Towards a framework for implementing physician education in substance use disorders

Towards a framework for implementing physician education in substance use disorders

Jan Klimas, PhD, MSc [1]
Rita McCracken, MD, PhD [1]
Roy Robertson MBE, LVO FRSE [2]
Walter Cullen, MD, MRCGP, MICGP [1]

1. Department of Family Practice, University of British Columbia, 5950 University Boulevard, Vancouver, BC, Canada, V6T 1Z3
2. Centre for Population Health Sciences, Usher Institute, University of Edinburgh Old Medical School, Teviot Place, Edinburgh, UK, EH8 9AG
3. UCD School of Medicine, University College Dublin, c/o Catherine McAuley Education and Research Centre, Nelson Street, Dublin 7, Ireland

Correspondence to: Jan Klimas, PhD, MSc
University of British Columbia
David Strangway Building, 3rd floor
5950 University Boulevard,
Vancouver, BC, V6T 1Z3, Canada
Tel: (778) 945-7616
Fax: (604) 806-9044
Email: jan.klimas@ubc.ca

Keywords: Substance-related disorders; Implementation; Health professions education; Priority setting

Running head: Towards Substance Use Education Implementation Framework
Word count: 1223
Date: 4 Oct. 2021

Effective substance use disorder (SUD) treatments have been developed but a persistent gap in implementation of evidence-based therapies exists (Allen et al., 2019; Park and Friedmann, 2014). Moreover, our understanding of how to implement these treatments remains fragmentary (National Center on Addiction and Substance Abuse at Columbia University, 2000, 2012). For instance, the rising rates of opioid overdose and resistance to use of opioid agonist therapies highlight the widespread lack of knowledge about most effective opioid use disorder treatments. While recent research attributed the failure to diagnose and treat opioid use disorders partly to insufficient knowledge (National Center on Addiction and Substance Abuse at Columbia University, 2012), the broader failure to treat SUDs is a more complex matter, and is not neatly attributable mainly to individual physician knowledge or skill. Nevertheless, it is well known that better education can improve accurate diagnosis and appropriate treatment; it may also help reduce the public health epidemics that can result from improper prescribing such as the current opioid epidemic (Lembke and Humphreys, 2018; Robertson, 2020).

With educational programs for SUD specialists growing rapidly, the field is changing. Although education is a key part of the solution to the implementation problem, there is a lack of clear evidence that education is the primary driver for treatment gaps. Research demonstrates that treatment gaps are also attributable to such diverse factors as stigma, systems barriers, and social determinants of health (van Boekel et al., 2013; Volkow, 2020). Moreover, training can both hinder knowledge implementation as well as facilitate it, as observed in a recent national survey of treatment staff (N = 514) working in 285 community-based addiction treatment organizations that were funded by the Substance Abuse and Mental Health Services Administration Center for Substance Abuse Treatment (SAMHSA/CSAT) (D'Ippolito et al., 2015). Such ambiguities further

highlight the complexity of the problem and a need for a new more effective conceptual framework for knowledge transfer in postgraduate medical training (Haber, 2011).

Recent reviews of literature (Miller et al., 2001; Wilson et al., 2016) on these problems indicate that SUD science is typically situated in the final years of medical school curricula due to misconceptions about how students learn complex problems and that such misconceptions feed the lack of parity and physician advocacy in medical education. Waiting until the final phase of medical education may also interfere with medical trainees' natural development, which requires mastery of certain competencies (i.e., non-judgmental attitude toward the disadvantaged, positive regard) prior to learning about the complexity of SUD. Attitude change is a well-described phenomenon in medical education (Rezler, 1974; Woloschuk et al., 2004), whereby "idealism is replaced by cynicism as a result of the training process" (Hershey and Stoddard, 2021). However, systematic earlier exposure has not been tried because of a number of structural issues with educational policies and the organization and delivery of medical curricula. By delaying SUD instruction and limiting first exposure to crises and emergency situations, cynicism and other negative attitudes towards complex populations are solidified, and, sometimes even worsened

(Avery et al., 2017; Christison and Haviland, 2003; Meltzer et al., 2013). The result is that medical schools may be graduating physicians who have missed an opportunity to develop appropriate skills, compassion, and confidence in caring for patients with SUDs.

Aecess to education is further hindered by the lack of content on SUD in medical curricula (Barth et al., 2017). Few people would argue that the incorporation of content regarding SUDs and related conditions is sufficient in medicine and that it continues to be insufficient in all of the health professional disciplines (Ram and Chisolm, 2016). Students end up lacking knowledge about novel treatments, feeling unprepared to treat SUDs and struggle to develop the skills or interest needed to use such treatments effectively in general practice (Back et al., 2018; Kennedy-Hendricks et al., 2016; Tobin et al., 2018). These shortcomings arise from a lack of understanding of the intricacies of students' developmental cycle and the importance of the attitudinal prerequisites necessary for successful learning (Avery et al., 2017). The evidence overwhelmingly demonstrates that the presence of a supportive learning environment and clear guidance facilitate professional training (Klimas et al., 2017b). These data concord that even junior students are interested in learning about this population in primary care and want to learn more (Klimas et al., 2016); however, they lack opportunities due to limited or delayed access to the population. As shown in two recent studies, even brief SUD training experience can have lasting, positive impact on medical students (Gorfinkel et al., 2019; Klimas et al., 2017a). Therefore, our understanding of the developmental cycle in professional education should incorporate both the learner-specific and system-specific variables.

Finally, current programs overlook one process critical to use of modern effective treatments, i.e., contextual variables that modulate training effectiveness. Bates and Ellaway (2016, p. 807) compare context to dark matter: "the contexts for medical education are largely

invisible to those within them, although context can have profound influences on teaching, learning and practice." Understood from this perspective, contextual factors can include anything and everything from socio-demographic characteristics through country or culture to workload of health educators. The way we should be theoretically thinking about contextual factors is through a complex interaction between different patterns in the context. We should not see context as something static, something that can be defined, measured and simplified. Instead, we can see it as a complex network of reactions between the training and the context. Contextual factors are particularly salient in the case of complex health problems (Booth et al., 2019), such as SUD, where the implementation gap persists despite the pervasive global opioid overdose crisis. The abovementioned training initiatives have attempted to close the implementation gap by training health professionals in early recognition and interventions for SUD. Although these initiatives succeeded in increasing the number of health professionals trained in SUD, none achieved significant benefits at the level of patients' health, especially in low-resource settings that have limited access to treatment and higher burden of SUDs (Arya et al., 2019). Moreover, they have not achieved a sustained change in doctors' behaviour. Most of the initiatives overlooked contextual factors that shape the efficacy of treatment approaches emerging from the clinical trials. This is a serious shortcoming, because professional education is an inherently contextual process, which is often overlooked in curricula. Recent research on implementation has revealed that contextual factors are essential tools for translating new drugs, therapies, and treatment approaches from demonstrated efficacy to applied effectiveness (Schliep et al., 2017). Yet, the extent to which current tools used in evidence synthesis and translation and guideline development are suitable in meeting this challenge is limited (Booth et al., 2019). In order to transfer efficacy into effectiveness and widespread usage, we must first understand the process by which the science produced in

controlled research settings (efficacy) may vary from the expected effect when applied in 'messy and time-pressured' educational practice (effectiveness) (Kessler and Glasgow, 2011).

The imminent implementation or scaling up of the various training initiatives calls for an urgent examination of their methods from a contextual perspective. We have an unprecedented opportunity for the first time – and in an integrative manner – to leverage these emerging initiatives as explanatory models for diverse educational ecologies. We can and should salute the historically overlooked contextual factors and determine how they shape the actual efficacy of training programs.

Acknowledgements
An earlier version of this paper has been presented at the virtual Annual Meeting of the Universitas 21 Health Sciences Group, hosted by the University College Dublin, Ireland, August 25th, 2020 (www.ucd.ie/medicine/u21hsg2020/).

Conflicts of Interest and Source of Funding
The authors report no conflict of interest. This project was supported by funding from the European Union's Horizon 2020 research and innovate program under the Marie Skłodowska-Curie grant agreement No 701698.

REFERENCES

Allen, B., Nolan, M.L., Paone, D., 2019. Underutilization of medications to treat opioid use disorder: What role does stigma play? Subst Abus 40, 459-465.

Arya, S., Delic, M., Ruiz, B.I.I., Klimas, J., Papanti, D., Stepanov, A., Cock, V., Krupchanka, D., 2019. Closing the gap between training needs and training provision in addiction medicine. BJPsych International, 1-3.

Avery, J., Han, B.H., Zerbo, E., Wu, G., Mauer, E., Avery, J., Ross, S., Penzner, J.B., 2017. Changes in psychiatry residents' attitudes towards individuals with substance use disorders over the course of residency training. Am J Addict 26, 75-79.

Back, D.K., Tammaro, E., Lim, J.K., Wakeman, S.E., 2018. Massachusetts Medical Students Feel Unprepared to Treat Patients with Substance Use Disorder. J Gen Intern Med 33, 249-250.

Barth, K.S., Guille, C., McCauley, J., Brady, K.T., 2017. Targeting practitioners: A review of guidelines, training, and policy in pain management. Drug and Alcohol Dependence 173, S22-S30.

Bates, J., Ellaway, R.H., 2016. Mapping the dark matter of context: a conceptual scoping review. Medical Education 50, 807-816.

Booth, A., Moore, G., Flemming, K., Garside, R., Rollins, N., Tunçalp, Ö., Noyes, J., 2019. Taking account of context in systematic reviews and guidelines considering a complexity perspective. BMJ Global Health 4, e000840.

Christison, G.W., Haviland, M.G., 2003. Requiring a one-week addiction treatment experience in a six-week psychiatry clerkship: Effects on attitudes toward substance-abusing patients. Teaching and Learning in Medicine 15, 93-97.

D'Ippolito, M., Lundgren, L., Amodeo, M., Beltrame, C., Lim, L., Chassler, D., 2015. Addiction treatment staff perceptions of training as a facilitator or barrier to implementing evidence-based practices: a national qualitative research study. Subst Abus 36, 42-50.

Gorfinkel, L., Klimas, J., Reel, B., Dong, H., Ahamad, K., Fairgrieve, C., McLean, M., Mead, A., Nolan, S., Small, W., Cullen, W., Wood, E., Fairbairn, N., 2019. In-hospital training in addiction medicine: A mixed-methods study of health care provider benefits and differences. Substance Abuse 40, 207-213.

Haber, P.S., 2011. International Perspectives in Postgraduate Medical Training in Addiction Medicine. Subst Abus 32, 75-76.

Hershey, M.S., Stoddard, H.A., 2021. A Scoping Review of Research into the Origins of Cynicism Among Medical Trainees. Med Sci Educ 31, 1511-1517.

Kennedy-Hendricks, A., Busch, S.H., McGinty, E.E., Bachhuber, M.A., Niederdeppe, J., Gollust, S.E., Webster, D.W., Fiellin, D.A., Barry, C.L., 2016. Primary care physicians' perspectives on the prescription opioid epidemic. Drug and Alcohol Dependence 165, 61-70.

Kessler, R., Glasgow, R.E., 2011. A Proposal to Speed Translation of Healthcare Research Into Practice: Dramatic Change Is Needed. American Journal of Preventive Medicine 40, 637-644.

Klimas, J., Ahamad, K., Fairgrieve, C., McLean, M., Mead, A., Nolan, S., Wood, E., 2017a. Impact of a brief addiction medicine training experience on knowledge self-assessment among medical learners. Subst Abus 38, 141-144.

Klimas, J., Small, W., Ahamad, K., Cullen, W., Mead, A., Rieb, L., Wood, E., McNeil, R., 2017b. Barriers and facilitators to implementing addiction medicine fellowships: a qualitative study with fellows, medical students, residents and preceptors. Addict Sci Clin Pract 12, 21.

Klimas, J., Tobin, H., Egan, M., Tomas, B., Bury, G., 2016. General practice—A key route for distribution of naloxone in the community. International Journal of Drug Policy 38, 1-3.

Lembke, A., Humphreys, K., 2018. The Opioid Epidemic as a Watershed Moment for Physician Training in Addiction Medicine. Academic Psychiatry 42, 269-272.

Meltzer, E.C., Suppes, A., Burns, S., Shuman, A., Orfanos, A., Sturiano, C.V., Charney, P., Fins, J.J., 2013. Stigmatization of substance use disorders among internal medicine residents. Subst Abus 34, 356-362.

Miller, N.S., Sheppard, L.M., Colenda, C.C., Magen, J., 2001. Why physicians are unprepared to treat patients who have alcohol- and drug-related disorders. Acad Med 76, 410-418.

National Center on Addiction and Substance Abuse at Columbia University, 2000. Missed opportunity: National survey of primary care physicians and patients on substance abuse. Available at http://www.casacolumbia.org/addiction-research/reports/national-survey-primary-care-physicians-patients-substance-abuse Accessed on September 29, 2021.

National Center on Addiction and Substance Abuse at Columbia University, 2012. Addiction medicine: closing the gap between science and practice. Available at

http://www.casacolumbia.org/addiction-research/reports/addiction-medicine Accessed on September 29, 2021.

Park, T.W., Friedmann, P.D., 2014. Medications for addiction treatment: an opportunity for prescribing clinicians to facilitate remission from alcohol and opioid use disorders. R I Med J (2013) 97, 20-24.

Ram, A., Chisolm, M.S., 2016. The Time is Now: Improving Substance Abuse Training in Medical Schools. Academic Psychiatry 40, 454-460.

Rezler, A.G., 1974. Attitude changes during medical school: A review of the literature. Journal of Medical Education 49, 1023-1030.

Robertson, R., 2020. The opioid problem in primary care. British Journal of General Practice 70, 52-53.

Schliep, M.E., Alonzo, C.N., Morris, M.A., 2017. Beyond RCTs: Innovations in research design and methods to advance implementation science. Evidence-Based Communication Assessment and Intervention 11, 82-98.

Tobin, H., Klimas, J., Barry, T., Egan, M., Bury, G., 2018. Opiate use disorders and overdose: Medical students' experiences, satisfaction with learning, and attitudes toward community naloxone provision. Addictive Behaviors 86, 61-65.

van Boekel, L.C., Brouwers, E.P.M., van Weeghel, J., Garretsen, H.F.L., 2013. Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: Systematic review. Drug and Alcohol Dependence 131, 23-35.

Volkow, N.D., 2020. Stigma and the Toll of Addiction. New England Journal of Medicine 382, 1289-1290.

Wilson, M., Cullen, W., Goodair, C., Klimas, J., 2016. Off the record: Substance-related disorders in the undergraduate medical curricula in Ireland. Journal of Substance Use 21, 598-600.

Woloschuk, W., Harasym, P.H., Temple, W., 2004. Attitude change during medical school: a cohort study. Medical Education 38, 522-534.