

Activities Performed by ASCO-Sponsored Oncology Student Interest Groups in Latin America: Assessing Members' Preferences and Leaders' Challenges

Emilia Núñez-Peña¹; Paloma Siller-García¹; Bryan F. Vaca-Cartagena, MD²; Jose Lucio-Lozada³; Silvia Villafuerte-Manrique⁴; Mirelle Barrera López⁵; Fernanda Mesa-Chavez, MD, MSc²; and Cynthia Villarreal-Garza, MD, DSc²

PURPOSE In response to the worldwide shortage of oncologists, ASCO established Oncology Student Interest Groups (OSIGs) to increase oncology exposure at medical schools. However, there is limited guidance on the activities they should undergo. The main purposes of this study were (1) to assess the preferences and perceptions of OSIG members about their group events and (2) to describe the difficulties faced by leaders to carry out OSIGs' tasks.

METHODS In this multicenter, cross-sectional study, group members and leaders from five active Latin American OSIGs were invited to answer anonymous web-based surveys exploring members' attitudes toward group activities and leaders' challenges when carrying them out. Data collection was conducted from March to June 2021.

RESULTS Responses from 142 medical students and four OSIGs leaders were analyzed. In total, 83% of student members considered that lectures with an oncology-related expert was very useful for increasing their overall interest in oncology. For increasing interest in cancer research, 87% deemed that participating in oncology research projects was very useful. Shadowing oncology professionals was very useful for at least 70% of members to increase their oncology knowledge and their interest in following an oncology-related career. Moreover, leaders' main challenges were having a high academic load, little response from members, lack of interesting ideas and protected time for OSIGs' events, and limited support from their school.

CONCLUSION OSIGs' leaders, medical schools, and international oncology organizations should work together to design activities that increase medical students' exposure to oncology-related professionals and encourage their participation in international oncological events. These schools and organizations should actively support OSIG leaders when facing difficulties to prevent members' disengagement and groups' discontinuation.

JCO Global Oncol 8:e2200050. © 2022 by American Society of Clinical Oncology

Creative Commons Attribution Non-Commercial No Derivatives 4.0 License 

INTRODUCTION

Cancer is one of the leading causes of death worldwide. The rapid increase in its incidence and mortality around the globe is a reason for alarm.¹ New cancer cases in Latin America and the Caribbean are expected to increase from 1.47 million cases in 2020 to 1.68 million cases in 2025.² Studies have shown that increasing demand for oncologic services was expected to surpass the limited supply of physicians by 2020.³⁻⁵ The optimal international standard caseload per medical oncologist is 150-175 per year.⁶ Although in the United States this caseload is met, alarmingly, Latin American, Asian, and African middle-income countries have a mean of 0.49, 0.79, and 0.36 medical doctors involved in the care of patients with cancer per 150 new cancer cases, respectively.⁷

Growing evidence shows that oncology interest groups are a promising and feasible strategy to cultivate an

early interest in oncology and increase knowledge in cancer-related specialties.¹⁻³ In response to the global shortage of oncologists, in 2015, ASCO established a program to sponsor Oncology Student Interest Groups (OSIGs) which are formed by medical students and/or residents, designed to increase oncology exposure at medical schools and shape the future oncology workforce.⁴⁻⁶ These student-led groups organize activities that focus on educating the student community on cancer-related topics and promoting the pursuit of oncology-related specialties.⁴ OSIG members have a variety of benefits, including access to free ASCO membership, career development resources, mentoring and networking opportunities, and funding to support group's activities.⁴⁻⁶ According to the ASCO 2020-2021 OSIG Roster, there were 94 OSIGs worldwide, 76 in the United States and 18 distributed in Brazil, Canada, Colombia, Mexico, Pakistan, Peru, Poland, Romania, Switzerland, and Turkey.⁶

ASSOCIATED CONTENT

Data Supplement

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

Accepted on September 6, 2022 and published at ascopubs.org/journal/go on October 20, 2022: DOI <https://doi.org/10.1200/GO.22.00050>

CONTEXT

Key Objective

Oncology Student Interest Groups play an important role in overcoming the worldwide shortage of oncologists. However, there is limited guidance on the activities that these groups should carry out to feasibly increase medical students' interest in oncology. This study aims to provide guidance on this topic.

Knowledge Generated

The results provided by the present study highlight the importance of having lectures with experts in cancer-related specialties, participating in clinical oncology workshops and cancer research groups, attendance to international ASCO events, and shadowing oncology professionals to increase medical students' interest in oncology.

Relevance

The display and analysis of this information will offer guidance to Oncology Student Interest Groups around the world regarding their student groups' schedule and activity design.

Recent studies that included OSIG members around the globe found that the majority of members were interested in pursuing an oncology-related specialty and thought that participating in an OSIG further increased this interest and promoted valuable networking opportunities.⁷ In Latin American middle-income countries, 94% of OSIG members agreed/strongly agreed that their participation in their school's OSIG had increased their interest in a medical specialty related to cancer treatment.⁸ In this way, OSIGs have a potential role in contributing to overcome the worldwide oncologist shortage.

However, there is limited guidance on activities and events that OSIGs should carry out during the academic year, as OSIG student leaders with aid of a faculty advisor are the ones in charge of developing the student group schedule.⁵ Thus, it is of paramount importance to provide guidance to OSIGs leaders when designing their student group activities. This study aims (1) to assess the preferences and perceptions of OSIG members about the activities and events organized by Latin American OSIGs to increase the interest of students in pursuing oncology-related research and/or medical specialties and (2) to describe the difficulties faced by OSIG student leaders to carry out OSIGs' tasks.

METHODS

During the 2021 academic year, medical student members of five of six (83%) active ASCO-sponsored OSIGs in Latin America including Instituto Tecnológico y de Estudios Superiores de Monterrey Campus Monterrey (ITESM)—Mexico, Universidad Anahuac—Mexico, School of Medicine of National Autonomous University of Mexico—Mexico, Universidad del Rosario—Colombia, and Universidad Nacional Mayor de San Marcos (UNMSM)—Peru, were invited via e-mail to complete an anonymous web-based survey comprising 26 questions aimed at exploring sociodemographic characteristics, attitudes, and factors associated with pursuing an oncology-related specialty and the self-perception about the activities carried out by their group. These questions explored how each

activity affected on members' interest in oncology, oncology knowledge, research in cancer, and pursuing an oncology-related career. The sixth group, School of Medicine of Ribeirao Preto—University of Sao Paulo, was not invited to participate because of language restriction as the questionnaire was designed in Spanish.

Additionally, OSIG student-leaders were asked to complete another web-based survey, referred to as Leaders Survey, which contained 22 questions that explored the structural characteristics, activities, and events carried out by their group, as well as the difficulties faced when designing and implementing these activities. Both surveys did not collect any type of identifying information (Data Supplement).

For designing the questionnaires, a multidisciplinary panel including a medical oncologist, a research fellow, and medical students from a single center established the goals of the study and used previous studies that have described the characteristics of OSIGs as a model.^{3,8} Surveys were translated to Spanish and adapted by selecting, removing, and adding questions according to the specific interests of this study. Both surveys included specific questions to assess the impact that the COVID-19 pandemic has had on groups' activities. Eligible responses for the analysis were those of medical students who completed the surveys.

All data were collected and managed using Google Forms, and the statistical analysis was carried out using IBM SPSS Statistics for Macintosh, version 25 (IBM Corp, Armonk, NY). Descriptive statistics were undertaken, including frequencies and percentages for categorical variables and means for quantitative variables. Associations between variables were examined using the chi-squared test. Significance was defined as a two-tailed, $P < .05$. The Research Ethics Committee of the School of Medicine of the Instituto Tecnológico y de Estudios Superiores de Monterrey approved the study protocol (P000533-OSIG-CEIC-CR001). Informed consent was waived because the research was deemed of no risk, and no identifiable data were collected.

RESULTS

One hundred forty-two medical students from four OSIGs responded to the first survey, from 285 registered members of the five OSIGs that were invited to participate (response rate: 50%). Despite several attempts to contact the OSIG group of Universidad del Rosario—Colombia regarding their participation in this study, no answer was obtained from its group leaders. The university with the highest response rate was School of Medicine of National Autonomous University of Mexico having 30 of 49 members (61%) completing the survey, followed by UNMSM (25 of 45 [56%]), ITESM (58 of 119 [49%]), and Universidad Anahuac (29 of 72 [40%]). The median age of OSIG members was 21 years (interquartile range, 20-22), most were women (92 [65%]), and the majority were in the first 4 years of medical school (134 [94%]). Most OSIG members (87 [61%]) said their school offered activities/courses focused on oncology as part of their curricula, but only (49 [35%]) considered their school's training on basic oncology to be good or excellent. Sociodemographic characteristics and answers to these questions according to each university are shown in Table 1.

Factors Influencing Interest in Oncology

OSIGs and their activities, being mentored by medical doctors specialists in oncology, and participating in courses

focused on oncology were the three main factors that members associated with a moderate-to-high influence on medical students' interest in oncology (Fig 1). Moreover, when asked about the motivators for pursuing an oncology-related medical specialty, respondents answered: (1) it is interesting for doing research (93 [66%]), (2) it has an essential role in society (82 [64%]), (3) it is an attractive specialty (82 [58%]), (4) has scientific prestige (46 [32%]), and (5) it has an elevated social status (8 [6%]; Fig 2).

OSIG Members' Participation

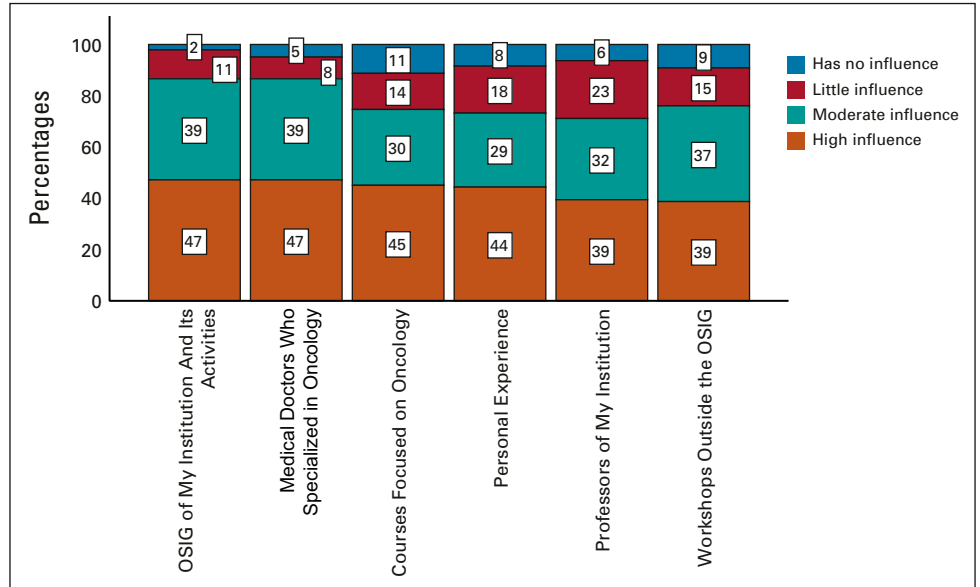
Medical students stated they had attended an OSIG-related event in the past (111 [78%]), and women were more likely to have attended than men (84% v 68%; *P* = .031). When asked about their participation in OSIG activities/events per semester (29 [20%]) and (32 [23%]) students answered that they assisted to an average of one or two, respectively. The main activities that they attended were lectures with an expert in a cancer-related specialty (111 [78%]), clinical oncology workshops (52 [37%]), oncology research group meetings (39 [28%]), and journal club meetings (36 [25%]; Table 2). The principal factors that motivated them to attend these events were their interest in the topic (126 [89%]), that the activities fit their schedule (91 [64%]), and their perception that the event's topic is useful for their future professional career (85 [60%]).

TABLE 1. Sociodemographic Characteristics of Group Members According to Their University

Variable	Total N = 142 (100%)	ITESM n = 58 (100%)	UA n = 29 (100%)	UNAM n = 30 (100%)	UNMSM n = 25 (100%)
Sex, No. (%)					
Male	50 (35)	13 (22)	14 (48)	8 (27)	15 (60)
Female	92 (65)	45 (78)	15 (52)	22 (73)	10 (40)
Age, years, No. (%)					
≤ 21	92 (65)	50 (86)	14 (48)	15 (50)	13 (52)
> 21	50 (35)	8 (16)	15 (52)	15 (50)	12 (48)
Year of medical school, No. (%)					
≤ 4	134 (94)	56 (97)	29 (100)	29 (97)	20 (80)
> 4	8 (6)	2 (3)	0 (0)	1 (3)	5 (20)
Does your school offer activities/courses focused on oncology as part of their curricula? No. (%)					
Yes	87 (61)	42 (72)	27 (93)	9 (30)	9 (36)
No	55 (39)	16 (28)	2 (7)	21 (70)	16 (64)
How do you consider your school's training on basic oncology? No. (%)					
No training	25 (18)	8 (14)	2 (7)	7 (23)	8 (32)
Deficient	26 (18)	7 (12)	0 (0)	11 (37)	8 (32)
Regular	42 (30)	21 (36)	6 (21)	8 (27)	7 (28)
Good	34 (24)	21 (36)	7 (24)	4 (13)	2 (8)
Excellent	15 (11)	1 (2)	14 (48)	0 (0)	0 (0)

Abbreviations: ITESM, Instituto Tecnológico y de Estudios Superiores de Monterrey Campus Monterrey; UA, Universidad Anahuac; UNAM, School of Medicine of National Autonomous University of Mexico; UNMSM, Universidad Nacional Mayor de San Marcos.

FIG 1. Factors associated with medical students' interest in oncology. OSIG, Oncology Student Interest Group.



Regarding activities' duration, a high proportion of students thought that optimal length of an OSIG activity is 1 hour (66 [47%]) or 1 hour and a half (39 [28%]). As for type of assistance, the majority preferred a hybrid model (72 [51%]) over just in-person (41 [29%]) or virtual (24 [17%]) activities. A significant proportion of OSIG members (47 [33%]) were not members before the COVID-19 pandemic but (39 [28%]) mentioned that their participation in the OSIG activities had decreased while in 29 (20%) it had increased during the pandemic.

In addition, no statistically significant differences between the differing reasons for nonparticipation among male and

female medical students were found. Regarding activities' schedule, it had a higher impact on the attendance of female members (64 [70%]) than among male members (27 [54%]; $P = .065$).

Attitudes Toward Activities

OSIG members' perceptions about the usefulness of the group's tasks are detailed in Figure 3. Eighty-three percent of student members considered that having lectures with an oncology-related expert was very useful for increasing their overall interest in oncology. For increasing interest in cancer research, 87% deemed the activity of participating

FIG 2. Reasons for following an oncology-related medical specialty.

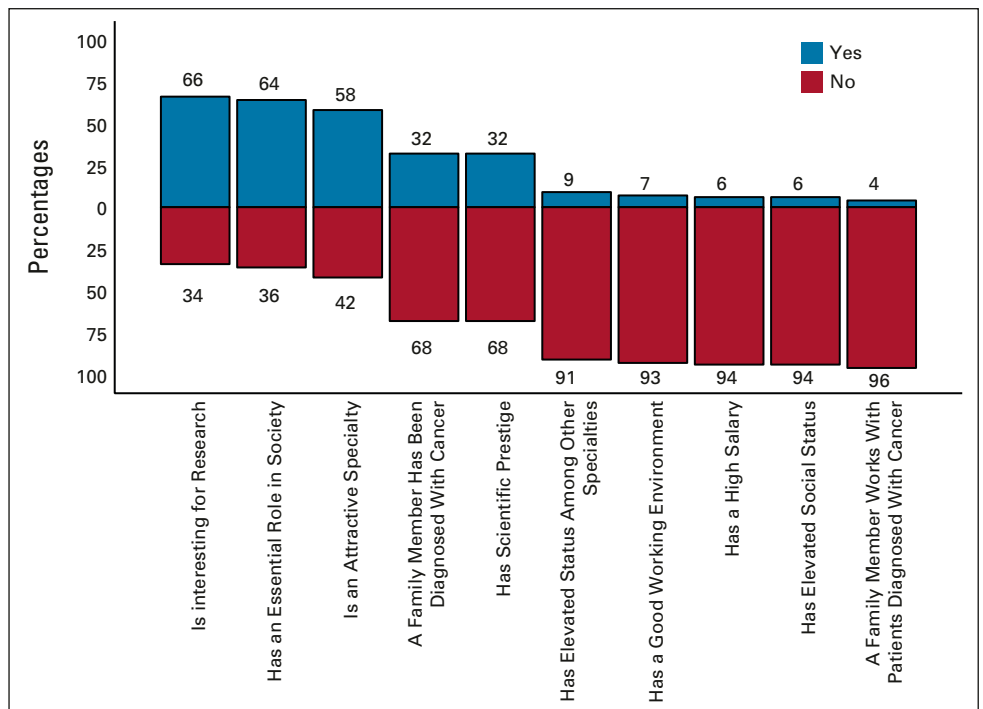


TABLE 2. Activities From the OSIG That Group Members Attend the Most

Activities	Yes No. (%)	No No. (%)
Having lectures with an expert in a cancer-related specialty	111 (78)	31 (22)
Participating in clinical oncology workshops	52 (37)	90 (63)
Participating in cancer research groups	39 (28)	103 (72)
Participating in a journal club	36 (25)	106 (75)
Having contests focused on oncology (eg, poster/video contests)	20 (14)	122 (86)
Having networking sessions with oncology faculty members	20 (14)	122 (86)
Participation in international ASCO events (eg, annual meeting, poster presentations)	18 (13)	124 (87)
Shadowing oncology professionals	12 (9)	130 (91)
Having basic oncology contests (eg, Kahoot, jeopardsies)	10 (7)	132 (93)
Having recreational activities (eg, doing exercise, social gatherings)	6 (4)	136 (96)
Having social outreach activities (eg, cancer awareness in public health fairs)	6 (4)	136 (96)
Having activities with OSIG from other institutions (eg, symposiums, contests)	5 (4)	137 (97)
Doing fundraising campaigns for donations	2 (1)	140 (99)

Abbreviation: OSIG, Oncology Student Interest Group.

in oncology research projects as very useful. Shadowing oncology professionals was very useful by at least 70% of members for increasing their oncology knowledge and their interest in following an oncology-related career.

The main topics suggested for OSIG activities/events and members' perceptions about them are detailed in Figure 4. Most (124 [87%]) medical students said that topics focused on clinical knowledge application (eg, tumor boards, management of cancer emergencies, and bad news workshop) were very useful to increase their oncology knowledge. The majority (120 [85%]) thought that topics focused on the biology of cancer (eg, physiopathology of cancer, genetics, and cancer cellular biology) were very useful to increase their interest in oncology research. Also, (122 [86%]) students thought that analyzing scientific literature about cancer was very useful to expand their interest in oncology research. Likewise, (106 [75%]) OSIG members thought that discussing a day in the life of an oncologist increased their interest in doing oncology research and pursuing an oncology-related career.

Difficulties Faced by OSIG Leaders

The characteristics of OSIGs leader group and their chapters are shown in Table 3. Most leaders were women in all four universities; in ITESM and UNMSM, they comprise more than 75% of the total leader group members. The main challenges faced by leaders in carrying out projects are detailed in Figure 5. Having excessive schoolwork was the main difficulty faced by all leaders. Additionally, the majority (75%) stated that there was a lack of participation from student members while 50% of leaders faced problems related to lack of support from their school, limited dates for scheduling activities, and few ideas for interesting activities. On the other hand, having difficulties contacting speakers

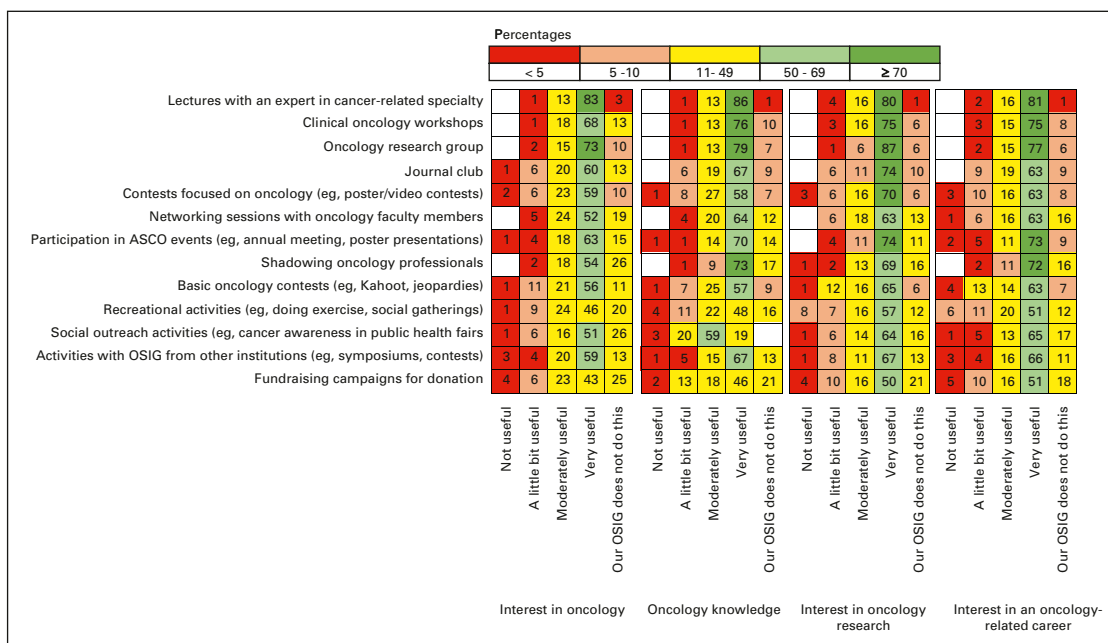
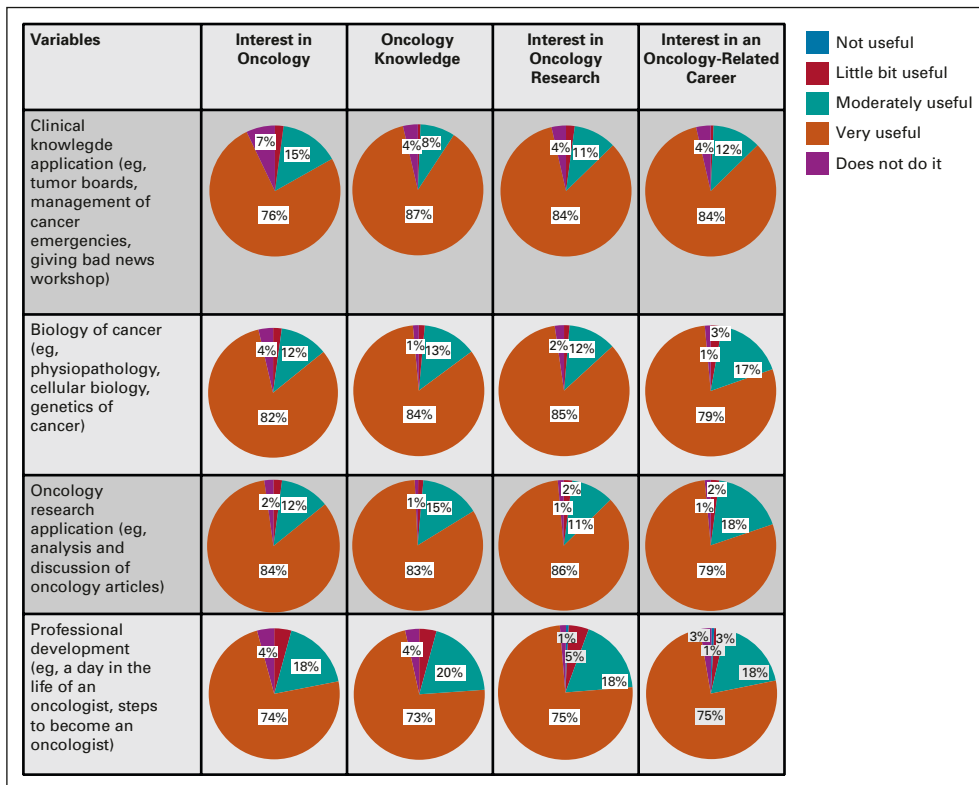


FIG 3. Heatmap showing OSIG members' perception about the usefulness of activities for different areas related to oncology. Colors and numbers represent the percentages of members that rate as not useful, a little bit useful, moderately useful, very useful, or our OSIG does not do this, regarding each specific activity conducted by OSIGs. White boxes denote inapplicable sections. OSIG, Oncology Student Interest Group.

FIG 4. Oncology Student Interest Group members perception about the usefulness of specific topics for doing activities or events.



and publicizing activities, lacking motivation, and having organizational problems among the leaders were particular issues to some institutions. Of note, no leader stated that having few members on the leader group or in the OSIG or deficit of economic and technological resources were difficulties for carrying out their events.

Regarding difficulties faced during the COVID-19 pandemic (Fig 6), all leaders reported problems due to limited places for carrying out activities, lack of appropriate schedule for planning tasks, and higher academic load. Also, at least 75% of leaders faced difficulties in the promotion of events, designing attractive activities, adapting to a virtual modality, and having lower attendance at events.

DISCUSSION

This article provides evidence regarding medical students’ perceptions about oncology exposure in their universities, OSIG activities, and the challenges faced by student leaders to organize them. Most OSIG members and leaders were women. This reflects the increasing involvement of women in the oncological field, which is encouraging and should be promoted, especially for leadership roles. However, other studies have shown that just a minority of female oncologists have leadership roles, even when they represent the majority of clinical teams’ workforce.^{9,10}

Although most medical students stated that their school offered activities and courses focused on oncology as part of their curricula, only an alarming minority (35%) considered them good or excellent. Of note, these results could not

adequately reflect the perception of most medical students regarding oncology training as most universities in Latin America give oncology courses in the latest years of the medical career, and the majority of OSIGs members were coursing the first years of medical school.¹¹⁻¹³ However, the poor satisfaction of trainees in the oncology field has been previously documented in the United Kingdom, where medical students received only one to two weeks of oncological training throughout their medical degree.¹⁴ This is of great concern, as an important number of patients with cancer are managed by primary care physicians in nonspecialized centers.¹⁴ Therefore, medical schools should tackle this problem by reforming their curricula ensuring more clinical exposure to oncology since early training, focusing on the appropriate referral for early diagnosis of common oncological diseases and emergencies, as well as promoting OSIGs formation and supporting their activities.¹⁴

Findings from this study add to the current evidence that the principal motivators for following an oncology-related specialty are the perception of the important role that oncology plays in society, being an attractive specialty, and being interesting for doing research.^{8,15} It is important to highlight that only a minority indicated that oncology had scientific prestige, a good working environment, a high salary, or elevated social status, as determinants for following an oncology-related specialty. A feasible way to change the former perceptions could be to increase the exposure of OSIG members to the oncology field by promoting their attendance to international oncology meetings such as ASCO

TABLE 3. Characteristics of OSIGs Leader Group and Their Chapters According to the University They Belong to

Variable	ITESM	UA	UNAM	UNMSM
Year of OSIG foundation	2019	2020	2020	2017
Leader's sex, No. (%)				
Male	3 (23)	2 (33)	6 (46)	1 (25)
Female	10 (77)	4 (67)	7 (54)	3 (75)
Total	13 (100)	6 (100)	13 (100)	4 (100)
Types of positions				
President and Vice-president	Yes	Yes	Yes	Yes
Project planning and strategy	Yes	No	No	No
Social responsibility and student wellness	Yes	Yes	No	No
Social media and publicity	Yes	Yes	Yes	No
Finance and sponsorship	Yes	No	No	No
Treasurer	No	Yes	Yes	Yes
Secretary	Yes	Yes	Yes	Yes
No. of members	119	72	49	45
No. of events per semester	10	5	5	15
Duration of events, minutes	90	90	60	120

Abbreviations: ITESM, Instituto Tecnológico y de Estudios Superiores de Monterrey Campus Monterrey; OSIG, Oncology Student Interest Group; UA, Universidad Anahuac; UNAM, School of Medicine of National Autonomous University of Mexico; UNMSM, Universidad Nacional Mayor de San Marcos.

annual meeting, European Society for Medical Oncology Congress, and the OncoAlert Colloquium. These meetings provide sessions focused on patient care, case-based panel sessions, education sessions, interaction with patients, patient advocates and physicians, and the presentation of groundbreaking results of novel therapeutics that affects patients' survival and quality of life. Thus, they give a better overview of oncology and its practice to undergraduate students. Furthermore, attendance to these meetings should be free for medical students to increase engagement.

This study shows the positive perceptions that undergraduates have about OSIGs, medical doctors who specialized in oncology, and cancer courses to increase interest in oncology, which has been previously documented in other investigations.^{8,14,15} Medical oncologists and oncologist-related professionals should be reminded of the crucial role they play when mentoring students, as they could strongly motivate them to follow an oncology-related specialty.¹⁵ As shown by these results, shadowing oncology-related professionals increases the perception of oncology knowledge acquisition, interest toward research in oncology, and the motivation in pursuing an oncology-related career. Of note, at least 15% of medical students were unaware that their OSIG offered the opportunity of shadowing an oncology tutor. Therefore, medical schools and international oncologic associations should work together to increase the availability of mentors willing to teach and support medical students during their professional development.

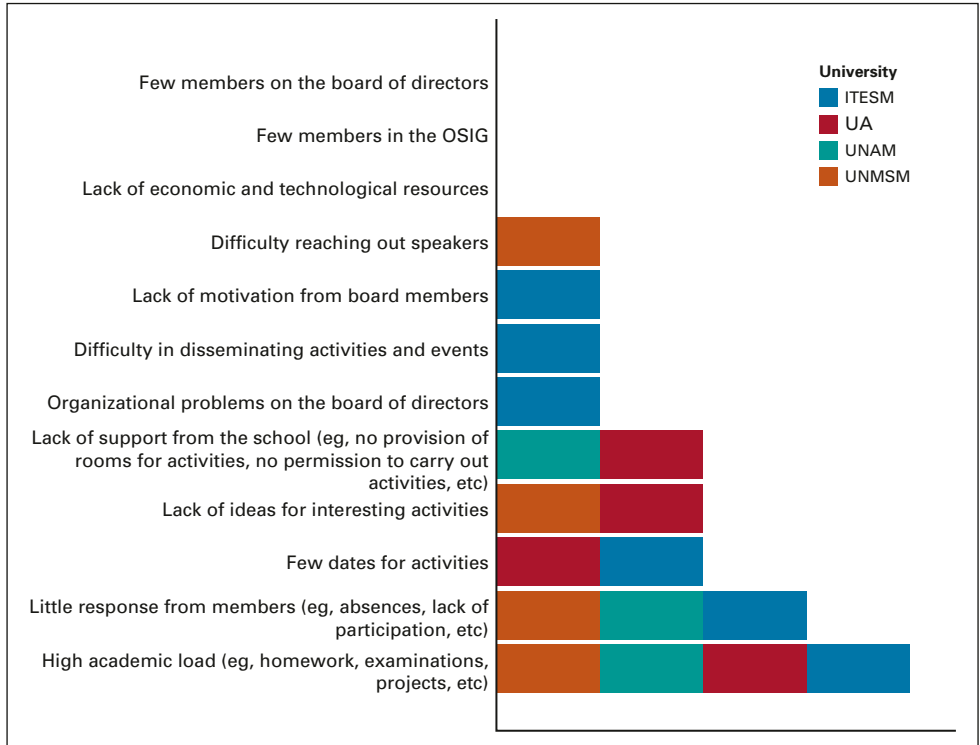
One of the core difficulties faced by leaders was the lack of participation from student members. To increase OSIG members' engagement with the activities, leaders and mentors should effectively communicate with students, assess their perceptions and opinions toward the OSIG activities, and highlight its benefits in their future careers. Moreover, leaders should pay special attention to the correct scheduling and duration of events, and a hybrid modality of attendance should be offered. The principal difficulty faced by OSIG leaders and members was the excessive academic workload from their institution. This is further supported by the fact that most OSIG members belong to preclinical years of school, where the academic load and attendance to hospitals is lower compared with the last years of medical school. To tackle this issue, medical schools should give protected time for conducting OSIG activities, provide all the needed technical and infrastructural support, recognize and reward OSIG members for their work, and actively support them when designing activities, thus, truly advocating for the group's success.

The impact that the COVID-19 pandemic has had on oncology professionals is a reason for alarm. In a recently published article, the European Society for Medical Oncology Resilience Task Force collaboration explored the perceptions and feelings of oncology professionals during the COVID-19 pandemic, and they found that compared with the beginning of the pandemic, there were significantly more health care workers at risk of distress/poor well-being or feeling burnout in February-March 2021, 40% and 56%, respectively.¹⁶ In our study, nearly 30% of medical students mentioned that their participation in the OSIG's activities had decreased during the current pandemic. Moreover, for student leaders, the COVID-19 pandemic has posed significant challenges for carrying out activities due to limited places to carry out tasks, lack of an appropriate schedule, and high academic load. Schools should support OSIG activities by providing access to virtual platforms for having their meetings and develop student-wellness programs with a special focus on academic skills support and mental health aid. Thus, avoiding the increase in distress among medical students which if not promptly handled could lead to burnout.

This study has some limitations that must be considered when interpreting the results such as its cross-sectional nature, limited sample size, reliance on self-reported data, and lack of formal survey sampling, as well as language restriction for answering the survey, and the absence of oncologic specialties other than medical oncology involved in the design of the survey. However, it provides much-needed data to elucidate the perceptions of medical students regarding their OSIG and its activities. Future studies should focus on longitudinal follow-up of respondents to evaluate how many continue an oncology-related path after finishing medical school.

In conclusion, the results of the present article support the role of OSIGs in overcoming the worldwide shortage of oncologists. OSIG student leaders, medical schools, and

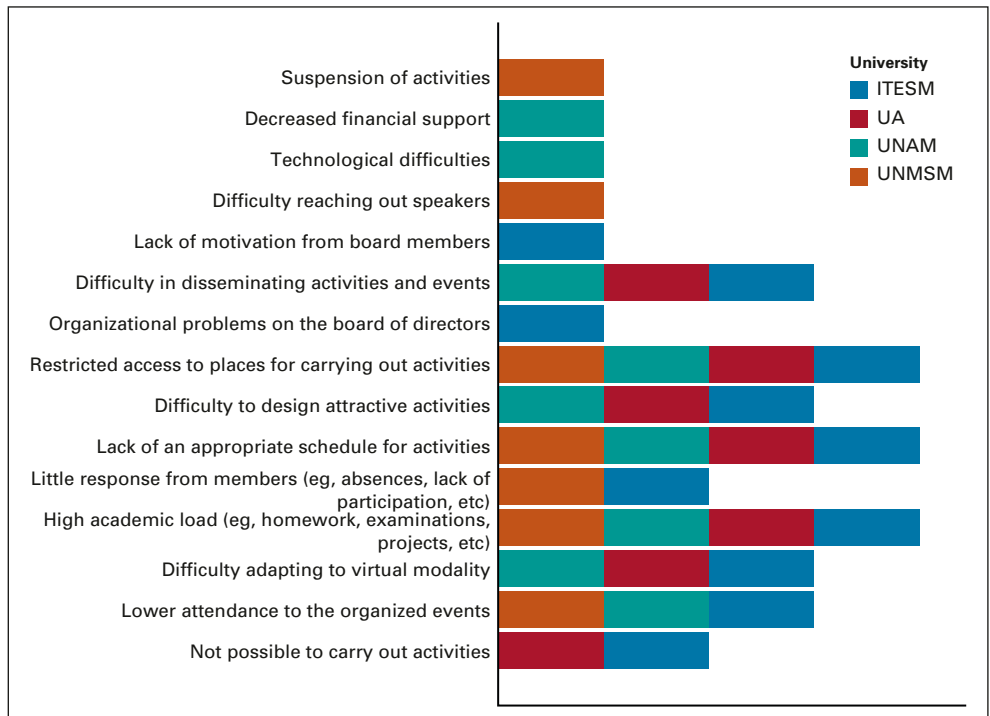
FIG 5. Difficulties faced by the leaders in carrying out activities. Colored boxes represent the different institutions involved in this study and the particular challenges faced by their leaders. The absence of boxes means that no institution perceived that statement as a difficulty to conduct activities. ITESM, Instituto Tecnológico y de Estudios Superiores de Monterrey Campus Monterrey; OSIG, Oncology Student Interest Group; UA, Universidad Anahuac; UNAM, School of Medicine of National Autonomous University of Mexico; UNMSM, Universidad Nacional Mayor de San Marcos.



international oncology organizations should work together to improve basic undergraduate oncology training and support medical students during their participation in OSIGs. Moreover, they should seek to design activities that increase medical students' exposure to oncology-related professionals, particularly focusing on the tasks that would benefit

students the most in the future and paying attention to the correct scheduling and duration of activities. Additionally, OSIG leaders and members should have active and prompt support from their school and international organizations to solve the problems and difficulties that they could be facing, to prevent members' burnout and groups' discontinuation.

FIG 6. COVID-19-related difficulties faced by the leaders in carrying out activities. Colored boxes represent the different institutions involved in this study and the particular challenges faced by their leaders. The absence of boxes means that no institution perceived that statement as a difficulty to conduct activities. ITESM, Instituto Tecnológico y de Estudios Superiores de Monterrey Campus Monterrey; UA, Universidad Anahuac; UNAM, School of Medicine of National Autonomous University of Mexico; UNMSM, Universidad Nacional Mayor de San Marcos.



AFFILIATIONS

¹Tecnologico de Monterrey, School of Medicine and Health Sciences, Monterrey, Nuevo Leon, Mexico

²Breast Cancer Center, Hospital Zambrano Hellion TecSalud, Tecnológico de Monterrey, San Pedro Garza García, Nuevo Leon, Mexico

³Personalized Medicine Laboratory, Instituto Nacional de Cancerología (INCan), Mexico City, Mexico

⁴San Fernando School of Medicine, Universidad Nacional Mayor de San Marcos, Lima, Peru

⁵Facultad de Ciencias de la Salud, Universidad Anahuac México Norte, Naucalpan, Mexico

CORRESPONDING AUTHOR

Cynthia Villarreal-Garza, MD, DSc, Batallon de San Patricio 112, Real de San Agustín, 66278, San Pedro Garza García, Nuevo Leon, Mexico; Twitter: @Dra_CVillarreal; e-mail: cynthia.villarreal@tecsalud.mx.

EQUAL CONTRIBUTION

E.N.-P. and P.S.-G. contributed equally as co-first authors to this work.

DATA SHARING STATEMENT

The data that support the findings of this study are available on request from the corresponding author.

AUTHOR CONTRIBUTIONS

Conception and design: Emilia Núñez-Peña, Paloma Siller-García, Fernanda Mesa-Chavez, Cynthia Villarreal-Garza

Administrative support: Cynthia Villarreal-Garza

Provision of study materials or patients: All authors

Collection and assembly of data: Emilia Núñez-Peña, Paloma Siller-García, Jose Lucio-Lozada, Silvia Villafuerte-Manrique, Mirelle Barrera López

Data analysis and interpretation: Emilia Núñez-Peña, Paloma Siller-García, Bryan F. Vaca-Cartagena, Jose Lucio-Lozada

Manuscript writing: All authors

Final approval of manuscript: All authors

Accountable for all aspects of the work: All authors

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

The following represents disclosure information provided by authors of this manuscript. All relationships are considered compensated unless otherwise noted. Relationships are self-held unless noted. I = Immediate Family Member, Inst = My Institution. Relationships may not relate to the subject matter of this manuscript. For more information about ASCO's conflict of interest policy, please refer to www.asco.org/rwc or ascopubs.org/go/authors/author-center.

Open Payments is a public database containing information reported by companies about payments made to US-licensed physicians ([Open Payments](http://OpenPayments)).

Cynthia Villarreal-Garza

Consulting or Advisory Role: Roche, Novartis, Pfizer, Lilly

Speakers' Bureau: Roche, Myriad Genetics, Novartis

Research Funding: AstraZeneca (Inst), Roche (Inst)

Travel, Accommodations, Expenses: Roche, MSD Oncology, Pfizer

No other potential conflicts of interest were reported.

REFERENCES

- Sherwood M, Rioux D, Knight R, et al: Increasing undergraduate exposure to oncology: The role of oncology interest groups. *J Cancer Educ* 35:997-1001, 2020
- Klufas A, Shin G, Raphael R, et al: A thorough analysis of the current state of cancer education in medical schools and application of experimental teaching techniques and their efficacy. *Adv Med Educ Pract* 11:931-946, 2020
- Agarwal A, Shah A, Byler S, et al: Cultivating interest in oncology through a Medical Student Oncology Society. *J Cancer Educ* 32:31-34, 2017
- ASCO: Student & Resident Resources. <https://www.asco.org/career-development/student-resident-resources>
- ASCO: Guide to Starting an Oncology Student Interest Group (OSIG). <https://www.asco.org/sites/new-www.asco.org/files/content-files/training-and-education/2020-Starting-an-OSIG-Guide.pdf>
- ASCO: ASCO 2020-2021 OSIG Group Roster. <https://www.asco.org/sites/new-www.asco.org/files/content-files/training-and-education/documents/2020-2021-OSIG-Roster.pdf>
- Anampa-Guzmán A, Loli-Guevara S, Gutierrez-Narvaez CA, et al: ASCO-sponsored oncology student interest groups in the world. *JCO Glob Oncol* 1586-1592, 2021
- Anampa-Guzmán A, Brito-Hijar AD, Gutierrez-Narvaez CA, et al: American Society of Clinical Oncology-sponsored oncology student interest groups in Latin America. *JCO Glob Oncol* 6:1439-1445, 2020
- Banerjee S, Dafni U, Allen T, et al: Gender-related challenges facing oncologists: The results of the ESMO Women for Oncology Committee survey. *ESMO Open* 3:e000422, 2018
- Elez E, Ayala F, Felip E, et al: Gender influence on work satisfaction and leadership for medical oncologists: A survey of the Spanish Society of Medical Oncology (SEOM). *ESMO Open* 6:100048, 2021
- Tecnológico de Monterrey: Plan de estudios—Médico Cirujano. <https://tec.mx/es/salud/medico-cirujano>
- Universidad Nacional Mayor de San Marcos: Plan de Estudios—Escuela Profesional de Medicina Humana. <https://medicina.unmsm.edu.pe/categoria/escuela-profesional-de-medicina-humana/subcategoria/escuela-profesional-de-medicina-humana-plan-de-estudios/D>
- Universidad Anáhuac: Licenciatura en Médico Cirujano. <https://www.anahuac.mx/medico-cirujano>
- Rallis KS, Wozniak AM, Hui S, et al: Inspiring the future generation of oncologists: A UK-wide study of medical students' views towards oncology. *BMC Med Educ* 21:1-10, 2021
- Loriot Y, Albiges-Sauvin L, Dionysopoulos D, et al: Why do residents choose the medical oncology specialty? Implications for future recruitment—Results of the 2007 French Association of Residents in Oncology (AERIO) Survey. *Ann Oncol* 21:161-165, 2010
- Lim KHJ, Murali K, Thorne E, et al: The impact of COVID-19 on oncology professionals—One year on: Lessons learned from the ESMO Resilience Task Force survey series. *ESMO Open* 7:100374, 2022