SHORT COMMUNICATION

Clinician Mentorship in Promoting Medical Student Research Engagement

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Medical student engagement in research has been dwindling. Data predicting future trends are not promising either. Also, attempts to motivate medical students to participate in academic and research endeavours, opportunities and circumstances surrounding them should also be addressed. In this article, we shed light on nuanced and unique aspects of research mentorship. Involvement of medical students as supervised editors (of both medical students and mainstream journals) has long-lasting benefits for their future academic careers. Additionally, supervised research activities are more likely to reap their full benefits if the duration of the research project is tailored to the type of supervisors, and the amount of time available for the students and their supervisors to have a collaborative and non-rushed relationship. Therefore, meaningful mentorship by clinicians propels and encourages medical students in their academic and research journeys.

Keywords: Medical Student, Research, Editorial, Journal, Supervisor, Clinician-Scientist

الإرشاد السريري في تعزيز مشاركة طلاب الطب في الأبحاث

يشهد انخراط طلاب الطب في البحث العلمي تراجعًا ملحوظًا. كما أن البيانات التي تتنبأ بالاتجاهات المستقبلية غير واعدة. كما ينبغي تناول محاولات تحفيز طلاب الطب على المشاركة في المساعي الأكاديمية والبحثية، والفرص المتاحة لهم، والظروف المحيطة بهم. في هذه المقالة، نسلط الضوء على جوانب دقيقة وفريدة من نوعها للإرشاد البحثي. إن مشاركة طلاب الطب كمحررين تحت الإشراف (سواءً في المجلات العلمية أو في المجلات العلمية السائدة) تعود بفوائد طويلة الأمد على مسيرتهم الأكاديمية المستقبلية. بالإضافة إلى ذلك، من المرجح أن تجني أنشطة البحث الخاضعة للإشراف فوائدها الكاملة إذا صُممت مدة مشروع البحث بما يتناسب مع نوع المشرفين، والوقت المتاح للطلاب ومشرفيهم لبناء علاقة تعاونية وغير متسرعة. لذلك، فإن الإرشاد الها دف من قِبل الأطباء السريريين يدفع طلاب الطب ويشجعهم في مسيرتهم الأكاديمية والبحثية.

الكلمات المفتاحية: طالب طب، باحث؛ محرر، مجلة، مشرف، طبيب-عالم

مربیگری پزشک بالینی در ارتقای مشارکت پژوهشی دانشجویان پزشکی

مشارکت دانشجویان پزشکی در تحقیقات رو به کاهش بوده است. داده‌های پیش‌بینی روندهای آینده نیز امیدوارکننده نیستند. همچنین، تلاش‌ها برای ایجاد انگیزه در دانشجویان پزشکی برای شرکت در تلاش‌های دانشگاهی و تحقیقاتی، فرصت‌ها و شرایط پیرامون آنها نیز باید مورد توجه قرار گیرد. در این مقاله، جنبه‌های ظریف و منحصر به فرد مربیگری پژوهشی را روشن می‌کنیم. مشارکت دانشجویان پزشکی به عنوان ویراستاران تحت نظارت (هم دانشجویان پزشکی و هم مجلات اصلی) مزایای طولانی مدتی برای مشاغل دانشگاهی آینده آنها دارد. علاوه بر این، اگر مدت زمان پروژه تحقیقاتی متناسب با نوع اساتید راهنما و میزان زمان موجود برای دانشجویان و اساتید راهنما برای داشتن رابطه‌ای مشارکتی و بدون عجله باشد، احتمال بیشتری وجود دارد که فعالیت‌های تحقیقاتی تحت نظارت از مزایای کامل خود بهره‌مند شوند. بنابراین، مربیگری معنادار توسط پزشکان، دانشجویان پزشکی را در سفرهای دانشگاهی و تحقیقاتی خود به پیش می‌برد و تشویق می‌کند.

واژه های کلیدی: دانشجوی پزشکی، پژوهشگر، سرمقاله، مجله، استاد راهنما، پزشک - دانشمند

طبی طالب علم کی تحقیقی مصروفیت کو فروغ دینے میں کلینشین مینٹرشپ

تحقیق میں میڈیکل طلباء کی مصروفیت کم ہوتی جا رہی ہے۔ مستقبل کے رجحانات کی پیش گوئی کرنے والا ڈیٹا بھی امید افزا نہیں ہے۔ اس کے علاوہ، طبی طلباء کو تعلیمی اور تحقیقی کوششوں میں حصہ لینے کی ترغیب دینے کی کوششوں، مواقع اور ان کے آس پاس کے حالات پر بھی توجہ دی جانی چاہیے۔ اس مضمون میں، ہم نے تحقیقی رہنمائی کے اہم اور منفرد پہلوؤں پر روشنی ڈالی ہے۔ میڈیکل طلباء کی بطور نگران ایڈیٹرز کی شمولیت (میڈیکل طلباء اور مرکزی دھارے کے جرائد دونوں کے) ان کے مستقبل کے تعلیمی کیریئر کے لیے دیرپا فائدے ہیں۔ مزید برآں، زیر نگرانی تحقیقی سرگرمیاں اپنے مکمل فائدے حاصل کرنے کا زیادہ امکان رکھتی ہیں اگر تحقیقی پروجیکٹ کی مدت سپروائزرز کی قسم کے مطابق ہو، اور طلباء اور ان کے سپروائزرز کے درمیان باہمی تعاون اور غیر جلدی تعلقات کے لیے دستیاب وقت کی مقدار۔ لہٰذا، طبی ماہرین کی بامعنی رہنمائی طبی طلباء کو ان کے تعلیمی اور تحقیقی سفر میں آگے بڑھاتی اور ان کی حوصلہ افزائی کرتی ہے۔

کلیدی الفاظ: میڈیکل اسٹوڈنٹ، ریسرچ، ایڈیٹوریل، جرنل، سپروائزر، کلینشین-سائنس دان

INTRODUCTION

Several previous studies have highlighted the advantages of medical student engagement in the research process. The benefits extend from the short-term (improved academic writing skills (1), and acute awareness of the peer-review process (2)), to the medium-term (sharpened critical appraisal skills, and application of research to clinical contexts (3)), as well as the long-term (continued engagement in research and academia (4), improved clinical acumen and skills, and translation of basic sciences to the patients' advantage (3).

Despite the multiplicity of aforementioned advantages, however, student engagement in research remains low (5). Additionally, data indicate that prospects for research and teaching are among the least influential factors in determining future career choices for recent medical graduates (6). Hence, if the status quo is to be improved, barriers must be identified and lessened, and creative solutions to invigorate student interest in research implemented.

Mentoring students as journal editors

There is a paucity in empirical data demonstrating the experiential benefits to medical students of supervised editorial roles. Recently, some mainstream journals have elected to include medical students in their editorial teams (7). The putative advantages of such inclusion may be seen on two levels. For the students, such experiences are thought to provide opportunities for close mentorship, and networking with senior editorial staff (8). If the experience is a positive one, it is presumed to instil an ongoing academic curiosity and affiliation, and hence helps create a generation of clinician-scientists (8). For the journals, having "young blood" (i.e., student-editors) may be helpful in accelerating technological proficiency, challenge long-held assumptions, expand the journals' reach to fellow students, and those student-editors may also act as assistants to senior editors and liaisons to professional organisations (7, 9).

To explore the role of medical student journals (MSJs) providing their student-editors with meaningful exposure to scientific editing, we recently surveyed a convenience sample of the editorial boards of three MSJs (Alamri, in press). A total 31 past and current student-editors from the International Journal of Medical Students, Journal of Asian Medical Students' Association, and New Zealand Medical Student Journal responded were included. The sample had a near-equal split between males and females, and a diverse ethnic background. Approximately half were current student-editors, while the remainder had served in previous years in various roles. Notably, most had no prior editorial experience, yet nearly all respondents emphasized the importance of student-run journals, reporting minimal adverse effects on their academic work or personal relationships (Alamri, in press). Moreover, almost all continued to engage in research, with a substantial majority engaging in PhD studies and roles in mainstream journals—underscoring the long-term benefits of early editorial experience.

These findings are very encouraging, especially in light of the known shortage of clinician-scientists (10-13). Therefore, all reasonable efforts must be employed, and avenues explored, in order to increase the number of clinicians who are aptly suited for clinical medicine, as well as research. Despite a lack of 'prior experience', editorial involvement in MSJs they most often entail working closely with senior researchers and mentors (14). It is likely that such experience and mentorship have left a long-lasting and meaningful impression on these student-editors—such that the majority remains involved in research activities to date. This, in turn, is hoped to result in continued success and excellence in their clinical and academic careers, including better professional decisions, higher likelihood of obtaining higher degrees, and an enduring affiliation with academia (12). The additional responsibilities of being a student-editor do not seem to have negatively impacted our participants. This included no adverse consequence to the student's perceived physical health, cognitive burden, emotional and psychological wellbeing, and academic performance (Alamri, in press; 15, 16). This is vital to highlight as our participants provided their skills and time on a voluntary basis (in addition to their busy curricular loads) as is the case with most MSJs (14, 17), rather than having dedicated time to do so (18).

Mentorship by academic clinicians

Established academic clinicians play a crucial role in mentoring medical students through the complex process of research and publishing. Their guidance is essential in helping students navigate the intricacies of research design, data analysis, and manuscript preparation. Early exposure to research under the mentorship of experienced clinicians significantly enhances students' research skills and academic productivity (1). This mentorship not only improves the quality of the students' research, but it also increases their chances of successfully publishing in higher impact journals (19). Moreover, academic clinicians provide critical support in overcoming the barriers that medical students often face when attempting to publish their research. These barriers include limited research experience, time constraints, and the high rejection rates of mainstream journals. Clinicians can help students by offering constructive feedback, facilitating access to research resources, and encouraging perseverance through the publication process (20).

The availability of clinical supervisors to support students through the publishing process must be balanced with the supervisors' clinical duties. We have previously examined the publication rates of medical student projects supervised by clinician vs non-clinician supervisors at the University of Auckland and University of Otago (both in New Zealand) between 2001 and 2013 (21). For short projects (defined as < 4 months), clinician supervisors were less likely to be published (n = 30; 71.4%) than full-time non-clinician academics (n = 27; 93.1%), p = 0.01. For research projects longer than 4 months, however, there was no statistically significant difference in the number of publications ($t87 = 1.19$, p = 0.1). Longer projects, therefore, appear to allow academic clinicians sufficient time to balance their clinical and academic duties, and provide the necessary support to the medical students to publish their findings (21).

By fostering a supportive environment, clinicians help students build confidence and resilience, which are essential for academic success. The mentorship and collaboration with established researchers provide students with valuable networking opportunities and professional development. Students who published under the guidance of academic clinicians are more likely to pursue higher academic degrees and attain academic positions in the future (22).

CONCLUSION

Our exploratory findings suggest that mentoring the novice medical student researcher is likely to result in several benefits. We have shed light on nuanced and unique aspects of research mentorship (i.e., supervised involvement of students as editors, as well as giving consideration to project durations when selecting a research mentor) which contribute novel knowledge to the published literature.

Supervised involvement as a student-editor seems to have ignited a long-lasting interest in research in most participants. In addition, the involvement of academic clinicians as supervisors and mentors, especially for longer research projects, serves to propel research productivity among medical students. Given the limited setting of our studies and convenience sampling employed, our results may not be generalised, and risk selection bias and demographic imbalances. It is, therefore, imperative to continue this line of research in various academic and geographical setting in order to ensure successful and enduring interest in academic endeavours by these aspiring clinician-scientists.

Ethical Considerations:

Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors.

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