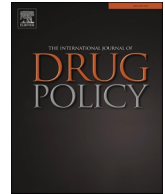


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Research Paper

The impact of an unsanctioned compassion club on non-fatal overdose

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ABSTRACT

Objectives: In 2022, the Drug User Liberation Front opened an unsanctioned compassion club in Vancouver where members could purchase illicit drugs that had been rigorously tested to ensure quality and a lack of potentially fatal contaminants. We sought to evaluate the impact of access to this novel safer supply intervention on non-fatal overdose.

Methods: Data were obtained from 47 club members via surveys completed at 3-month intervals between August 2022 and October 2023. We conducted multivariable generalized estimating equations (GEE) analyses to examine the association between club enrolment and the outcomes of: (1) any non-fatal overdose; and (2) any non-fatal overdose involving naloxone administration.

Results: The final sample, including 47 study participants, contributed a total of 225 observations and 44.4 person-years of follow-up during the study, and a median follow-up duration of 12.2 months (quartile 1 - 3: 10.4 - 14.7) per participant. In multivariable GEE analyses, enrolment in the compassion club was associated with reduced likelihood of non-fatal overdose (Adjusted Odds Ratio [AOR] = 0.51, 95% Confidence Interval (CI): 0.26 - 0.99) and non-fatal overdose involving naloxone administration (AOR = 0.37, 95% CI: 0.16 - 0.84) after adjusting for potential confounders.

Discussion: In this study, enrolment in an unsanctioned compassion club was found to be associated with reductions in any type of non-fatal overdose and non-fatal overdose involving naloxone administration. These findings highlight the need for ongoing research on safer supply interventions, as well as the potential of non-medicalized compassion clubs to complement existing safer supply programming and reduce overdose events.

Introduction

Canada remains in the midst of an escalating overdose crisis fueled by an unpredictable and highly toxic illicit drug supply. The province of British Columbia (BC) has been severely impacted, with an overdose rate of 45.3 per 100,000 person years in 2023 (BC Coroners Service, 2023a). In Vancouver's Downtown Eastside, this problem is explicitly acute, with a 2023 overdose death rate of 557 per 100,000 person years (BC Coroners Service, 2023b). This rate far exceeds that of the rest of Canada, with a rate of 19.3 per 100,000 (Federal, provincial, and territorial Special Advisory Committee on the Epidemic of Opioid Overdoses, 2023), or the rate seen in the countries hardest hit in Europe, such as Scotland, where the rate was 16.8 per 100,000 persons between 2018-2022 (National Records of Scotland). In response to ongoing

overdose deaths, BC's chief coroner convened a standing death review panel whose most recent report stated "the fastest way to reduce deaths is to reduce dependence on the unregulated supply for people who use drugs" and that "a practical, scalable response to the public health emergency requires pursuit of a non-medical model that provides people who use drugs with an alternative to the unregulated drug market" (BC Coroners Service, 2023a).

A number of "safe supply" interventions have been implemented in Canada (Karamouzian et al., 2023), although these approaches remain controversial (Fischer & Robinson, 2023). To date, safe supply programs have operated under prescriber-based models and typically involve the dispensation of hydromorphone (witnessed or unwitnessed ingestion), although some now involve the prescription of other drugs, including stimulants and opioids such as a fentanyl. Given that such programs are

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quite new, and tend to be small due to capacity limitations, evidence derived from evaluations have been mostly qualitative in nature, with few rigorous quantitative reports. However, a scoping review published in this issue of IJDP indicates that prescriber-based opioid safer supply programs appear to consistently produce a range of benefits, including reductions in opioid toxicity events, unregulated opioid use, improved access to healthcare, and reduced engagement in drug procurement activities (Ledlie et al, 2024). However, limitations were also noted, including a lack of long-term effectiveness studies, as well as studies focused on long-term safety and diversion (Ledlie et al, 2024).

After losing a year-long battle to secure a federal exemption to operate, in August 2022, the Drug Users Liberation Front (DULF), a community-level non-profit in the Downtown Eastside, piloted an Evaluative Compassion Club for individuals who use cocaine, heroin or methamphetamine, live in Vancouver's Downtown Eastside, and were at high risk of overdose (Canadian Broadcasting Corporation, 2022). Over fourteen months, eligible individuals enrolled as members, granting them the ability to purchase, at cost, up to fourteen grams of cocaine, heroin, and methamphetamine per week at a fixed storefront space in Vancouver's Downtown Eastside (Drug Users Front Liberation, 2023). All substances were tested via paper spray mass spectrometry, nuclear magnetic resonance spectroscopy, fourier transform infrared spectroscopy and high-performance liquid chromatography prior to sale to ensure quality and a lack of potentially fatal contaminants, and labeled so that participants were aware of the contents (see Fig. 1 and Fig. 2 for example) (Drug Users Front Liberation, 2023). The club's operations spanned four days per week, totaling twenty-four hours, and the Club's physical space included an on-site overdose prevention site (Drug Users Front Liberation, 2023). Compassion clubs of this kind are novel, and there appears to be no evidence specific to this form of intervention focused on ensuring access to a safe supply of heroin, cocaine and methamphetamine. This type of collective initiative does bear some similarities to other types of compassion or "buyers" clubs, including those focused on providing access to medicinal cannabis or antiretroviral therapy for HIV disease (Kent, 1999; Rhodes and van de Pas, 2022), but it represents a highly novel form of safe supply programming.

Given the total lack of empirical literature describing the effectiveness of compassion clubs as an overdose prevention initiative, the project was subjected to evaluation throughout its operation. Herein we report on the impact of DULF compassion club enrolment on non-fatal overdose rates amongst program participants, and thereby seek to contribute to the literature specific to compassion clubs and non-

prescriber-based models of safe supply.

Methods

Study setting and design

Data for this study were drawn from surveys completed by an open prospective cohort of 47 DULF Club members. These data were collected with the goal of assessing the effectiveness of the initiative in meeting its primary stated objective of reducing overdose events, without generating unintended adverse impacts (e.g., impacts on housing, income, and crime; increased interactions with police; increases in overdose risk behaviour). Baseline and quarterly quantitative survey data were collected between August 2, 2022 and October 24, 2023. The survey items were adapted from several different studies operating in Vancouver's Downtown Eastside, including the Vancouver Injection Drug User Survey (VIDUS), and the Safer Alternative for Emergency Response (SAFER) Evaluation (Klaire, Sutherland, Kerr, & Kennedy, 2022; Socias et al., 2021). The surveys were administered in a private office by trained research assistants. Prior to data collection, DULF conducted a 3-hour community-based ethics review of the broader project with the DULF board and membership of the Vancouver Area Network of Drug Users (VANDU). DULF also established an Indigenous Advisory Board that reviewed the evaluation approach and participated in sanctioning it (Drug Users Front Liberation, 2023). All participants provided verbal informed consent prior to participation. Participants were provided with a \$50 honorarium at each study visit, which may have provided additional incentive to remain in the study. Ethical approval for secondary analysis of the quantitative data collected by DULF was provided by the University of British Columbia's Behavioural Research Ethics Board (H23-02497).

Cohort description and recruitment

DULF's project drew participants via lottery from a pool of self-referred applicants who were over 19 years of age, current people who use drugs at risk of overdose, and members of one of five different drug user groups in Vancouver's Downtown Eastside: (1) BC Association of People on Opiate Maintenance (BCAPOM); (2) The Coalition of Peers Dismantling the Drug War (CPDDW); (3) The Tenant Overdose Response Organizers (TORO); (4) Vancouver Area Network of Drug Users (VANDU); (5) Western Aboriginal Harm Reduction Society (WAHRS).



Fig. 1. DULF tested drugs packaged and labelled for contents.



Fig. 2. DULF tested drugs packaged and labelled for contents.

Given the extreme contamination of the local drug supply, as well as the high incidence of overdose death, all individuals using drugs in our setting can reasonably be regarded as being at risk of overdose. Indeed, recent coronial reports indicate that 86% of recent overdose deaths involved fentanyl, 43% involved crystal methamphetamine, and 39% involved cocaine (BC Coroners Service, 2023a). Enrolment was staggered over time as capacity of the DULF Club grew to serve more individuals. Participants completed either 1 or 2 surveys prior to enrolling in the club (with those waitlisted completing a maximum of 2 pre-club-enrolment surveys), and a maximum of 5 surveys after enrolling in the club.

Primary outcomes and explanatory variables

The primary outcomes of this study were self-reported non-fatal overdose and non-fatal overdose with naloxone administered, respectively. We assessed these outcomes separately to better isolate overdoses involving opioids, given that opioids account for the greatest proportion of deaths in our setting (BC Coroners Service, 2023a). Specifically, at baseline and each subsequent study visit, participants were asked if they had: (1) if they had ever had an overdose; (2) if they had an overdose in last 3 months/since last interview (yes vs. no); and (2) if they had an overdose where naloxone was administered in last 3 months/since last interview (yes vs. no). Consistent with longstanding cohort studies operating in our setting, overdose experience was assessed with the following question: "...have you had an overdose (i.e., where you have a negative reaction from using too much drugs)?". Our first outcome allowed for assessment of any type of overdose (i.e., stimulant or opioid-related), whereas our second outcome allowed for a more specific focus on opioid-related overdoses. The primary exposure was enrolment in the DULF Compassion Club in the last 3 months, which was assessed using DULF program records (yes vs. no). To estimate the effect of DULF Club enrolment on the outcomes of interest, we considered secondary explanatory variables that could potentially act as confounders. These variables, which were selected based on existing literature regarding overdose and *a priori* hypothesized relationships (Armoon et al., 2022; Coffin et al., 2007; Kerr et al., 2007; BC Coroners Service, 2023b), included: age at baseline (per year increase), self-reported white ethnicity/ancestry (yes vs. no), self-reported gender (women/non-binary individuals vs. men), unstable housing in the last 3 months (yes vs. no), and previous lifetime overdose experience at baseline (≥ 3 vs. < 3 overdose events). Unstable housing was defined as being homeless,

living in a shelter, single room occupancy hotel or couch surfing vs. living in a house or an apartment (Dong et al., 2021). Previous lifetime overdose experience was assessed by subtracting the number of reported overdose events in the last 3 months at baseline from the total number of lifetime overdose events reported at baseline (Carlson, Daniulaityte, Silverstein, Nahhas, & Martins, 2020), and defined based on the median split of 3 events per participant. All time-varying variables were treated as time-updated and refer to the 3-month period prior to a study visit unless otherwise indicated. In subanalyses, we asked participants if they diverted/shared any of the drugs they obtained from the compassion club, and the reasons for doing so.

Statistical analyses

Descriptive statistics were used to characterize the sample, as well as overdose events during the study period. We then used bivariable generalized estimating equations (GEE) with a logit link function for binary outcomes to estimate unadjusted odds ratios (OR) for the associations between each of the explanatory variables and the two outcomes of interest: (1) any non-fatal overdose; and (2) any non-fatal overdose involving the administration of naloxone. GEE analyses were used because repeated measures of variables were available for each participant. These methods allowed for the consideration of factors associated with the respective outcomes of interest over the full duration of the study period, with standard errors estimated using an exchangeable correlation structure adjusted for multiple observations per participant (Lee, Herzog, Meade, Webb, & Brandon, 2007). Therefore, data from every participant study visit were considered in this analysis. As each participant may have had study visits where they did and did not experience the outcomes of interest in the last 3 months, this approach allowed for examination of factors associated with time periods when the outcomes did and not occur, both within and between participants. This method has been used successfully in previous cohort studies of non-fatal overdose (Kerr et al., 2007; Lake et al., 2015).

To estimate the independent association between DULF Compassion Club enrolment and the outcomes of interest, a multivariable model was fit for each of the respective outcomes using an *a priori*-defined variable selection process described previously by Maldonado and Greenland (Maldonado & Greenland, 1993). Specifically, we first fitted a preliminary model for each outcome that included all explanatory variables of interest, noting the value of the coefficient associated with DULF Club enrolment in each model. We assessed collinearity between explanatory

variables using the variance inflation factor (VIF). We found no evidence of collinearity (all VIF values were <1.74). In a stepwise manner, we removed the secondary explanatory variable corresponding to the smallest relative change in the DULF Club enrolment coefficient from further consideration. We continued this iterative process until the maximum change of the value of the DULF Club enrolment coefficient from the full model exceeded 5%. Remaining variables were considered confounders in the respective multivariable models. This approach allowed us to develop a parsimonious model with the most meaningful predictors. All p -values were two-sided and all statistical analyses were conducted using SAS version 9.4 (SAS Institute, Cary, North Carolina, United States). Descriptive statistics were used to assess the prevalence and reasons for diversion.

Results

In total, 47 individuals participated in this study between August 2022 and October 2023. Seventy-two individuals originally expressed interest in joining the DULF Club, although one individual was deemed ineligible due to a lack of cocaine, methamphetamine or "down" (fentanyl/heroin/unspecified opioids) use. Initially, following a lottery, 21 individuals were admitted to the club upon its opening in August 2022, and another 28 were admitted when capacity increased. In total, two individuals withdrew from the study and had their data withdrawn. One individual died very soon after being enrolled and prior to accessing the compassion club. Three individuals were lost to follow-up at some point during the study, with 2 completing two study follow-up visits, and 1 completing only one study visit. The 47 study participants collectively contributed a total of 225 observations and 44.4 person-years of follow-up over the study period, with a median of 5 study visits (quartile 1 – 3: 4 – 6) and a median follow-up duration of 12.2 months (quartile 1 – 3: 10 – 15) per participant. At baseline, the median age of participants was 47 years (quartile 1 – 3: 37 – 56), 18 (38%) participants self-identified as women or non-binary genders, 29 (62%) participants self-identified as white, 23 (49%) identified as being of Indigenous ancestry, and 4 (9%) individuals identified as being of other ethnicities. Twenty-three (49%) participants reported being unstably housed in the last 3 months, 36 (77%) reported a lifetime history of overdose, while 34 (72%) participants reported having an overdose event in the three months prior to their baseline visit. Missing data for all variables was $< 5\%$, with the only missing data pertaining to age (4.9%). Further sample characteristics are reported in Table 1.

In total, 22 (47%) participants reported experiencing at least one non-fatal overdose event during the study period, and 18 (38%) participants reported experiencing at least one non-fatal overdose with naloxone administered during the study period. None of these overdoses occurred at the DULF Club. Of the total 225 observations, there were 49 (22%) 3-month periods including at least one reported non-fatal overdose event, and 35 (16%) 3-month periods including at least one reported non-fatal overdose event with naloxone administered. Of the 159 observations where participants were enrolled in the compassion club in the previous 3 months (i.e., they had been screened, admitted and were eligible to purchase drugs from the club), 30 (19%) reported experiencing a non-fatal overdose in the last 3 months, and 19 (12%) reported experiencing a non-fatal overdose with naloxone administered in the last 3 months. Of the 66 observations where participants were not enrolled in the compassion club in the last 3 months, 19 (29%) reported experiencing a non-fatal overdose in the last 3 months, and 16 (24%) reported experiencing a non-fatal overdose with naloxone administered in the last 3 months.

In bivariable GEE analyses (Table 2), compassion club enrolment was associated with reduced odds of any type of non-fatal overdose (Odds Ratio [OR] = 0.57, 95% Confidence Interval (CI): 0.32 – 1.01), although this did not meet conventional statistical significance. In addition, women/non-binary gender was inversely associated with this outcome (OR = 0.31, 95% CI: 0.11 – 0.87), while previous lifetime overdose

Table 1

Demographic and drug use characteristics of DULF Club participants (n = 47).

Characteristic	N (%)
Gender	
Men	29 (62)
Women	13 (28)
Other	5 (11)
Ethnicity/Ancestry	
White	29 (62)
Indigenous	23 (49)
BPOC [±]	4 (9)
Median age (min-max)	47 (24-67)
Unstably housed [†]	21 (45)
Ever incarcerated	37 (78)
Drug of Choice	
Cocaine/Crack	18 (38)
"Down" [*]	16 (34)
Meth	9 (19)
Meth ^{**} & "Down"	4 (9)
Cocaine & "Down"	1 (2)
Cocaine & Meth	1 (2)
Lifetime overdose	36 (77)
Overdose last 3 months	34 (72)
Safer supply ever [‡]	20 (43)

[±] Black and other people of colour

[†] Unstable housing = homeless, living in a shelter, single room occupancy hotel, couch surfing vs. living in a house or an apartment).

^{*} Fentanyl, heroin, unspecified opioids

^{**} Methamphetamine

[‡] Ever enrolled in a prescriber-based, medicalized safer supply program

Table 2

Bivariable and multivariable generalized estimating equation analyses of factors associated with non-fatal overdose.

Characteristic	Unadjusted		Adjusted	
	Odds Ratio (95% CI)	p -value	Odds Ratio (95% CI)	p -value
DULF Club enrolment [*] (yes vs. no)	0.57 (0.32 – 1.01)	0.056	0.51 (0.26 – 0.99)	0.045
Age (per year increase)	0.98 (0.94 – 1.03)	0.442	0.98 (0.94 – 1.02)	0.317
Gender (women/non-binary vs. men)	0.31 (0.11 – 0.87)	0.026	0.22 (0.08 – 0.61)	0.003
Ethnicity/ancestry (white vs. BIPOC) [±]	1.16 (0.48 – 2.81)	0.749	-	-
Unstable housing [†] (yes vs. no)	1.12 (0.47 – 2.69)	0.792	-	-
Lifetime overdose (≥ 3 vs. < 3)	3.01 (1.21 – 7.46)	0.018	3.98 (1.57 – 10.08)	0.004

^{*} Refers to periods during which participants were actively enrolled in the DULF Compassion Club

[±] BIPOC = Black, Indigenous and other people of colour

[†] Unstable housing = homeless, living in a shelter, single room occupancy hotel, couch surfing vs. living in a house or an apartment).

experience was positively associated (OR = 3.01, 95%CI: 1.21 – 7.46). In the final multivariable model, after adjusting for age, gender, and previous lifetime overdose experience, compassion club membership was significantly associated with reduced odds of non-fatal overdose (Adjusted Odds Ratio [AOR] = 0.51, 95% Confidence Interval (CI): 0.26 – 0.99). In bivariable GEE analyses (Table 3), compassion club enrolment was significantly associated with reduced odds of non-fatal

Table 3

Bivariable and multivariable generalized estimating equation analyses of factors associated with non-fatal overdoses involving naloxone administration.

Characteristic	Unadjusted		Adjusted	
	Odds Ratio (95% CI)	<i>p</i> - value	Odds Ratio (95% CI)	<i>p</i> - value
DULF Club enrolment* (yes vs. no)	0.41 (0.19 – 0.87)	0.021	0.37 (0.16 – 0.84)	0.018
Age (per year increase)	0.97 (0.93 – 1.02)	0.260	-	-
Gender (women/non-binary vs. men)	0.28 (0.08 – 0.96)	0.043	0.11 (0.03 – 0.48)	0.003
Ethnicity/ancestry (white vs. BIPOC) ‡	0.98 (0.37 – 2.59)	0.971	0.30 (0.10 – 0.92)	0.034
Unstable housing† (yes vs. no)	0.87 (0.36 – 2.09)	0.755	-	-
Lifetime overdose (≥3 vs. <3)	3.16 (1.31 – 8.80)	0.028	5.46 (2.07 – 14.39)	<0.001

* Refers to periods during which participants were actively enrolled in the DULF Compassion Club

‡ BIPOC = Black, Indigenous and other people of colour

† Notes: unstable housing = homeless, living in a shelter, single room occupancy hotel, couch surfing vs. living in a house or an apartment).

overdose involving naloxone administration (OR = 0.41, 95% CI: 0.19 – 0.87). Additionally, women/non-binary gender was inversely associated with this outcome (OR = 0.28, 95% CI: 0.08 – 0.96), while previous lifetime overdose experience was positively associated (OR = 3.16, 95% CI: 1.13 – 8.80). In the final multivariable model, after adjusting for gender, white ethnicity and previous lifetime overdose experience, compassion club enrolment remained significantly associated with reduced odds of non-fatal overdose involving naloxone administration (AOR = 0.37, 95% CI: 0.16 – 0.84).

In total, 26 (55%) of participants reported diverting their drugs with others at least once during study follow-up. Many participants provided reasons for diversion in response to an open question. Respondents were able to provide more than one reason at each study follow-up. In total, 77 reasons for diversion were provided, with the most common reasons being because the “person was a friend” (39%). Other reasons given included that the person they shared drugs with were unable to access a safe supply (23%), to help a friend/acquaintance/ partner be safe (17%), person was in pain or withdrawal (13%). Three people (4%) reported diverting because the compassion club provided “better drugs”, two (3%) reported that they diverted because the person they shared with preferred heroin over fentanyl. Only one person (1%) reported diverting drugs for income.

Discussion

In this study involving 47 individuals who were admitted to an un-sanctioned compassion club, we found that enrolment in the program was associated with a reduction in any type of non-fatal overdose as well as non-fatal overdose involving naloxone administration. These findings, suggesting that enrollment in DULF’s intervention likely decreased overdose rates, appear to be amongst the first in a growing body of research on the impacts of a safer drug supply that does not employ the medical system.

Our findings are aligned with previous evaluations of safer supply programs that have found positive outcomes associated with program engagement, as well as the findings of the scoping review of safer supply programs published in this issue (Ledlie et al. 2024). A previous quantitative study investigating a medicalized and prescriber-based model of

safer supply found that enrolment in such programming reduced use of emergency departments, hospital admissions and healthcare costs (Gomes et al., 2022). In addition, several qualitative investigations of safer supply programs, involving prescriber- and vending machine-based programs, have found that such programs help reduce illicit drug use, overdose risk, and led to other improvements in health, social and financial well-being (Bardwell, Ivsins, Mansoor, Nolan, & Kerr, 2023; Ivsins, Boyd, Beletsky, & McNeil, 2020; Ivsins, Boyd, Mayer, et al., 2020; Ivsins et al., 2021; Ledlie et al. 2024; Schmidt et al., 2023). Perhaps most relevant to the current study, a recent quantitative study of a prescriber-based opioid safer supply program in Toronto reported an 80% reduction in non-fatal overdose among participants after 8 months of program engagement (Nefah et al, 2023). However, such programs are known to often suffer from low enrolment and retention rates, attributed in part to inability of such programs to accommodate a large number of individuals and a lack of desirable options and dose for people who use drugs (May, Holloway, Buhociu, & Hills, 2020). This problem may be further compounded by the medical system’s inability to prescribe or allow access to illegal drugs (Tyndall, 2020). This in turn has prompted calls for the implementation of more community-based compassion club models operating outside of the medical system as a means of increasing access to safer supply (Thomson et al., 2019). Indeed, some physician leaders have expressed that they would rather not be responsible for ensuring access to safer supply given the associated ethical issues and the current state of the overburdened healthcare system (Bach, 2022). Our study contributes to the existing literature by describing the impact of a non-medicalized safer supply program on non-fatal overdose.

People who use drugs, and other experts in the field, have long expressed a demand for a stable, predictable, and easy to access supply of drugs to prevent overdose in the context of the current overdose crisis (Bonn et al., 2020; Health Canada, 2023a; BC Coroners Service, 2023a; Tyndall, 2020). Despite its limited scope, this study has implications for research and policy development specific to safer supply and overdose prevention. The lack of active studies in the field of de-medicalized safer supply distribution highlights the need for more research. Given the recent arrest of DULF’s co-founders (Greer, 2023), pathways for exemptions to Canada’s Controlled Drugs and Substances Act are needed to enable institutions to run programs and track relevant statistics that can assist policymakers in making decisions (Bonn et al., 2021), as well as revisions to existing policy frameworks, specifically the Special Access Program, the Controlled Drugs and Substances Act, and Food and Drugs Act, which limit the implementation of compassion clubs as a response to Canada’s public health crisis (Bonn et al., 2021). This policy hurdle is further compounded by a lack of available licit substances for such a program; there are currently no appropriate approved drugs in Canada’s Drug Product Database (Health Canada, 2023b). This further underscores the need for policy changes that facilitate a deeper understanding of the effectiveness of compassion clubs as a means of optimizing support for individuals who are at risk of overdose. Further, additional prospective study of effectiveness is needed, alongside qualitative studies focused on implementation issues and cost-effectiveness research to further uncover the impacts and limitations of this unique approach to safe supply programming.

This study has several limitations. First, our study sample was not randomly selected and therefore may not be representative of people who use drugs in Vancouver or elsewhere. However, it appears that our sample closely resembles the characteristics of other samples of people who use drugs in the same neighbourhood (Norton et al, 2022).

Related to this, the self-selective nature of recruitment may have resulted in a sample with distinct characteristics. However, exactly how this approach might have biased our results remains unclear. Second, our sample was small due to the capacity limits of the compassion club itself. This limited our ability to undertake rigorous adjustment for a range of potential confounders. Third, we lacked a control population and therefore were unable to control for secular trends in the broader

environment. However, we note that given the lack of a clear gold standard for safe supply programs, selecting an appropriate comparison would have been challenging if not impossible. Fourth, our data was collected via self-report which may be susceptible to response biases, including recall or socially desirability biases. However, we note that previous research has indicated that self-reports from people who use drugs are generally valid (Darke, 1998; Bharat et al., 2023). Fifth, we cannot infer causation from this study design, and acknowledge the potential for unmeasured confounding. Lastly, our work was undertaken in a unique environment among a distinct population, and hence our results may not generalize to other settings.

Conclusion

In summary, we found that enrolment in an unsanctioned compassion club was associated with reductions in any type of non-fatal overdose as well as overdoses involving the administration of naloxone. These findings point to the potential of compassion clubs to complement existing safer supply programming, and further point to the need for policy changes that permit the sanctioning and evaluation of new low barrier and non-medicalized safer supply distribution projects, including pathways for these projects to access a licit supply of drugs.

CRedit authorship contribution statement

Jeremy Kalicum: Writing – review & editing, Writing – original draft, Conceptualization. **Eris Nyx:** Writing – original draft, Conceptualization. **Mary Clare Kennedy:** Writing – review & editing, Methodology, Formal analysis. **Thomas Kerr:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Conceptualization.

Declaration of competing interest

The authors have no competing interests to declare.

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