Addressing a Training Gap through Addiction Research Education for Medical Students: Letter to the Editor

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The editorial by Gordon and Alford [1], in the recent special issue of the *Substance Abuse* (Vol. 33, No. 3), provides an insightful reflection on the early attempts at describing curriculum development and implementation of addiction content into various learning environments. We commend the editors and authors of the research contained in this special issue for their pioneering work on promoting screening, brief interventions and referral to treatment (SBIRT), and also wish to reflect on our experiences of supporting addiction research by medical students through systematic reviews of literature, e-learning methods (webinars, online assessments), and collaboration with physicians, medical educators and policy makers..

Interviewing healthcare professionals can generate important clinical questions for future research on SBIRT [2]. In July 2010, we were conducting qualitative interviews with family physicians in Ireland about SBIRT for unhealthy alcohol use among patients who also use other drugs. After one of these interviews, a physician asked: "Do brief interventions work for these people?" We were absolutely convinced about the positive effects of brief interventions, but we had no evidence to support it. We were also surprised by his interest and sent him the only two studies on the topic that we knew of [3,4]; Never heard back from him.

We tried to find more studies, but we couldn't [5,6]. This made us doubt the effectiveness of alcohol SBIRT for patients with substance use disorders. At that time, the Health Research Board of Ireland announced a call for Cochrane training fellowships. The fellowships train healthcare professionals and researchers in systematic reviewing and subsidise their salaries during the reviews (www.hrb.ie). I spoke to my supervisor who introduced me to a Cochrane author who had conducted a Cochrane review on self-help interventions for high blood pressure [7], and agreed to mentor me on a Cochrane fellowship. We registered the title for the proposed review with the Cochrane Drug and Alcohol Review Group in Italy (http://cdag.cochrane.org).

The review found very few studies, most of them suffered from a lack of control group or randomised patients without unhealthy alcohol use [8]; we could not give any recommendations to our guideline development group working on a clinical guideline for primary care. Nevertheless, the multi-disciplinary group developed the guidelines, which were informed largely by expert consensus and qualitative interviews with healthcare professionals and patients [9,10]. The Problem Alcohol / Drug Use Guideline Development Group (PADU-GDG) experts were from the following areas and agencies: Addiction care and treatment, Primary care, General and Liaison psychiatry services, Public Health, Service

user or community organisations, General Medicine and Hepatology, Rehabilitation, Emergency medicine, and frontline services.

The sheer absence of good trials in our field encouraged us to apply for funding to conduct a trial. Our application was successful, but the funding agency recommended conducting a feasibility study before the definitive trial. Following their recommendations, we revised our plans and published a protocol for the feasibility study [11]. Instead of the effectiveness, we focused the pilot trial on the feasibility and acceptability. This new study is a before-and-after trial of a complex intervention to promote SBIRT for unhealthy alcohol use among problem drug users, with cluster randomisation at practice level, and integrated qualitative process evaluation; involving 16 family practices in two deprived regions. Our collaborators from the SBIRT Oregon project, whose pilot results are presented in this special issue [12,13], supported the development of the education and evaluation materials.

Upon completing Cochrane training and the review, we had an opportunity to teach some of these skills to medical students at University of Limerick. Equipping the new generation of physicians with critical literature review and appraisal skills was my contribution to the enhancement of addiction healthcare delivery. The aim of our educational project was to develop and pilot-test feasibility of a researcher-facilitated curriculum for medical student research activity in family medicine [14].

To this end, a post-doctoral researcher (JK) supported literature reviews and other research activity by medical students on problems commonly encountered in family medicine by providing methodological advice and mentoring, through one-one interaction and webinars. Participants were those students who agreed to complete a project with the authors' research group and collaborators represented disciplines such as Biostatistics, Family medicine, Internal Medicine, Neurosciences, Paediatrics, Psychiatry and Public Health.

Ethical approval for the human subjects' related research was received from the Irish College of General Practitioners (ICGP).

Fourteen students participated in the first two cycles of the curriculum. Almost all were female (95%), 26 years old on average. Specific activity which was supported in 2012-13 included: one summer studentship (July-August), Year 3 Special Study Modules (9 students, May-February), and Year 4 Special Study Modules (4 students, August-December). The research topics substance use / mental health disorders, diabetes and psychosocial interventions in family medicine were examined via literature reviews and multi-practice cross-sectional studies. The research (of mentored students) meets applicable ethical guidelines.

Self-reported changes in knowledge and confidence in doing literature reviews were assessed before / after the curriculum with 5-point (1=poor, 5=excellent), likert-type rating scales (e.g. How would you rate your overall competence and confidence in doing literature reviews?). Students were asked to complete progress polls (electronic), which assessed percentage of task completion and remaining issues/ tasks, at least 48 hours before scheduled meeting; however, only seven polls were received precluding any further analysis. Students received the facilitation favourably and reported increased levels of knowledge and skills in medical research. Overall, they reported 36% change in knowledge and confidence in doing reviews. Use of reference management software improved by 24%, electronic searches by 34%, data extraction by 22%, and write-up and narrative synthesis by 26%, after the webinars. As one of the students commented about the webinars, "They were clear and pointed us in the right direction with regards to the lit reviews." Their work led to three conference presentations and four academic papers in peer-reviewed journals (two currently under review) [15-21].

Teaching literature reviews to medical students was a rewarding learning experience. We learned that students vary in their capability and expectations, which can lead to different work processes and outputs. Although many students published their work in journals, or presented at conferences, completion of research projects was uncertain, some submitted their work in more finished stage than others. Inevitably, manuscript preparation, submission and publication required the subsequent input of the authors; some students persevered and remained involved until publication. In addition, communication with collaborators was most effective when done by the primary authors.

From a personal perspective – as addiction health services researchers - starting a Cochrane review took us on a journey which led from a clinical question, to policy development, medical education and further research in a very short time. We still don't know whether SBIRT works for unhealthy alcohol use in people who also use other drugs, but we hope to determine this soon in our new feasibility study. We have collaborated with healthcare professionals, statisticians and national stakeholders which informed the educational and research programme of our group. We strongly recommend other addiction researchers and clinicians to conduct systematic reviews when faced with a puzzling question. Doing more reviews helps advance addiction science and develops addiction scientist-practitioners [22,23].

From an educational perspective, facilitating medical student research activity in family medicine through methodological advice and supervision from an addiction health-services researcher is a promising method for increasing student involvement and output in research. Curricula that utilise one-one and online interaction should be more formally evaluated in future research.

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