical students has previously been described.^{8,21} Members who regularly attended these interest group meetings were more attracted to oncology and oncology research than when they entered medical school. Different degrees of exposure and understanding to what each discipline entails may contribute to student interest. In Latin America, ASCO-sponsored OSIG members stated that having an OSIG in their medical school increased their interest in pursuing cancer-related specialties and facilitated networking.⁸

Oncology education was a required part of the curriculum for most of the leaders. The leaders perceived having received an appropriate level of exposure to medical oncology during medical school. A 2019 survey among third- to fourth-year medical students in the United States reported that less than half of the students had oncology-oriented clinical rotations in their required clerkships. A previous study found that oncology education is often underemphasized and fragmented, with wide variability in content and structure between American medical schools.¹² However, the students who participated in oncology rotations reported having gained greater confidence in their knowledge of the basic science and diagnosis of cancer and awareness of cancer management complications.^{22,23}

Our study has several limitations that need to be considered. First, we only surveyed the OSIG leaders and not their entire student body, which may not capture the totality of perceptions from each OSIG member. Second, although we promoted our study, the survey response rate was low, resulting in a relatively small sample size, which again may result in the findings not being an adequate representation

of student's perception of oncology-related specialties. Third, our survey queried students about the 2019-2020 academic period, a year during which the COVID-19 pandemic disrupted education (including medical education) in many different ways. This might have been even more pronounced in exposure to clinical rotations in oncology, considering concerns about patients with cancer being a vulnerable and immunosuppressed population, leading to many cancer clinics limiting access to their facilities to only essential personnel. Since the surveys started before the COVID-19 pandemic, we did not specifically ask about how COVID-19 had affected their OSIGs worldwide. Additional studies with longitudinal follow-up of medical students may allow further understanding of the impact of OSIGs and similar initiatives on residency and fellowship choice in different parts of the world.

In conclusion, the steady increase in the number of ASCO-sponsored OSIGs since the creation of the program demonstrates interest in the medical student community in these types of initiatives. However, the global presence of the program remains limited, highlighting potential opportunities for ASCO to expand its reach and efforts, particularly in low-income countries where trainees have the highest need for mentoring and organized support. Our study provides critical insights into the perceptions of ASCO-sponsored OSIG leaders on cancer-related specialties. It reveals opportunities to enhance medical student interest in pursuing cancer-related specialties. Students seek out opportunities to learn more about cancer-related specialties to network with potential mentors and like-minded students. This type of group should be encouraged, especially in countries with high cancer prevalence and mortality.

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DISCLAIMER

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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Administrative support: All authors

Collection and assembly of data: All authors

Data analysis and interpretation: All authors

Manuscript writing: All authors

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Accountable for all aspects of the work: All authors

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

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