This is an Accepted Manuscript version of the following article, accepted for publication in *Substance Use and Misuse.* J. Klimas, Lauren R. Gorfinkel, M. A. Hamilton, M. Lail, D. Krupchanka, W. Cullen, E. Wood & N. Fairbairn (2022) Early Career Training in Addiction Medicine: A Qualitative Study with Health Professions Trainees Following a Specialized Training Program in a Canadian Setting, Substance Use & Misuse, 57:14, 2134-2141,10.1080/10826084.2022.2137815 It is deposited under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way."

Early career training in Addiction Medicine: A qualitative study with health professions trainees following a specialized training program in a Canadian setting

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Running head: Early career training in Addiction Medicine
This is an Accepted Manuscript of an article published by Taylor & Francis in Substance Use and Misuse on 31 Oct 2022, available at: http://www.tandfonline.com/10.1080/10826084.2022.2137815.
Word Count: 4,014
Table: 1
Revised: Oct 2, 2022

ABSTRACT

Background: There has been a notable deficiency in the implementation of addiction science in clinical practice and many healthcare providers feel unprepared to treat patients with substance use disorders (SUD) following training. However, the perceptions of addiction medicine training by learners in health professions have not been fully investigated. This qualitative study explored perceptions of prior training in SUD care among early-career trainees enrolled in Addiction Medicine fellowships and electives in Vancouver, Canada.

Methods: From April 2015 – August 2018, we interviewed 45 early-career physicians, social workers, nurses, and 17 medical students participating in training in addiction medicine. We coded transcripts inductively using qualitative data analysis software (NVivo 11.4.3).

Results: Findings revealed six key themes related to early-career training in addiction medicine: (1) Insufficient time spent on addiction education, (2) A need for more structured addictions training, (3) Insufficient hands-on clinical training and skill development, (4) Lack of patient-centeredness and empathy in the training environment, (5) Insufficient implementation of evidence-based medicine, and (6) Prevailing stigmas towards addiction medicine.

Conclusion: Early clinical training in addiction medicine appears insufficient and largely focused on symptoms, rather than etiology or evidence. Early career learners in health professions perceived benefit to expanding access to quality education and reported positive learning outcomes after completing structured training programs.

Word Count: 210

***Keywords*:** Addiction medicine, medical education, qualitative research, clinician scientist

1. INTRODUCTION

The last decade has seen a rapid expansion of treatments for substance use disorders (SUD), including a variety of medications and novel treatment approaches, such as buprenorphine/ naloxone or injectable opioid agonist treatments for opioid use disorders (Bisaga et al., 2018; Day, 2018). As a result, SUD care is increasingly recognized as relevant to a range of medical and allied health specialties, including primary care, internal medicine, emergency medicine, nursing, and social work (Ayu et al., 2015; Graves et al., 2021; Koh et al., 2019).

Despite this progress and the ongoing opioid epidemic related to synthetic opioids, addiction medicine has limited implementation in clinical practice (Allen et al., 2019; Day, 2018). This topic is often not well understood by health care providers (O'Toole et al., 2008; US Burden of Disease Collaborators, 2013), and physicians report feeling unprepared to treat patients with SUDs (National Center on Addiction and Substance Abuse at Columbia University, 2012). Perhaps one of the most substantial causes for this situation is insufficient access to information regarding SUDs in health professional disciplines (Ram & Chisolm, 2016). Graduating health professionals often lack knowledge about novel treatments to effectively treat SUDs or the skills required to implement such treatments in clinical practice (Back et al., 2018; Kennedy-Hendricks et al., 2016; Tobin et al., 2018). While extensive research identified persistent deficits in SUD education in university-based programs and residencies (Ayu et al., 2015; Bahji et al., 2021; Pavlovská et al., 2018), early career training has not been fully characterized as a key phase of professional development in SUD care.

To date, only a few studies have sought to identify the particular areas of addiction medicine most lacking in early-career training, or solicited insights from specialists practicing in the field (Arya et al., 2020). In order to successfully reform SUD curricula, however, it is important

to understand the specific treatment competencies that should be targeted early in health education (Klimas et al., 2020; Pinxten et al., 2019). It is also important to understand the diverse training needs of addiction medicine care providers practicing in different settings (Arya et al., 2020). In order to inform curriculum development, set priorities for training of medical and other health professionals, and determine the necessary baseline knowledge of future clinicians, an in-depth needs assessment is needed.

The current study therefore sought to qualitatively explore experiences of early career training in SUDs among health professions learners in Vancouver, Canada. Using this information, we aimed to inform future research and provide recommendations for addiction medicine training.

2. METHODS

2.1 Setting and Participants

Accredited by The Addiction Medicine Foundation since 2013, the Vancouver's Addiction Medicine Fellowship program has grown from three trainees per annum in 2013 to be the largest in North America with 12 physician trainees in 2020 (Klimas, McNeil, et al., 2017). An additional year of training in the National Institute on Drug Abuse (NIDA)-funded International Collaborative Addiction Medicine Research Fellowship is offered annually to four competitive candidates (Klimas, Fernandes, et al., 2017). In response to the increasing demand for trained professionals, the program was recently opened to social workers, nurse practitioners and pharmacists (Callon et al., 2018; Voon et al., 2017).

We recruited and interviewed 45 addiction medicine fellows (including physicians, nurse practitioners, social workers and preceptors) and 17 medical students from the Fellowship training site based in an inner-city hospital in Vancouver. We sampled purposively to ensure diversity of trainee perspectives. Medical students who were new to the training program were oversampled

in order to increase likelihood of exposure to recent changes to medical school curricula. Most of them have also participated in the Flexible Enhanced Learning elective (FLEX) that has been shown to improve addiction medicine knowledge and aspirations to practice addiction medicine (Gooding et al., 2022). Participants were recruited through mass emails, visits at fellowship, and academic meetings (Gorfinkel, Klimas, et al., 2019).

2.2 Data collection and analysis

Qualitative interviews were conducted using a semi-structured guide covering the lifetime experiences with SUD training – from first experiences to admission into current program. The interviews lasted approximately 20-45 minutes and were part of a larger program evaluation described in detail elsewhere (Klimas, McNeil, et al., 2017). The present analysis includes specific sections of these interviews that were not analyzed previously, and which examined learning experiences prior to starting specialized SUD training. All participants provided consent and received no compensation for participating. All interviewers were completed in person, over the phone, or Skype videoconferencing software from April 2015 – August 2018.

Three researchers (JK, LG, BR) recorded and coded all interviews, using the NVivo software 11.4.3 (www.qsrinternational.com), which were transcribed by an external transcriber. As recommended by Campbell and colleagues (Campbell et al., 2017) for evaluations of addiction training programs, the Curran and Fleet's adaptation of Kirkpatrick's conceptual framework informed our coding process and learning outcome evaluations (Curran & Fleet, 2005). JK and BR first coded 26 full transcripts using directed content analysis and open coding (Klimas, McNeil, et al., 2017); LG and ML then applied the early-career training codes to the appropriate sections of 36 new transcripts through axial coding (Glaser & Strauss, 1967; Hsieh & Shannon, 2005). We

met weekly to assess code fitting and any new emergent themes. The Research Ethics Board at Providence Healthcare Research Institute, University of British Columbia approved this study.

3. RESULTS

3. 1. Insufficient Time Spent on Addiction Education

We interviewed 62 participants from the 2015–2018 training cohorts (Table 1). Participants overwhelmingly reported that their prior SUD education throughout both medical school and residency was lacking, with many citing a general lack of time and attention given to this training.

> "In medical school, it [SUD education] is just an overview. We got maybe 2 - 3 lectures in total." [Participant 50, Medical Student]

> "In my internal medicine core training, there is no attention given to addictions medicine at all [...] I have had to seek out addictions training opportunities. That is just not something that is part of what we do." [Participant 25, Clinical Fellow]

An awareness of the high prevalence of SUDs compelled some participants to openly identify training as insufficient, while others framed this criticism as "missing the basics."

> "I just finished medical school five years ago [and] there's very, very little education in this area of medicine … Every single doctor would see someone with an addiction regardless of what area of medicine they're working in, and we get zero education around that area." [Participant 1, Research Fellow]

Some reported receiving basic training in SUD care, but conveyed that it was largely insufficient due to the system being "set up" in a way that prevented thorough training in this area.

> "Our lectures are only 45 minutes, there is only so much you can say. They [Lecturers] would say opioid agonist therapy exists and that was it. It's just how it is set up. I don't think there is enough time devoted to it." [Participant 48, Medical Student]

3. 2. A Need for More Structured Addictions Training

In addition to reporting a general lack of attention to SUD treatment, participants reported that the learning opportunities they did receive during postgraduate training were largely unstructured.

> "Formal training would have been nice but again you're in a circumstance [residency] where there was no possibility of formal training… it would have been very nice if there was a more structured training environment." [Participant 36, Visiting Student]

Some participants highlighted that, without structured training, the onus to learn addiction medicine was on them. This was accompanied by frustration, as participants were left to organize their own "self-guided" and informal training experiences.

> "I went out and sought my own educational experiences, so the difference was one was formal – the fellowship was a formal program, and before that, it had been informal, self-guided." [Participant 22, Clinical Fellow]

Due to the complexity of addiction medicine, the self-guided nature of this training was described as unsuitable. The differences between addiction medicine and other specialties were perceived as inequitable due to an absence of specific training programs.

> "People don't often realize that addiction on its own is a very complex field, and, without specific training programs, it's difficult to expect trainees to just pick things up as they go. You wouldn't expect a cardiologist just to learn cardiology as he goes through internal medicine residency." [Participant 26, Clinical Fellow]

Participants also criticized the inaccessibility of SUD teaching within the existing training programs.

> "…there's really not a lot of family practice level addictions training that's accessible." [Participant 19, Medical Student]

Many participants reported that a lack of knowledge about training opportunities contributed to this inaccessibility, while others reported factors such as insufficient financial resources, a shortage of experts to deliver this training and poor infrastructure for existing training programs.

> "Doing a research fellowship is a privilege if you're able to. […] You're going to make less money. And if you already come from a situation where you're in a lot of debt early in your career, it's not a luxury you can have." [Participant 55, Research Fellow]

> "We need more people with expertise and that gap in the training is extremely evident, and it's there: within psychiatry, or addiction, or family, or internal [medicine]." [Participant 33, Clinical Fellow]

> "I did an elective in [city] for a month on the General Medicine Board… where the addiction medicine infrastructure really isn't there. Not anywhere close to like it is at [hospital]." [Participant 57, Clinical Fellow]

3. 3. Insufficient Hands-On and Clinical Skills Training

A general sense of limited opportunity for clinical training and hands-on learning was expressed by many participants. For instance, learners referred to specific missing areas, such as concurrent disorders as being "incredibly important for addiction medicine." Participants highlighted that any clinical training they had previously received was oriented on theory, rather than skill development which they achieved later in the clinics, or on the wards.

> "The experience here was enriched by not only the fact that you got to hear some of the core addiction theory, and discussions over didactic presentations, but then you got to see it play out in the clinic and on the wards." [Participant 47, Medical Student]

Some participants expressed that opportunities to receive hands-on clinical skills training were not prioritized during medical school and residency, although these skills are very important for practice.

> "the hands-on experience of actually seeing patients, trying to determine doses, and looking at urine drugs screens, or other blood work – you can't really replace that lived experience." [Participant 50, Medical Student]

The usefulness of learning clinical skills, such as motivational interviewing, for application of knowledge in treatment settings was highlighted.

> "It [motivational interviewing] is just grazed upon in residency, not touched upon at all in medical school, but it's such a useful component… in addiction medicine. It's applicable to nearly every client at some point in their treatment. It becomes a really useful skill, and it isn't pushed very hard in the biomedical model, which is where we [medical residents] are coming from." [Participant 33, Clinical Fellow]

In the rare instances when previous training included hands-on experiences, it was focused on singular procedures or aspects of the specialty, rather than a more comprehensive training.

> "The [training] experience I had in [country] was great… but it was a very focused practice, which is methadone, which is just one aspect of addiction medicine." [Participant 39, Clinical Fellow]

3. 4. Lack of Patient-Centeredness and Empathy in Clinical Training Environments

A number of participants highlighted the need for more emphasis to patient perspectives on treatment, and the underlying causes of addiction, which were not in early-career training. Participants noted that "the root of the problem was never addressed," in undergraduate education or medical school, and nobody took "ownership" of the problem as a healthcare provider. This was often accompanied by frustration at the implicit bias present in teaching in clinical training environments, and a perception that early-career training did not sufficiently emphasize patients' needs.

> "There's a lot of implicit bias in health care around how we treat patients with substance use disorders, how we approach them… something like not offering Hepatitis C treatment to somebody who continues to inject drugs is a perfect example, as a blanket policy that's not based on any data, and it's really unfair to a person with a substance use disorder, but we see it all the time." [Participant 57, Clinical Fellow]

Particularly, students were not taught to consult patients who sought medical care for substance-use related complications (e.g., liver failure) about the root causes of these complications (i.e., alcohol use disorder).

> "Before, I really didn't think [that] the person in front of me has an alcohol use disorder. [Now] I wonder if there's a history of trauma, or what the underlying mental health condition is, or what their story is." [Participant 53, Clinical Fellow]

This was also often accompanied by feelings of inadequacy and believing that addressing symptoms alone was insufficient for effectively treating SUDs.

> "As an intern, you see people with addiction issues all the time and you write addiction consults or discharge pending addictions and you're like: *"well, I'm not addressing that [the addiction] at all,"* and that's the main driver of this person [patient] being there. I kind of feel inadequate." [Participant 43, Clinical Fellow]

3. 5. Insufficient Implementation of New Evidence-Based Medications because Ideology, Personal and Outdated Professional Views Override Science

Many participants observed during clinical placements that there was limited exposure to scientific evidence for new SUD medications. This was closely tied to reports that, while in early medical education, participants did not know that scientific evidence existed for SUD treatment. The perceived reasons for this lacking knowledge included a combination of outdated practices, ideology, staff and systemic issues, as well as regional differences between countries and Canadian provinces.

> "I was at a private hospital [abroad]. I didn't have anything to compare it to at the time but if I look back on it I think it was fairly underwhelming because they were prescribing things like Antabuse at the time and nothing else... In one of the communities [abroad], there was no methadone happening and no needle exchange in a large part because the local family doctors were not on board with it." [Participant 33, Clinical Fellow]

In prior training, many participants were taught to use outdated practices.

> "They [clinic] still pay an acupuncturist as part of the addiction services and there's evidence that acupuncture can work for pain. There's not a lot of evidence that acupuncture works for addiction." [Participant 30, Research Fellow]

The use of outdated procedures was seen to be, in part, a result of staff anxiety in the absence of new protocols.

> "I wanted to start using a medication for alcohol use disorder that we [hospital staff] are not currently using but there's some really great evidence for it right now. We're using it in the hospitals and it made a lot of the staff that had to administer it a little bit anxious because there was no preprinted protocol for it." [Participant 19, Medical Student]

For treatment of patients who had opioid use disorders (OUD), trainees perceived how clinicians' personal beliefs and ideology played a role in non-implementing pharmacotherapies recommended by new clinical guidelines.

> "There are physicians in the community who do not believe in slow-release oral morphine as a treatment option, despite two randomized controlled trials. And that's where the ideology comes into place. People think that either you do methadone and you do well, or you don't - and that's your own problem." [Participant 55, Research Fellow]

In addition to the ideology and attitudes of preceptors, the trainees noted their own anxieties. Reports of feeling challenged by and unprepared to incorporate SUD research into practice and apply novel unorthodox practices in clinical care accompanied these statements.

> "Finishing training and residency, moving forward, the idea of incorporating research [SUD] into my practice was … not even on the radar at all." [Participant 1, Research Fellow]

3. 6. Prevailing Stigmas towards the Field of Addiction Medicine, as a "soft science," without Many Treatment Options

The way in which addiction medicine is perceived as a "soft science" in early-career training was also mentioned, and identified as a potential barrier to entering the field.

> "With the depth of literature that does exist, [addiction medicine] is not a soft science and I think it's pitched as a soft science to medical students." [Participant 19, Medical Student]

These criticisms were closely related to the aforementioned missing teaching about the evidence for SUD treatment, with participants reporting that they had been unaware of the scope of evidence within addiction medicine prior to the fellowship training.

> "I think it [addiction medicine] is a specialty that's under-represented across the board. I think there's a number of reasons for that. I think stigma certainly persists, and that's a part of it."
>
> "The perception, in addiction medicine, is that we [physicians] don't have a lot of treatment [options]. I would disagree with that, but I think that's probably the common perception." [Participant 57, Clinical Fellow]

Ultimately, the result of missing evidence in curricula and negative misconceptions was a sense that addiction medicine was 'unscientific' or non-academic, a reputation which may be discouraging when trainees practice in different clinical environments.

> "[Addiction medicine] is something that's looked upon by many other physicians, especially internists, as something that's very difficult, very socially challenging, and not quite as academic, and maybe more social than other areas in medicine." [Participant 52, Clinical Fellow]

> "There's a lot of people who are in internal medicine who say: *Why would you do addictions? That's something psychiatrists do."* [Participant 25, Clinical Fellow]

> "It can be discouraging when you go to different clinical environments and people [clinicians] don't appreciate how important it is to treat addiction." [Participant 27, Nursing Fellow]

Further, participants were concerned with the impacts of stigma and discrimination on the care of people who use drugs. Having completed the structured training programs, participants recognized the important role educators have in reducing stigma and the power of deconstructing what "you think you know about addiction and treatment, and building that back up based on evidence and facts to make sure that you are not making assumptions about the field."

4. DISCUSSION

In this qualitative study of trainees recruited from one SUD training site implementing structured Addiction Medicine Fellowship programs, early-career SUD training appeared insufficient, and largely focused on symptom management, rather than etiology or evidence. Often, this was attributed to the poor exposure to relevant research throughout early-career training. Participants perceived benefits to increasing access to quality education and reported positive learning outcomes after completing structured training programs later in their careers, suggesting expanded SUD curricula should become common practice.

The present analysis further elaborates on the conclusions of our previous study (Klimas, Small, et al., 2017), which reported on initial experiences from undertaking the specialized addiction medicine training, and which indicated that substance-use "education in medical school was largely perceived as inadequate," and the relevant content "was not regularly tested in standard training" (Klimas, McNeil, et al., 2017). More specifically, the current findings are in reference to learning experiences before starting formal SUD training and offer suggestions for reforms to curricula and the development of SUD training programs for health professionals. As our interviews suggest, training programs should seek to expand SUD education. Exposing educators to new innovations in addictions may meaningfully reduce barriers to accessing SUD education around the globe, while aiming for rapid uptake of novel effective treatment methods. Finally,

current programs overlook processes critical to use of modern effective treatments: stigma, systems barriers, and social determinants of health (Klimas et al., 2021). These processes modulate training effectiveness and must be understood to better address the themes in SUD education identified by our interviews.

Our finding that there is a need for expanded SUD teaching aligns with a number of early reports emphasizing the need for improved training in addiction medicine throughout medical school, nursing and residency programs (Miller et al., 2001; Rasyidi et al., 2012). Indeed, to date, numerous physicians and researchers have called for expansion of SUD education (Klimas, 2015; Wood et al., 2013), leading to novel online training programs and medical curricular development internationally (Arya et al., 2020; Klimas et al., 2020; Scheibein et al., 2021). In response to these recent calls, and the shortage of clinicians for tackling the ongoing illicit-drug related poisoning epidemic in Canada, the Association of Faculties of Medicine launched online modules on pain management, opioid stewardship and SUD for medical students (Graves et al., 2021).

However, our interviewees also highlighted a growing appetite among trainees for speaking with patients about their SUDs and treatment during medical training. Indeed, prior clinical research has demonstrated that incorporating patient-centered care is associated with improved treatment outcomes, and SUDs are no exception (Stewart et al., 2000). For example, a qualitative study with 29 patients prescribed buprenorphine for OUD found that patients preferred office-based treatment over opioid treatment program (OTP) because it allowed for a perceived sense of trust, listening, empathy, and respect from care providers (Korthuis et al., 2010). The authors ultimately concluded that a patient-centered approach could contribute to greater engagement in recovery (Korthuis et al., 2010). Recently, the pandemic necessitated further patient-centeredness (Scheibein et al., 2021), as many settings have extended take-home dosing

for OUD medications, and telemedicine is expanded (Figgatt et al., 2021). When and where it is safe to do so, hands-on experiential training should be provided to learners, as it has been suggested that “enhancing the community placement of medical students and residents will greatly improve the health and well-being of marginalized populations” (Jozaghi et al., 2019). This is especially important in the light of persistent inequitable practices in addiction medicine (Goodman et al., 2017). Early career training has an opportunity to improve clinical practice through training that addresses how racial stereotyping affects the addiction care and treatment received by people experiencing structural vulnerabilities.

Our findings also indicate a need for training programs to teach more scientific evidence for SUD treatment. Educators should make themselves aware of the recent developments in this area through continuing medical education or specialized online training programs, many of which are free of charge (Gorfinkel, Giesler, et al., 2019). As this field continues to face a high level of stigma among health care providers (Cornfield & Hubley, 2020; Volkow, 2020), presenting relevant research during early medical education may serve to offset perceptions of addiction treatment as ‘soft’ or ‘unscientific’. Still, as only a few studies to date have examined the impact of early career exposure on later practice, this hypothesis warrants further investigation (Klimas et al., 2021).

Several limitations are noted. First, because the population was a convenience sample of health professionals and health professions trainees from one training site, and the inter-rater agreement coefficient was not calculated, generalizability of their views expressed is unclear. Second, many participants interviewed were trainees in an immersive fellowship that involved a research component. Participants’ comments regarding scientific evidence may therefore be a result of their particular interest in research, rather than a flaw of medical curricula. Medical

students were slightly over-sampled in this study because they were more frequent in the training program. Finally, participants may have been inaccurate or excessively negative in their self-reports of early training due to recollection bias. Because many of the participants specialized in addiction medicine, certain knowledge or skills may be viewed as more necessary than they would be to non-specialists. Nevertheless, it could be argued that this limitation may also be this study's greatest strength, since these health professionals are well-positioned to understand the core competencies in addiction medicine which are lacking in early-career training.

In a field so rapidly evolving and still limited in implementation, it is critical that health-professions curricula educate future healthcare providers in evidence-based SUD treatment. Early-career education may meaningfully benefit from emphasizing a more patient-centered approach, elucidating the evidence behind novel treatments, and introducing SUD topics earlier in training. Future studies should explore whether these findings are generalizable to other training sites, other types of learners, and assess larger samples to quantify patient-level outcomes resulting from expanded curricula.

Table 1: Demographics of interviewees undergoing specialized addiction medicine training (n = 62)								
		Fellowship Program Trainees						
	Total (n=62)	Physician stream (n=27)	Physician-scientist stream (n=6)	Social work stream (n=2)	Nursing stream (n=7)	Medical students (n=15)	Visiting medical students (n=2)	Faculty (n=3)[§]
Age at interview								
(Mean)	33	32	37	42	36	27	32	43
Gender								
Female (%)	33 (53%)	13 (48%)	4 (67%)	0 (0%)	5 (71%)	7 (47%)	1 (50%)	3 (100%)
Specialty (n=37)*								
Family Med	18 (49%)	13 (48%)	3 (50%)					2 (66%)
Internal Med	6 (16%)	6 (22%)	0 (0%)					0 (0%)
Psychiatry	3 (8%)	3 (11%)	0 (0%)					0 (0%)
Public/Community Health	2 (5%)	1 (4%)	1 (17%)					0 (0%)
Not Available	8 (22%)	4 (15%)	2 (33%)					1 (33%)

* Residents and Faculty; § Status at the time of the interview; All faculty physicians graduated from the fellowship program; Physician-scientist stream is the International Collaborative Addiction Medicine Research Fellowship; Med = medicine

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