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Research Paper

‘It's too much, I'm getting really tired of it’: Overdose response and structural vulnerabilities among harm reduction workers in community settings

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ABSTRACT

Background: In response to the devastating overdose epidemic across Canada, overdose education and naloxone distribution programs (OEND) targeted at people who use drugs have been scaled-up. The ways in which people who use drugs (PWUD) – who experience social and structural vulnerabilities due to their drug use – enact advice from these health education campaigns remains underexplored. This study examines structural vulnerabilities that constrain PWUD as they attempt to implement OEND program advice.

Methods: Data were drawn from an ethnographic study of “Satellite Sites”, a program where PWUD are employed by a community health center to operate satellite harm reduction programs within their homes. Data collection included participant observation within the Satellite Sites, complemented by semi-structured interviews and a focus group with Satellite Site workers. Thematic analysis was used to explore impacts of responding to overdose.

Results: OEND advice includes not injecting alone, carrying naloxone, and calling 911 if overdose occurs. The ability of Satellite Site workers to respond according to public health guidelines is complicated by contextual and structural factors, including a lack of supervised injection services, vulnerability to eviction, and continued criminalization of drug use. Participants described how responding to increasing numbers of overdoses was stressful, with stress compounded by their close relationships with those who were overdosing. These factors were impacting the willingness of Satellite Site workers to continue to supervise drug use.

Conclusion: OEND programs are essential and effective; however, they are a response to a crisis within a policy and legal environment framed by the criminalization of drug use. Efforts to expand access to complementary interventions, such as supervised injection services, safer supply interventions, and protection against evictions, are necessary to complement OEND programs and address multiple contextual factors within the risk environment for overdose. Additionally, criminalization will continue to impede and constrain the public health response to drug use.

Introduction

North America is in the midst of a devastating drug poisoning and overdose epidemic; it is estimated that 3998 people died in Canada of opioid-related overdose in 2017, a death rate of 10.9 per 100,000 (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2018). In response to this crisis, public health education programs consisting of overdose education and naloxone distribution (OEND) have been scaled-up to facilitate overdose response in the community. Naloxone is an opioid antagonist medication that quickly reverses the effects of opioid overdose if administered soon after overdose onset. OEND programs are premised on the idea that having naloxone easily available within community settings, allows for friends, family, and members of the general public to be able to intervene and reverse the life-threatening respiratory depression that characterizes opioid overdoses (Green, Heimer, & Grau, 2008). However, OEND programs are primarily aimed at people who use drugs (PWUD), who experience high levels of stigma, as well as social and structural vulnerabilities that stem from or intersect with the criminalization of drug use (such as poverty, repeated interactions with the criminal justice system, and housing insecurity) (Quesada, Hart, & Bourgois, 2011; Rhodes et al., 2011). This paper explores a unique intervention, where PWUD are hired as harm reduction workers to run ‘satellite’ harm reduction programs from their homes, and examines how they enact OEND program advice within these community settings where people gather to use drugs. OEND programs are effective and life-saving,

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providing PWUD with crucial tools to respond to overdose; however, these programs are implemented amidst the continuing criminalization of drug use, a major contextual factor that frames the risk environment in which overdose, and overdose response, occurs. Our analysis examines how criminalization exacerbates the structural vulnerabilities faced by PWUD as they respond to overdose, constraining their ability to implement OEND program advice. Additionally, we explore how continuing stigma against drug use contributes to structural vulnerability and limits the availability of support for the trauma and burnout experienced by PWUD who are responding to multiple overdoses.

Structural violence and structural vulnerability

Structural violence and structural vulnerability are two inter-related concepts that address how social, economic and political forces structure the potential for or experience of suffering and harm, and negatively impact health outcomes (Bourgois, Holmes, Sue, & Quesada, 2017; Farmer, Nizeye, Stulac, & Keshavjee, 2006). Structural violence describes the phenomena where social arrangements and large-scale social forces – such as gender and racial inequalities, as well as income inequality and poverty - impose disproportionate injury and suffering on certain people and population groups (Farmer, 2004; Scheper-Hughes, 2003). It highlights how suffering and harm are produced by structural and institutional forces, rather than being the result of an individual's actions or choices (Farmer et al., 2006). The related concept of 'structural vulnerability' highlights the patterned way in which vulnerability to harm or suffering is imposed on and constrains individuals or members of a defined population group due to their social location or 'positionality' within hierarchical social structures (Quesada et al., 2011). Here, the focus is on the ways in which demographic and socioeconomic characteristics interact with various sociocultural factors and policy trends (such as notions regarding who is deserving of treatment, or the stigma surrounding drug use and the way this influences treatment within healthcare settings), such that an individual's vulnerability to suffering varies based on their position within social, political, economic and institutional structures (Bourgois et al., 2017). Together, these concepts give focus to how the structural contexts surrounding drug use – including the laws that criminalize drug use and the policies that flow from these laws - produce vulnerability to an array of drug and health-related harms, and reflect dominant power structures that normalize these harms as the natural consequences of drug use.

There is accumulating evidence for the criminalization of drug use as a structural risk factor with impact on health outcomes, with particularly negative impacts on HIV prevention and treatment (Debeck et al., 2017; Wolfe, Carrieri, & Shepard, 2010; Wood et al., 2010). Drug use is located at an uneasy nexus of medicalization and criminalization, with the medical system claiming 'substance use disorders' as medical issues requiring treatment, while the criminal justice system criminalizes the possession and use of many psychoactive drugs, exposing PWUD to arrest, criminal charges, and incarceration (Conrad & Schneider, 1992). Previous research has highlighted how the vulnerability of PWUD to health conditions such as HIV can arise from a "complex system of interactions" between individuals, the social structures within which they find themselves, and their environments, a framework referred to as the 'risk environment' (Rhodes, 2009; Rhodes et al., 2011). In this way, structural vulnerabilities are akin to the social determinants of health, in that they both highlight the ways in which agency is constrained while vulnerability to negative health outcomes for PWUD is exacerbated by 'upstream' forces and social, economic and political processes such as income inequality, housing instability, gender or racial discrimination, and histories and continuing experiences of colonization, which differentially affect people positioned at particular social locations (Bourgois et al., 2017; Rhodes et al., 2011). As structural vulnerabilities and structural violence are embedded in social structures (Rhodes et al., 2011), they provide a method of examining how laws criminalizing drug use, and institutional policies influenced by those laws, can shape the experiences of PWUD as OEND programs are scaled-up to address the overdose crisis and are consolidated within public health programming.

Origins and impacts of overdose education and naloxone distribution programs

OEND programs targeting people who use illicit drugs pre-date the current opioid-overdose crisis, having emerged in the late 1990s in Chicago and parts of Europe (Dettmer, Saunders, & Strang, 2001; Maxwell, Bigg, Stanczykiewicz, & Carlberg-Racich, 2006). They rely on the idea of mutual aid, employing the social networks of PWUD to reach populations at high risk of overdose and provide them with the tools to intervene directly when an overdose occurs (Faulkner-Gurstein, 2017). As such, OEND programs capitalize on the fact that PWUD have long been the first line of response when their peers experienced overdose (Green et al., 2008). While several of the original OEND programs emerged from organizations that have strong representation among PWUD, including the Chicago Recovery Alliance (Maxwell et al., 2006), there has been much recent interest in OEND by public health authorities, and program expansion has occurred in reaction to the overdose crisis as an attempt to reduce overdose-related mortality (Fairbairn, Coffin, & Walley, 2017). This situation is broadly similar to the evolution of needle and syringe programs and supervised consumption services (Friedman et al., 2007), where OEND programs developed by and for PWUD are becoming firmly ensconced under the purview of public health authorities as a means to address a public health crisis.

As OEND programs have been scaled-up, there has been little attention paid to the ways in these programs – as a structural intervention within the risk environments where overdose occurs - may interact with the structural vulnerabilities faced by PWUD as they attempt to respond to overdose. For example, OEND programs provide training on overdose prevention, recognition and response, and commonly focus on several factors, including the following messages: (1) Don't use drugs alone; (2) Carry naloxone; and (3) Call paramedics for emergency response in case an overdose occurs (City of Toronto, 2019; Health Canada, 2019b,c; Towards the Heart, 2019). Recent Canadian materials also include reference to Good Samaritan legislation which provides protection against prosecution for simple possession for those at the scene of an overdose (Clark, Wilder, & Winstanley, 2014; Health Canada, 2019a,b). This legislative change was made to address documented hesitation among PWUD to contact emergency services during overdose events because of the criminalization of drug use (Koester, Mueller, Raville, Langegger, & Binswanger, 2017). It remains unclear whether the legal and policy changes that enabled the roll-out of OEND programs impact the structural vulnerabilities faced by PWUD.

Several evaluations demonstrate that OEND programs are effective, and that PWUD and those in their social networks can successfully administer naloxone during opioid overdose events (Clark et al., 2014; Doe-Simkins, Walley, Epstein, & Moyer, 2011; Green et al., 2008; Tobin, Sherman, Beilenson, Welsh, & Latkin, 2009). Some research suggests that widespread roll-out of naloxone distribution in targeted geographical areas is responsible for significant reductions in overdose-related mortality (Maxwell et al., 2006; Walley et al., 2013). Reports document that some PWUD report a sense of heroism and pride at being able to intervene successfully in overdose and save a life (Marshall, Perreault, Archambault, & Milton, 2017; Wagner et al., 2014). However, negative emotional responses, including reports of burn-out, vicarious trauma, and feelings that responding to overdose is a burden due to the stress involved, have also been recorded among people who frequently respond to overdose (Bardwell, Fleming, Collins, Boyd, & McNeil, 2018; Marshall et al., 2017; Wallace, Barber, & Pauly, 2018). While there is early recognition that resources for addressing

these negative emotional reactions are necessary for frequent responders, this has mostly been focused on professionals, such as paramedics, in highly affected areas (Johnson, 2017). There are few resources available that address the stress and negative emotional reactions faced by PWUD who respond frequently to overdose (Shearer, Fleming, Fowler, Boyd, & McNeil, 2018).

Barriers to calling for emergency help

There is a substantial research base documenting that fear of police involvement and arrest is one of the major barriers to calling for emergency help in overdose situations (Bennett, Bell, Tomedi, Hulsey, & Kral, 2011; Davidson et al., 2003; Koester et al., 2017; Wagner et al., 2014). In an attempt to address this, several jurisdictions in North America have implemented 'Good Samaritan' legislation, where people who contact emergency responders at the scene of an overdose receive some legal protections from prosecution for drug-related charges (Davis, Webb, & Burris, 2013). In Canada, the 'Good Samaritan Drug Overdose Act' was passed in 2017, and provides protection against prosecution for simple drug possession to those at the scene of an overdose (Health Canada, 2018). Limitations of this legislation are that it only provides protection for a small range of drug-related offences (such as simple possession), and often does not extend protection to people on parole or probation, therefore many PWUD remain vulnerable to arrest and criminal charges if they contact emergency services during overdose incidents (Koester et al., 2017; Latimore & Bergstein, 2017a). The limits of Good Samaritan legislation highlight the tensions between criminalization and medicalization in the attempt to respond to the overdose epidemic, and expose the ways in which OEND programs – being implemented to save the lives of PWUD amidst continuing criminalization of drug use - might influence structural vulnerability within the risk environments where people use drugs. This study examines how structural vulnerabilities and the continuing criminalization of drug use constrain PWUD as they attempt to implement the public health advice contained in OEND programs.

The Satellite Sites

Data were drawn from an ethnographic study of "Satellite Sites" in Toronto, Canada. The Satellite Site program is operated by a community health center with a large, in-house harm reduction program. In order to expand the temporal and geographic reach of their program, the community health center employs Satellite Site workers (SSW) in the community. SSW are PWUD who are trained to operate small, satellite harm reduction programs within their homes (Strike & Kolla, 2013). The Satellite Site program is based on a secondary distribution model where harm reduction equipment and supplies are distributed throughout the community to people who may be unwilling or unable to access traditional harm reduction programs. SSW are paid staff of the community health center in recognition of the work they are performing (Anderson, Clancy, Flynn, Kral, & Bluthenthal, 2003; Bryant & Hopwood, 2009; Strike et al., 2013). Sites are chosen because they are already well-known within the community of PWUD, and represent convenient locations to pick up sterile drug use equipment and supplies. SSW decide how to operate their individual sites, including whether they wish to allow clients to consume drugs onsite, and whether they sell or allow drugs to be sold onsite. SSW receive compensation in the form of a $250CAD stipend per month and a paid cellular telephone, and attend regular training sessions on topics related to their work.

Methods

This ethnographic research was designed and implemented in collaboration with SSW, using a community-based research approach. The first author had worked extensively with the harm reduction program prior to this study, and was well-known to SSW after conducting a previous evaluation of the program (Strike & Kolla, 2013). Following research ethics board approval from the authors' institution, all SSW were invited to attend an information meeting about the study and offered the option of participating - or not - without repercussions on their employment with the community health center. Those SSW who were interested provided informed consent for observation in their site. In line with the research ethics protocol, they could opt-out of site visits, ask the researcher to leave during visits, or withdraw from the study at any point. All Satellite Site visits were arranged in advance by the Satellite Site Coordinator, an employee of the community health center responsible for supervision of the Satellite Site program, who is also a peer. The Satellite Site Coordinator was present during all research visits to the Satellite Sites. SSW were provided with a $20CAD honorarium at each visit, and agreed to inform all Satellite Site clients present during observation visits of the research study using a short script.

Sequential interviewing was used to guide sampling. In this approach, multiple 'cases' are sequentially observed and interviewed until saturation is reached (Small, 2009). In total, 57 observation visits to Satellite Sites were conducted, beginning in September 2016 and ending in March 2017. Visits occurred once or twice weekly between 4:30pm and 1am and were conducted on different days of the week to capture variation between weekday/weekends. Field notes on observations were recorded immediately after leaving sites, and expanded upon in detail the following day, using principles outlined by Emerson (Emerson, Fretz, & Shaw, 2011). Due to the criminalized nature of activities, data collected in fieldnotes were anonymized, including the names of participants and the locations of the Satellite Sites.

Seven Satellite Sites were visited on a regular basis; two were in privately-owned apartment buildings, and five were located in subsidized social housing complexes. The closest Satellite Site was located 2 km from the sponsoring community health center, and the farthest was located 11 km away. The SSW running these sites included six individuals and one couple. Three of the SSW were men and five were women, all were aged between 45 and 70 years, injected drugs regularly (although their drugs of choice varied), and received much of their income from government social assistance programs.

In addition to participant observation, one-on-one interviews with SSW were conducted outside of field visits as a method of complementing and expanding upon the observations and informal conversations that occurred within the Satellite Sites. Five SSW who participated in frequent observation visits were interviewed twice; the first interview took place prior participant observation visits to explore their reasons for joining the Satellite Site program and issues faced during their work. The second interview occurred at the end of participant observation and was used to expand on and clarify issues and themes that arose during observations. Following informed consent, interviews were audio-recorded, and all interview participants were offered a $20CAD honorarium. Of the SSW interviewed, two were men, and three were women, aged between 51 and 70 years. They all injected drugs regularly.

In addition, a focus group was held with four SSW and the Satellite Site coordinator after completion of data collection and once the initial round of thematic coding was concluded by the lead author. Four participants were women and one was male, aged between 51 and 70 years. The focus group functioned as a form of member-checking, with initial themes and preliminary findings presented to participants for discussion, development, and as a means to help refine themes further. All participants provided separate consent for the focus group and were offered a $20CAD honorarium.

Data analysis

Data analysis was guided by a theoretical approach which aimed to foreground the ways in which structural and social forces influence individual actions that are often viewed (and framed) as individual-

level risk behaviors (Campbell & Shaw, 2008; Rhodes, 2009; Rhodes & Moore, 2001). This approach focused on the way that laws and institutional policies encountered by PWUD might constrain and shape their experiences. Dedoose qualitative analysis software was used for data management and coding (www.dedoose.com). Field notes and interview data were analyzed using an iterative process guided by thematic analysis (Braun & Clarke, 2006). Beginning in the early stages of participant observation, field notes were coded for key themes. As data collection progressed and interviews were conducted, emergent themes were categorized, and in subsequent iterations of coding, themes were refined, and portions of data were recoded. Overdose and overdose response were key thematic areas as the frequency of overdoses increased in late 2016. Discussions in the second round of interviews with SSW (held in February 2017) and in the focus group (held in June 2017) revolved around overdose due to the deaths of several community members around the same time as these data collection activities. A key theme to emerge in the group discussion was the complexity of responding to overdose according to the advice presented in public health campaigns on OEND, and how this was resulting in unforeseen issues for SSW. Close attention was paid to social and structural factors related to overdose response in further iterations of coding; this highlighted the ways that public health advice on overdose shaped experiences "on the ground". All names presented here are pseudonyms; any details that might have potentially identified a participant have been altered.

Findings

Public health authorities across Canada have issued advice and scaled-up OEND to attempt to prevent overdose-related fatalities. All the SSW study participants had received training on OEND from a program developed by Toronto Public Health, the municipal public health authority (Leece et al., 2013), and had naloxone at their Satellite Sites. Findings are organized by the three common components of OEND program advice which intersect with, and sometimes exacerbate, some of the structural vulnerabilities faced by PWUD: (1) Advice not to use drugs alone; (2) Administration of naloxone to reverse overdose, and; (3) Instructions to call 911 for paramedic response when a person overdoses (City of Toronto, 2019; Health Canada, 2019b,c; Towards the Heart, 2019). Our final theme explores the lack of attention given to structural factors influencing overdose within the environments where OEND programs are implemented.

Don't use drugs alone

Information from coroners' investigations into overdose deaths in British Columbia, Canada, found that a minimum of 69% of people who died of overdose had used alone (BC Coroners Service, 2018). Consuming drugs alone in a location where intervention is not readily available could be considered a risk environment for overdose (Rhodes, 2009). While the primary purpose of the Satellite Sites is the distribution and disposal of harm reduction equipment, many Satellite Sites allow clients to inject drugs on site. Participants framed this as providing a safer environment that reduces overdose risk as it allows for a quick response in case overdose occurs:

> "It's a safe place. It's wonderful because for people in the area, who need any supplies, they can just get it from us, right? 'Cause most of the places are closed, and a lot of the people are homeless too. So, it's really convenient for them, and it's safer, if they have to inject or do anything like that, at least we're there. If they're by themselves, with the risk of them overdosing, we're there to watch them, right?" *(Interview with SSW)*

Due to their proximity to drug use, SSW had extensive experience of responding to overdose prior to this current crisis. However, the increased contamination of the drug supply with illicitly-produced fentanyl and fentanyl-analogues has led to SSW having to respond to a much higher number of overdoses than ever before and they repeatedly spoke of how stressful this was:

> "Like, I've had three ODs in one week, like, give me a fucking break. You know? I'm exhausted after, right? It's like emotionally, you're exhausted. Physically, you're okay, but emotionally, I'm stressed now." (*Focus Group with SSW*)

The stress of intervening in an escalating number of overdose situations was leading SSW to question the practice of allowing people to inject in their satellite sites. At the time of this study, there were no authorized supervised injection services (SIS) in Toronto to which SSW could refer their clients if they did not want to allow injections:

> "One of the problems I have is a lot of service users are my friends. And I don't particularly like to use alone, just because, I think that's not safe. For me now, it's a dilemma, because I don't want people to use in my house, cause of all the overdoses. But, it's a really fine line. I think it's a great thing to be able to provide a safe place for someone to use. But it's been hard, and so I'm having to take a little bit of a harder line, which is not easy for me." *(Focus Group with SSW)*

Advice not to use alone ignores the problem that the person who is supervising injections may have to intervene in a stressful and potentially traumatic situation. At the beginning of the study all 7 Satellite Sites that were visited frequently allowed close friends and family members to inject onsite, with 4 also allowing acquaintances to do this. However, due to the increasing number of overdoses, SSW were becoming more ambivalent about allowing injections in their sites, feeling torn by a desire to continue assisting community members to stay safe, while wanting to protect themselves against stress and trauma generated by events surrounding overdose response. During the study period, one SSW decided to stop allowing acquaintances to inject at their site with a second (the speaker above) considering limiting access.

Additionally, SSW also expressed worries that responding to overdose may have repercussions for their ability to maintain their housing:

> "Seriously, if someone ever dies at my place, I'm screwed, right? I'm so screwed. And look at how many overdoses happen. So, I stopped that. I can't let people keep using at my place. I can't, like, I'll lose my housing if that happens." *(Focus Group with SSW)*

This fear of eviction was exacerbated by the precarious housing status of SSW. All described previous experiences with homelessness and the majority were currently residing in social housing.

> "When I walk down the hallway, with my keys in my hand, I still have, like just a rush. I was homeless for two years. And every day of those two years is ingrained in my head, of how horrible it was, to not have a place of my own. So yeah, I wouldn't put my housing at risk, in any way." *(Interview with SSW)*

The precarity of their housing status represents an acute example of structural vulnerability. For those in social housing, eviction would result in their ineligibility for future social housing, and a likely inability to find alternative suitable low-cost accommodation. This vulnerability to housing loss is not addressed by public health advice not to use alone. Coupled with the stress generated by intervening (and being ready to intervene) in multiple overdose events, it functioned as a constraint on the ability of SSW to continue to supervise drug use within the Satellite Sites.

Carry naloxone

The expansion of OEND programs in the current overdose epidemic has led to increasing availability of naloxone for PWUD - and their family and friends - to have on hand to quickly reverse opioid overdose. Participants in this study repeatedly highlighted how naloxone was a

useful and necessary tool in responding to overdoses:

> We arrive at James' place, and he is very agitated, very frazzled. He starts telling us that Tom just ODed in the bathroom, and that he's been trying to get him to come around. I look inside the bathroom as we pass by, and I can see 3 syringes in there, one in the sink, one sitting on top of the (closed) toilet seat, and one on the shelf under the mirror. There is also a cooker on the bathtub ledge, and an empty vial of naloxone is also in the sink, with the top broken off. In the next room, Tom is sitting on the bed, still heavily on the nod, and soaked in sweat. He doesn't seem to be doing too well, and is swaying heavily, like he can barely hold himself up. But he is breathing steadily and responds to us when we talk to him. James tells us: "He went down in the bathroom. I had to naloxone him in there. Thank god I still had some around, I've been running low lately. It was hell getting him out of there, it's so small, and he hit his head as he went down. It took me a half hour, to get him out of there. Sorry, I'm so hyped up. Sorry!" Over the next hour, we monitor Tom as he slowly starts to come out of it, and becomes more alert. *(Field note)*

SSW not only used naloxone when people overdosed at their Satellite Sites, but served as distribution points for naloxone, providing it alongside training on its use to clients:

> We are getting settled, and Susan (*the Satellite Site coordinator*) starts asking Leah (*SSW*) about the amount of injection materials - syringes, cookers, water, and filters - that she has been distributing. Leah immediately cuts her off, saying "Do you have more naloxone? I've been giving out so much. I'm down to my last vial here, and I want to have more around." Susan pulls out her bag, and takes out a small cardboard box, that has about 10 vials of naloxone in it. She takes out 4, and hands them to Leah. "I have to keep some for Mitch," Susan tells Leah, "He's had a run on overdoses lately and needs to restock as well." (*Field note*)

As the overdose crisis escalated, SSW have been responding to increasing numbers of overdoses, as well as serving a vital role in the provision of OEND to people who may be otherwise unconnected to health and social services. As 'go-to' people in their communities with access to harm reduction supplies and training, SSW are frequently intervening in drug-related emergency situations:

> "I've had two, three overdoses in the last month. I know what to do with naloxone and do it, and I'm actually pretty calm about it. But it is definitely after the fact that it hits you." *(Focus Group with SSW)*

Access to naloxone is crucial for SSW, and for PWUD in general. However, access to naloxone alone does not mitigate the stress stemming from the increasing occurrence of overdose. Participants expressed that they were beginning to be exhausted by the emotional burden of an increased number of overdoses, despite having access to the means to intervene:

> SSW1: But now, because of the drugs being a lot harder, and the carfentanil out there, I'm finding, oh my god, every time someone's using, they go down.
>
> SSW2: It's too much, I'm getting really tired of it.
>
> SSW1: Yeah. It's stressful, and my son had to do it. He's saved someone [*with naloxone*]. I wasn't home. I was at work. Oh god. He was a mess when I came home and asked him what happened. (*Focus Group with SSW*)

While there is clearly an emotional toll for SSW in intervening in overdose events so frequently, SSW are trained to respond, and are able to implement their training when necessary. Their closeness to the people overdosing – who are experiencing a life-threatening situation - complicates the emotional stress and trauma experienced by SSW, particularly since many of the clients of Satellite Sites are their friends and family members. In this field note, a SSW reports receiving a phone call about a family member - her nephew - overdosing at a friend's house, where they do not have any naloxone. She describes her emotional state as she takes naloxone to the scene of the overdose:

> "I was so scared! As soon as I heard that on the phone, that he was down *(overdosing)*, I just took off running. It's so scary, especially when it's your own family! As I was running there, I just kept thinking, 'Oh my god, am I going to make it there? Am I going to make it on time?' It's not far, it's only about 5 minutes away. But it felt like forever. And since then, I'm having a bit of a hard time, you know? I can't stop thinking about what would have happened if…if I didn't make it in time." *(Field note)*

Participants recognized the negative emotional impacts of overdose response, but also highlighted the lack of support available to them. In the following excerpt, SSWs note that some attention is beginning to be paid to the trauma that front-line emergency service workers are exposed to and the importance of workplace support to address this (Johnson, 2017). They also point out that these resources are not being provided to PWUD, who are also working on the front-line, intervening in overdoses, and whose stress may also be compounded by their close ties to the people experiencing overdose:

> SSW1: They're starting to pay attention to paramedics in Vancouver, who are going around to all the different overdoses and the trauma and post-traumatic stress that they're having. But they're not paying attention to the stresses that people who use drugs, who are having to deal with all these overdoses are going through, right?
>
> SSW2: No, of course not. That's what pissing me off, is once again, you see who's getting prioritized - it's nurses; it's doctors; it's paramedics. We need to be worrying about their feelings. But people who use drugs, who are actually dealing with this on their own -
>
> SSW1: who are already saving more, probably more lives than them to begin with and for a longer period of time! 'Cause they're people who use drugs and, that's all there is to it. Right? No need to worry about their stress! (*Focus Group with SSW*)

In this excerpt, participants show attentiveness to the workings of structural violence, which privileges the provision of resources to some groups of people due to their position in the social hierarchy, while constraining access to others who are equally or in greater need of resources but, in this case, are experiencing social marginalization due to their drug use and the stigma that accompanies it (Farmer, 2004; Quesada et al., 2011).

Call 911 if overdose occurs

The third key message in OEND programs is that people should call 911 for emergency medical service (EMS) or paramedic response when an overdose occurs. Negative experiences with police complicate this seemingly straightforward advice, since police often accompany paramedics on overdose calls (Bennett et al., 2011). Following an overdose in one of the Satellite Sites, this SSW explained that fear of attention from police and the possibility of arrest influenced the decision of whether to call 911:

> "When I brought those people back – I gave them the option – do you want an ambulance? Do you want to go to the emergency room? Do you want me to stay with you? 'Cause no one wants to call the ambulance. You only do it if you have to. Too much risk of heat, of having the cops at your place." *(Field note)*

While allowing people to use drugs at Satellite Sites is not a program requirement, many SSW do so out of a sense of responsibility for fellow community members. This presents a particular risk for SSW living in subsidized or social housing, as mentioned above, who repeatedly spoke of incidents where eviction proceedings were started against

other tenants following calls to 911 for overdose. Because ambulances attending overdoses were often accompanied by police and/or the security service employed by the social housing provider, an overdose was used as grounds to establish that a tenant was using or allowing others to use drugs in their apartment, in buildings where illicit drug use is expressly forbidden. Additionally, the excerpt below refers to the impression - prevalent within certain buildings with high volumes of drug use and calls to 911 for overdose - that police were using 911 calls for overdose to identify locations for future drug-related 'raids':

> SSW1: So part of the whole thing is that they just put in place the Good Samaritan Act, which is so that if, so it's to encourage people to call 911, if you have an overdose, and get help, right? And part of the thought behind that is that if it's hard for people to call, then people are more likely to die.
>
> SSW2: But the only thing is, it doesn't address the housing issue. It addresses the police issue, but it doesn't address if you're in a building that doesn't want any kind of drugs, and you know that going in.
>
> SSW3: I heard that all the people that were raided [*by police*], all the people that were raided in the building, they were evicted. Because of the no tolerance thing *[no tolerance to drug use in a social housing building]*. (*Focus Group with SSW*)

While Good Samaritan legislation is designed to prevent arrests during 911 calls for overdose, it was not designed to prevent other negative outcomes such as eviction. As described above, tenants in social housing buildings may be evicted for using or allowing illicit drugs to be used in their homes. These housing policies highlight the ways in which PWUD experience structural vulnerability, where precarious housing and vulnerability to housing loss can constrain the decision to call emergency medical services during an overdose situation, even within a larger legal environment characterized by the presence of Good Samaritan legislation.

Lack of attention to structural factors influencing overdose

A major factor in the local environment impacting SSW was the lack of SIS in operation at the time of this study. This meant that even if SSW did not want to supervise injections in their sites, there were few safe places to refer people to, where they could be supervised in a sanctioned environment. SSW also recognized the need for additional intervention at the structural level, since SIS, similar to OEND programs, aim to prevent harm to PWUD by intervening after they have overdosed:

> SSW 1: Because SIS are not going to stop people from overdosing. It's just going to save them, right? It's not going to stop the amount of overdoses.
>
> SSW2: Like, the only way they're going to be able to make it safe is by legalizing it. (*Focus Group with SSW*)

Here, participants highlighted the potential to address the overdose crisis with interventions that recognize the vulnerability inherent in leaving people dependent on a toxic illicit drug supply, and will intervene to divert people who use drugs onto a safer, legal and regulated drug supply. These types of interventions might include forms of heroin assisted treatment or newer innovations in injectable opioid agonist treatment (Ferri, Davoli, & Perucci, 2005; Oviedo-Joekes et al., 2016; Supervised Injectable Opioid Agonist Treatment Committee, 2017), as well as novel pilot interventions such as safer supply programs that aim to divert people from the illicit drug supply by providing pharmaceutical hydromorphone tablets without the supervision or treatment goals inherent in opioid agonist treatment (Rai, Sereda, Hales, & Kolla, 2019; Tyndall, 2018; Woo, 2018). This would represent a move to intervene at the level of drug supply to prevent the occurrence of overdose, rather than solely focusing on interventions such as OEND programs and supervised injection services, that ensure quick and effective intervention following the occurrence of overdose.

Discussion

This study explores how OEND programs, which rely on community networks of PWUD, are both necessary and life-saving. However, OEND programs are implemented within an overall risk environment where criminalization of drug use remains the legal framework. Criminalization influences policy in ways that have repercussions for PWUD, particularly with regards to policies governing housing and the provision of support for addressing the emotional stress from dealing with repeated overdoses. In this environment, the effective implementation of OEND as a measure to address the opioid overdose crisis is complicated and impeded by the continuing criminalization of drug use, and the ways in which the constraints imposed by criminalization exacerbate the structural vulnerability of PWUD.

This paper highlights three policy areas that increase structurally the vulnerabilities of PWUD, and reflect the structural violence inherent in these policies: Good Samaritan legislation, housing policies that allow for the eviction of those who use drugs or allow drug use in their apartments, and the lack of safer environment interventions. Good Samaritan legislation introduces limits to the criminal charges possible against PWUD at the scene of an overdose, in an attempt to remove barriers to calling 911 for assistance (Latimore & Bergstein, 2017b). In the Canadian context, however, this legislation is limited to preventing charges related to simple drug possession. The larger legal and policy environment is characterized by continued criminalization of drug use, which influences housing policy, including policies that specify that tenants may be evicted for using or allowing illicit drugs to be used in their apartments. These types of evictions have been documented in several jurisdictions, and can have negative effects on the health of those evicted (Bruijn & Vols, 2019; Bruijn, Vols, & Brouwer, 2018). Housing insecurity resulting from an eviction occasioned by a 911 call not only increases structural vulnerability, but the use of eviction against people who call 911 following an overdose in their apartment is a clear example of structural violence.

While our study illustrates that OEND can be lifesaving and are necessary in the context of increasing overdose deaths, they should be accompanied and supported by the broad scale-up of environmental and structural measures that aim to increase the health and safety of PWUD while also addressing the structural vulnerabilities they face. A major element of structural vulnerability was the lack of supervised injection services in operation during the study period, despite long-standing documented need (Bayoumi et al., 2012). SIS are a form of safer environment intervention, that provide supervision of drug use by trained workers who can quickly intervene in case of overdose, and where state sanction of their services means that workers do not risk arrest or eviction. The efficacy of SIS are backed by strong research evidence, including findings that they reduce morbidity and mortality from overdose (Potier, Laprévote, Dubois-Arber, Cottencin, & Rolland, 2014). SIS are not a panacea for addressing the high rates of overdose in the context of the current highly toxic drug supply; however, they form an integral part of a comprehensive response to the overdose crisis, and provide an important service for those who choose to use them (Scheim & Werb, 2018). Most importantly, lack of SIS in a community means there is no alternative intervention available if SSW decide not to supervise injections. This reveals a fundamental tension with the public health advice not to use alone: in the absence of SIS, PWUD have no choice but to implement haphazard measures, including requests to other PWUD to supervise injections, to ensure that someone is available to administer naloxone in case overdose occurs.

Echoing other research with peer workers, shelter workers, and PWUD who have been involved in front-line overdose response during this crisis (Bardwell et al., 2018; Marshall et al., 2017; Wallace et al.,

2018), SSW in our study clearly identified how the increasing numbers of overdoses occurring among PWUD was having a negative impact on their stress levels and mental health. This was leading some to question whether they should continue to allow people to inject within their Satellite sites. OEND rely on social networks within the community to supervise drug use and respond when overdose occurs, particularly in areas where SIS are lacking (Faulkner-Gurstein, 2017). Additionally, recent research drawing on approaches from science and technology studies, highlights how the conditions of and outcomes from naloxone administration emerge in relation to a multitude of forces, including the relationships of care between those present at the overdose event, and those receiving naloxone (Farrugia, Neale, et al., 2019; Farrugia, Fraser, et al., 2019). Our findings highlight how the stress and traumatic reactions experienced by some SSW in response to having to intervene in multiple overdoses may have important implications for shaping the future possibilities of care (Farrugia, Neale, et al., 2019). If PWUD - or others within their social networks, including family and friends - respond to this stress with reticence to supervise drug users who are at risk of overdose, this may undermine the effectiveness of OEND. The experience of trauma – and efforts to protect themselves from experiencing future trauma - may be shaping the future conditions of administration of naloxone, particularly where this interacts with structural vulnerabilities such as housing insecurity. This is a particular danger in areas without sanctioned SIS, where PWUD already face a lack of space to use drugs that are supervised by people trained and equipped to respond to overdose.

Attention to the multitude of experiences and outcomes that surround naloxone administration – including those that could be described as positive, negative, traumatic, or something more complex – highlight how interventions and support for PWUD and peer workers like SSW who are on the front-line of the response to the overdose crisis are urgently needed. The development of support must include attention to the histories of trauma and loss that PWUD have often experienced, including how stress from overdose response and multiple overdose-related losses may be exacerbating these histories (Bohnert, Tracy, & Galea, 2012; Richert, 2015; Templeton et al., 2016). Additionally, care must be taken to ensure that interventions are adapted to the realities and needs of PWUD, and the structural vulnerabilities they may be facing (Shearer et al., 2018). OEND programs – particularly the ability to administer naloxone during life-threatening overdose - have provided PWUD, who are frequently marginalized by their drug use, with both the capacity and power to provide care during overdose events, however attention to the politics of care surrounding OEND programs is necessary to recognize the complexities involved in this contested act of care (Farrugia, Fraser, et al., 2019). A politics of care approach highlights, for example, the dedication of material resources to address trauma among some groups responding to overdose (such as paramedics) but not to others (such as PWUD). The current overdose crisis shows no sign of abating, thus attention to the social relations and arrangements that are contributing to a situation where stress and trauma of repeated overdose response is being neglected among PWUD within program and policy responses is urgently needed.

In assessing the transferability of these findings to other settings, geographical particularities, including the specificity of the laws in place (particularly Good Samaritan laws), the impacts that the presence or absence of SIS may have on overdose response in the community, and the potential to put in place support for people engaging in overdose response within the community should be considered. Multiple data collection methods were used to guard against the potential for social desirability bias, including the use of observation in addition to one-on-one interviews with SSW, clients and program staff at multiple time points. Additionally, a focus group was conducted with SSWs and the Satellite Site coordinator to allow for member checking to triangulate findings and enhance credibility (Creswell, 2013). Within the context of this study, ethnographic methods provide insights from environments that can be difficult to access for research, in this case due to the illicit activities occurring and the stigma surrounding them. The combination of multiple qualitative data collection methods (observational and interview-based) is a strength which can generate useful data that can be used to inform public health programs and practice.

It is also important to recognize that both OEND programs and the provision of safer environments (such as SIS) are important yet limited methods of responding to the overdose crisis. Both provide a method of intervening quickly and effectively after overdose has occurred, and they are part of a comprehensive response to the overdose crisis. As important as they are, the overall impact of these reactive measures is necessarily limited as they do not address one of the major causes of the current overdose crisis, which is the systematic contamination of the illicit opioid supply with fentanyl (Ciccarone, 2019). Nor do they address the ways in which the privileging of criminalization and interdiction efforts impact the drug market, and structure the larger environment in which the responses to this crisis are occurring (Beletsky & Davis, 2017). While criminalization creates a context that limits the effectiveness of OEND, it also restricts the ability of public health authorities to fully intervene, particularly at the level of the drug supply. Measures needed to address this would include decriminalization and an expansion of safer supply interventions that provide people who are using opioids with pharmaceutical heroin or hydromorphone to divert them from illicit sources (Oviedo-Joekes et al., 2016, 2009; Tyndall, 2018; Wood et al., 2010).

Conclusion

Health education and promotion campaigns such as OEND are often framed in positive terms, as a method to provide information that individuals may use to protect or improve their health (Gastaldo, 1997). However, OEND campaigns are not simply providing neutral health education. Findings from this study suggest that the arrangements of care made possible by OEND programs provide PWUD – a group frequently marginalized by their drug use - with the capacity to provide care during overdose events. It also explores how, similar to other harm reduction interventions, OEND program implementation is impacted by a legal environment that criminalizes drug use. Implementation of OEND programming within this environment can inadvertently reinforce and exacerbate structural and systemic vulnerabilities that constrain PWUD. Public health authorities must ensure they address structural factors that constitute a major determinant of overdose among PWUD, with a focus on the ways in which criminalization of drug use can impact eviction policies, and on how stigma surrounding drug use limits the supports available to PWUD attempting to cope with stress and trauma from repeated overdose response. Early OEND programs were initiatives by and for the PWUD community. Public health authorities must ensure the full and authentic participation of PWUD, not only in OEND programs, but also in the development and implementation of the full range of structural changes and supports necessary to effectively respond to the overdose crisis.

Declaration of Competing Interest

None.

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