Medical students have made significant contributions to science and medicine throughout history. Such landmark contributions include the discovery of insulin, heparin, and the sinoatrial node.1 The importance and benefits of early exposure to scholarly activities have recently been scrutinised. Participation in undergraduate medical research is associated with short- and long-term scholarly achievements, including improved research knowledge and skills, increased interest in future involvement in research, peer-reviewed journal publications, grants, and appointment to faculty positions.2,3 A recent meta-analysis by Amgad et al. found that students who took part in research during medical school were more than twice as likely to publish at least one article post-graduation, more than three times as likely to participate in research activities later in their career, and over six times as likely to pursue a career in academic medicine.3 Medical schools across the globe have systematically incorporated research education and training pathways into their medical curricula.1 In New Zealand, several research training programmes, both formal and informal, are available to medical students. These include intercalated research degrees i.e. Bachelor of Medical Sciences with Honours (BMedSc(Hons)) or Doctor of Philosophy (PhD), summer studentships, and mandatory research projects (Figure 1).4 Recently, studies have examined academic outcomes from these programmes and found them to result in tangible research outputs, with a journal publication rate ranging between 8.4–33%.5–8 This is comparable to the average publication rate of medical student research worldwide (30%).5

Figure 1: Research opportunities for medical students in New Zealand

Medical student journals (MSJs) are student-led and edited peer-reviewed periodicals that primarily publish student-authored scholarly work.10 There are over 20 English-language peer-reviewed MSJs including the New Zealand Medical Student Journal (NZMSJ), Australian Medical Student Journal, Harvard Medical Student Review, and McGill Journal of Medicine.9 MSJs provide medical students with avenues to share their scholarly work, exchange research ideas, and familiarise themselves with the publishing and peer-review processes.4,9

Although MSJs represent a well-established academic medium with some journals now running for close to a century,9 some educators continue to discourage students from utilising such channels to disseminate their work.10 Lack of official journal impact factor and Medline® indexation, presumed poor quality of published articles, and opaque peer-review policies are some of the reported reasons for steering students toward more conventional journals.9

Despite these concerns, MSJs are uniquely positioned to promote scholarship among medical students in this era of a declining physician-scientist workforce. A recent novel study found publication in an MSJ to be associated with long-term academic achievements. In their matched-cohort study, Al-Busaidi and colleagues reported that medical students who published in the NZMSJ were more likely to publish in PubMed®-indexed journals (odds ratio [OR] 3.09, p = 0.001), obtain a PhD (OR 9.21, p = 0.004) or any higher academic degree (OR 2.63, p = 0.007), and attain academic positions (OR 2.90, p = 0.047) following graduation compared to gender-, university-, and graduation year-matched controls.11 The NZMSJ is a student-run, Google Scholar-indexed, national peer-reviewed journal that primarily publishes original and non-original contributions authored by medical students. The journal employs a double-blinded peer-review policy and since its launch in 2004 it has published over 300 articles distributed over 29 issues.12

Although publication during medical school is associated with future academic success, around 70% of research performed by medical students worldwide is unpublished.1 In New Zealand, approximately two-thirds of intercalated degree and summer studentships projects remain unpublished.4,9 Reasons for non-publication are complex and include poor support by supervisors, perceived lack of academic publishing skills, fear of rejection, and time and financial constraints.7,9,14 MSJs, as an alternative outlet for research, can provide a remedy for this problem. Currently, a small percentage of student-authored articles (3-4%) in the NZMSJ during the period 2004–2017 were contributed by medical students completing an intercalated research degree.15 Moreover, the road to academia is long and filled with challenges. Success in early research experiences including publishing are highly reinforcing and counteract the all-too-common lack of confidence that may dissuade students from pursuing research.10 The supportive environment in MSJs affords students an opportunity to experience the peer-review and publishing processes and supports them to disseminate their work, thereby promoting future participation in research.11

The mounting pressure on students to establish competitive portfolios for residency or specialist training applications may, unfortunately, motivate some to seek fast publication in predatory journals.15 This, in turn, may result in serious repercussions such as publishing low-quality and possibly fraudulent research, tarnishing students’ and

Stimulating the physician-scientists of tomorrow: A survey of research opportunities for medical students in New Zealand

Opportunities for students

Future research

Measure outcomes

Evaluate experiences

Identify barriers to involvement

Intercalated Degrees

• BMedSc(Hons)

• PhD

Required research experience

• Public Health Modules

• Clinical Audits

Extracurricular opportunities

• Summer Research Studentships

• Research Electives

• Student-led Initiatives

Medical student journals: promoting academic research and publishing

Ibrahim S. Al-Busaidi

institutions’ reputation, and wasting scarce financial resources. All MSJs are peer-reviewed, and most of them are funded and published by academic institutions. Therefore, they should be promoted as an alternative medium for trainees’ scholarly work.

In conclusion, MSJs play a critical role in promoting academic medicine among students. Medical schools and educators would be well advised to continue to support MSJs intellectually and financially.

References:


About the authors

Dr Ibrahim S. Al-Busaidi is employed at the Department of General Medicine, Christchurch Hospital, Canterbury District Health Board, Christchurch, New Zealand, and the Department of Medicine, Christchurch School of Medicine, University of Otago, Christchurch, New Zealand

Correspondence

Dr Ibrahim S. Al-Busaidi: ibrahim.al-busaidi@cdhb.health.nz