Scientific Conferences for Medical Students: Why do We Need more Spaces for Students to Enhance Research?

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The central role that clinical and translational research contributes to the advancement of medical treatment and enhancement of patient care places sustained research interests at the forefront of many physicians continued professional development.¹ Consequently, many medical students endeavour to begin their research careers in congruence with their studies at medical school. Early and active engagement in research can develop scientific writing technique, enhance skill such as data analysis, and provide mentorship opportunities, often fostering a life-long specialist research interest in medical students. Despite this, many barriers to involvement, publication and dissemination of medical student-led research remain, hindering access and participation.²

A previous editorial spoke to the barriers to conducting research at a student level and the consequences of such including lack of funding opportunities, lake of well-established research programmes, and a lack of mentorship available. In addition, the editorial posed many practical solutions to issues raised, such as the creation of dedicated platforms for medical students to share research activities such as symposiums, poster sessions and conferences.³ Furthermore, it is established in the literature that both certifications of participation and awards at conferences prove to be motivating factors for student participation and engagement in research. Thus, increased assurance to obtain such opportunities, in the form of student research-specific conferences, may act as an incentive.⁴

There are few research conferences dedicated entirely to medical student research. Prior to the inception of such events, some of which are listed in <u>Table 1</u>, the only methods of research dissemination for medical students were speciality-specific national and international conferences, where medical students had to complete against highly qualified physician scientists, with illustrious careers in their specific field, for exposure of their work at such conferences. The disparity in research experience between

the two cohorts often leaves medical student research side-lined and shut out of such events. $^{\rm 5}$

Academic conferences are essential to the growth of new scholars as medical students. Attending these events, according to research, is a learning process in which participants increase their knowledge, study skills, networking abilities, and professional connections.⁶⁻⁸ Particularly doctoral students utilize seminars to acquire new information.⁹ The process of socialization during conference attendance consists of four stages: introduction to new rules and roles, increased focus on tasks and comprehension of career objectives, growing confidence, and finally internalization of their roles as researchers, leading to the formation of a professional identity.¹⁰

Scientists usually rely on the published papers of their peers to gather knowledge; however, publishing delays frequently render this information outdated or obsolete. To keep current, researchers rely on "not yet published" knowledge and informal contacts, particularly during conferences.¹¹ These conferences allow for the exchange of not only scientific knowledge but also social issues, career news, and other topics.^{12,13} Unofficial encounters at conferences provide valuable resources to attendees' social networks. People benefit from partnerships that supply nonredundant knowledge, according to social network theory. The possibility of obtaining such data is contingent on scientists bridging gaps in diverse networks. Redundancy is caused by strong links within the same group or structural equivalence with similar contacts. The diversity of conference attendees influences the potential of collecting nonredundant information. International conferences draw a wider spectrum of groups than smaller, more homogeneous national conferences, increasing the chance of such access.^{14,15}

Researchers can benefit both personally and collectively from attending conferences. Personal growth, like a conference-

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inspired, single-authored work, is an example of an individual effect. Collective effects are the result of interactions between multiple people, which can lead to both formal and informal networks of cooperation and friendship. These sweeping impacts are consistent with the sociological idea of communal outcomes coming from people's individual choices. Researchers attend conferences to network and advance their careers, especially when jobs, funding, and connections are on the line.¹⁶⁻¹⁸ Collective effects happen because of the social interactions that these contacts create. These interactions can then lead to the creation of structures, organizations, and research partnerships. Lack of effective communication and strong ties, on the other hand, can hinder collaboration and the overall productivity of conferences. This is because conferences offer a social setting that is not usually found in academia. Because of this, conferences are likely to have effects on both individuals and groups.^{19,20}

A decline in the number of physicians actively participating in research has been widely reported in the literature, leading to many postulating the increased role of medical student research, including student-led research conferences, as a solution to safeguarding the future of academic medicine.²¹ It has been documented those students that are involved in, and published research as medical students are three times more likely to continue to publish after graduation when compared to their counterparts that did not participate in research while studying.²² With this in mind, it is evident that medical student-specific research conferences can, and will, play a vital role in ensuring the continued prosperity of the role of the physician scientist and academic medicine as a whole.

The success of the International Journal of Medical Students (JJMS) publications and subsequence research conference serves to highlight the vital role of student-led research and the need for increased avenues for its dissemination. It is evident that there is both a need and an appetite for an increase in opportunity for medical student-specific research conferences. Initiatives, such as the World Conference of Medical Student Research (WCMSR), have begun to dismantle barriers to these opportunities. An increase in both quantity and frequency of such events will continue to close the gap between medical students and access to such opportunities.

On 7th October 2023, the JJMS will host the 2023 WCMSR, a virtual research conference which will provide a platform for medical students and recent medical graduates (up to three-years post-graduation) to disseminate their own research on an international stage. This is the second such conference of its kind, following the success of the first WCMSR on 12th November 2022. The first conference featured 40 abstracts, including original research articles and case reports, from 30 different countries across the globe.²³ The audience can participate voting for their favorite presentation and raise their questions, opinions, and comments to improve discussions and create potential collaborations. The conference will be transmitted live on

YouTube® and you can register, attend or review it here: <u>https://www.youtube.com/watch?v=LqO3DfVDvxg</u>.

This issue of the IJMS underscores the vitality of medical studentled research through a range of articles. This includes four original articles, one short communication, two case reports, two reviews, one letter to the editor, two editorials and two experiences.

The IJMS had the honor of featuring another editorial written by editors of leading scientific journals from around the globe, putting their voice together to call for action on humanity issues. The fourth of its kind to feature in our journal, this article discusses the role of healthcare workers in reducing the risk of nuclear war, citing the International Physicians for the Prevention of Nuclear War, conceived in the 1980s, as a starting point for actionable change on such an issue by physicians.²⁴ This follows previous editorials by the group that addressed other humanitarian issues, namely climate change and its impact on health. They highlight the need to limit global temperatures and restore biodiversity and implored urgent change following the COP27 Climate Change Conference.²⁵⁻²⁷

In their short communication, Lin et al., explored potential lifestyle risk factors for burnout during medical school. Reporting that over half of medical students experience burnout, the study found lack of sleep and poor support system as dominant risk factors. Furthermore, it revealed that medical students suffering from burning reported poorer mental health and reduced life satisfaction. In the context of medical student research as an extra-curricular commitment, this article highlights a need to ensure that appropriate resources are available to for medical students taking on additional research participation while at medical school.²⁸

One case report featured in this edition focused on a rare neurological condition, Moersch-Woltman Syndrome and the establishment of anti-GAD antibodies to aid in its diagnosis.²⁹ In the second case report, Wilcox et al., describe the usefulness of early point of care ultrasound training in medical school in a student-run free clinic. The case reported in the article strongly supports their arguments for enhanced point of care ultrasound teaching to be incorporated in medical school curriculums.³⁰

One review in this edition presents a systematic review of pseudo-chilblains in confirmed cases of COVID-19.³¹ The second focuses on medical students' perspective of the operating theatre as a place of learning, exploring negative and demotivating experiences that discourage medical students from operating room attendance. In contrast, it shows that positive surgical experience serves as a motivating factor for a future surgical career. It could be postulated that a similar experience in medical student research could have the same impact on future research careers, emphasizing the importance of positive research involvement during medical school to ensure continued participation in research once a practicing physician.³²

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Conference name	Organization	Location	Website
World Conference of Medical	International Journal of Medical	USA (global)	https://ijms.info/IJMS/Conference/welcome
Student Research, WCMSR	Students		
Young European Scientist, YES Meeting*	Young European Scientist	Porto, Portugal	https://yesmeeting.org
Annual International Medical Students Meeting, AIMS*	University of Lisbon, Faculty of Medicine	Lisbon, Portugal	https://www.aimsmeeting.org
Colombian Student Congress of Medical Research, CECIM*	ASCEMCOL	Colombia	https://www.ascemcol.org
Congresso Médico-Academico Do Piauí, COMAPI *	Medical-Academic College, Federal University of Piauí,	Piauí, Brazil	www.comapi.org
International Student Medical Congress in Košice, ISMCK*	Association of Medical Students in Kosice - Spolok medikov mesta Košice (SMMK)	Kosice, Slovakia	www.ismsck.com
National Medical Students' Conference, CNEM*	University Miguel Hernández	Spain	https://www.cnemcongress.com
International Medical Students' Research Congress, IMSRC*	Phramongkutklao College of Medicine (PCM)	Bangkok, Thailand	https://researchculturesociety.org/imsrc- 2022
International Congress For Medical Students and Young Health Professionals, Medicalis*	Medicalis	Cluj-Napoc, Romania	www.medicalis.ro
International Student Psychiatry Conference Katowice, ISCP *	Students' Scientific Association at the Department of Psychiatry and Psychotherapy of Medical University of Silesia in Katowice	Katowice, Poland	-
International Medical-Academic Congress of Maranhao, COIMAMA	University Ceuma (UNICEUMA)	Maranhão, Brazil	www.coimama.com.br
Warsaw International Medical Congress for Young Scientists, WIMC	Medical University of Warsaw	Warsaw, Poland	https://wimc.wum.edu.pl
Malaysian Medics International, MMI (MMSS)*	MAHSA University, Malaysia	Malaysia	www.malaysianmedics.org
Ainshams International Medical Student Congress, AIMSC*	AinShams University	Cairo, Egypt	www.aimscegypy.org
Student Research Unit Zazazig University, SRUZU*	Zazazig University	Zazazig, Egypt	-
International Medical Students Congress Sarajevo, SaMED*	Association of Students of the Medical Faculty in Sarajevo (ASMF Sarajevo), Bosnian and Herzegovinian Medical Students' Association (BoHeMSA), International Student Surgical Network (InciSioN BiH)	Sarajevo, Bosnia and Herzegovina	http://ojs.samed.ba
Brazilian International Congress of Medical Students, BRAINSCOMS*	Federal University of São Paulo, Brazil	São Paulo, Brazil	http://www.braincoms.com/2018/
Uzbekistan IFMSA*	Tashkent Medical Academy	Uzbekistan	www.tma.uz
International Congress of Medical Sciences, ICMS*	Association of Medical Students in Bulgaria	Sofia, Bulgaria	https://amsb-varna.com/en/
Yorkshire Imaging and Interventional Radiology Symposium International, YiiRs*	University of Leeds	Leeds, United Kingdom	-
Congresso Médico Universitário De Mogi Das Cruzes, COMUMC	University of Mogi das Cruzes	Mogi das Cruzes, Brazil	https://www.even3.com.br/comumc42/
Students Against SARS-CoV-2*	Students Against COVID	International	-
American Physician Scientist Association, APSA Pitt	University of Pittsburgh	USA	https://www.physicianscientists.org/events/ EventDetails.aspx?id=1552860&group=
International Medical Students' Congress of Bucharest	Carol Davila University of Medicine and Pharmacy	Bucharest, Romania	https://imscbucharest.com

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Lagos State University Medical Students Association Research Conference	Lagos State University	Nigeria	-
ISCI Annual Conference	International Society for Chronic Illnesses, ISCI*	International	https://www.isci.info/
Bangladesh International Medical Students' Scientific Congress, BIMSSCON	Bangladesh International Medical Students	Bangladesh	www.bimsscon.org
Atlantic Corridor Medical Student Research Conference	Atlantic Corridor	Cork, Ireland	https://www.ucc.ie/en/medical/research/atl anticcorridor/
Student Neurosurgical and Neurological Research Conference, SNRC	Brown Neurosurgery	Rhode Island, USA	https://brownneurosurgery.com/education/ aans-student-chapter/
International Conference for Healthcare and Medical Students, ICHAMS	Royal College of Surgeons	Dublin, Ireland	https://www.ichams.org
UQ Medical Student Research Conference	UQ Medical Student Research Conference	Queensland, Australia	a <u>https://medical-</u> <u>school.ug.edu.au/event/session/20597</u>
Medical Student Orthopedic Society Research Conference, MSOS	Medical Student Orthopedic Society	Virtual	https://www.msosortho.com
Eastern-Atlantic Student Research Forum, ESRF	Eastern-Atlantic Student Research Forum	n Miami, USA	https://med.miami.edu/research/esrf
Pediatric Research Forum for Medical Students	Florida Chapter of the American Academy of Pediatrics annual meeting	Florida, USA	https://research.pediatrics.med.ufl.edu/new s-events/pediatric-medical-student- research-forum/
PODER Research Symposium	Latino Medical Student Association	Philadelphia, USA	https://national.lmsa.net/programming/nc2 022/

Legend: *Abstract book(s) published by the International Journal of Medical Students (IJMS)

One of the experiences examines the impact of an electronic system at a student-run free clinical on maximizing efficiency of patient assistance program applications. This article further underscores the value that medical student-led programs can have in a clinical setting, as discussed in Wilcox et al.,'s case report.³³ The second experience explored bias among medical teams as experienced by Asian medical students in the United States and call for actions to tackle bias in the medical field.³⁴

In their letter to the editor, Zolo emphasized the role of medical students and surgical trainees in the advancement of global surgical research in low- and middle-income countries, once again supporting several points made both in this editorial and through other articles featured in this edition of the journal.³⁵

In their original research article, Thibaut et al., explore the opposing role of HLA-DQB1*0301 in bullous pemphigoid and pemphigus vulgaris through a meta-analysis.³⁶ Khuluf et al., report findings regarding the hepatotoxic effects of Doxorubcin on female rats.³⁷ Wei Wei Kong et al., describe a cross-sectional study looking at student perspectives on e-learning a year into the COVID-19 pandemic that forces most educational activities online. They report a negative impact on performance satisfaction and a perceived reduction in practical skills in medical students in Malaysia.³⁸ Finally, Osei-Hunoir and Vorona's article provides insight into the role and impact of dyslexia awareness workshops enhance medical student knowledge on the condition and provide students with the confidence to support peers with dyslexia.³⁹

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