



Violence and drug scene participation

Violent victimization among marginalized people who use drugs in Copenhagen, Denmark

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Abstract

Drug use is associated with violent victimization. The present study investigated violent victimization among marginalized people who use drugs in Copenhagen, Denmark. A survey was conducted (N=243). Violent victimization was defined as having experienced violence at least once within the past year. The primary exposure was entrenchment in the drug scene, with drug consumption, drug acquisition, and socio-demographics included as covariates. Entrenchment in the local drug scene was associated with an increased odds of violent victimization in adjusted logistic regression models. Past-year cocaine use and obtaining drugs from a pusher were also associated with an increased odds of experiencing violence. Violence associated with entrenchment in a drug scene could be interpreted as systemic, resulting from the illegality of drug use, but it could also be related to other factors associated with being part of a marginalized and criminal social environment.

Keywords

people who use drugs, victimization, drug scenes, marginalization

Introduction

A large body of research has documented that drug use and drug use disorders are associated with both violent offending and violent victimization and that people with substance use problems are at a substantially higher risk of being involved in violence compared to members of the general population (Neale et al., 2005; Stevens et al., 2007; Koo et al., 2008; Cafferky et al., 2018; Seid et al., 2021). Individuals who are marginalized due to, for example, poverty or housing instability, also experience a similarly heightened vulnerability to various forms of violence, including physical assault, sexual abuse, and exploitation (Gaetz, 2004; Lee & Schreck, 2005; Newburn & Rock, 2006; Fazel et al., 2014). At an especially high risk of violence are those who experience multiple forms of social exclusion, including people from marginalized communities who use drugs (Nilsson et al., 2020; Ellsworth, 2019). In Denmark, a recent survey (Nilou et al., 2023) found that 28% of marginalized people who use drugs had been victims of assault and 24% had been victims of aggravated assault within the past year, compared to 1% of the general population. The survey also documented that victimization among marginalized individuals increased with the number of vulnerability indicators they experienced (alcohol abuse, mental illness, homelessness, drug abuse, and poverty). While it is well established that violence is prevalent in drug scenes and among individuals involved in drug use and the drug market, as well as among marginalized individuals, the current study aims to add to this body of knowledge by improving our understanding of how intersecting layers of social exclusion and vulnerability may exacerbate the risk of violence. This focus is crucial because marginalized individuals, such as those experiencing poverty, homelessness, or mental illness, and who use drugs, face compounded risks and vulnerabilities.

Marginalization and violent victimization

Marginalization due to poverty and insecure housing may produce a structural vulnerability to violence because it places people in settings and situations where there is an increased risk of encountering potential offenders and where there is a lack of social support networks and access to protective resources (Blau & Blau, 1982; Fitzpatrick et al., 1999; Huey, 2017; Jasinski, 2010; Lee & Schreck, 2005; Snow & Mulcahy, 2001). Richardson et al. (2015) studied the relationship between socioeconomic marginalization and vulnerability to violence among people who use drugs and found that participation in street-based income-generating activities, such as drug dealing, sex work, and theft, was independently and positively associated with violent victimization, while engagement in regular employment, temporary employment and self-employment was not. This study highlights the structural production of vulnerability to violence, in relation to economic opportunities and access to housing (see also Pain & Francis, 2004; Robinson, 2010). Such findings also suggest that marginalization increases the likelihood of individuals being placed in risky environments and situations where they become attractive targets for potential offenders (see also Jasinski, 2010; Lee & Schreck, 2005). Relatedly, people who are unhoused may experience a 'security gap' where they lack most of the formal and informal security resources to which others have access, and this places them in situations where they lack protection (Huey, 2017).

Drug use and violent victimization

The increased risk of being a victim of violence associated with involvement with illegal drugs may be related to marginalization due to economic reasons, stigmatization etc., but may also involve more specific drug-related risk factors. Goldstein (1985) thus

distinguishes between three different types of drug-related violence that can be related to both being a victim and a perpetrator of violence: 'psycho-pharmacological' violence caused by the effects that drugs can have on a person, 'economic-compulsory' violence caused by the need to get drugs or funding of drugs by individuals who are drug dependent, and 'systemic violence' caused by the drug market being an illegal market outside societal regulation.

Engaging in drug-related activities such as buying, selling, and using drugs, unconventional or illegal ways of generating an income to buy drugs, and being present in settings where such activities take place can be expected to expose people who use drugs to situations where such types of violence can occur. In addition, 'drug scenes' (Bless et al., 1995), that is, settings where drug-related activities take place, lack protective resources even more than marginalized settings in general due to their illegal nature.

Stevens et al. (2007) studied victimization of individuals who are drug dependent in four different European countries and found that lifestyle factors, situational circumstances, and individual responses to structural difficulties affected victimization. These included frequent drug use, recent offending, and histories of depression and anxiety. They also found that participants with multiple indicators of social exclusion were highly vulnerable to violent victimization. This led Stevens et al. (2007) to conclude that the best explanation for connections between drugs and crime is that the connection operates in a context of social exclusion.

Koo et al. (2008) found that factors relating to personal networks (such as having a network comprised largely of drug users), drug use (such as frequent use of crack cocaine and powdered cocaine), and street-business (such as dealing drugs) were significantly associated with violent victimization among active drug users. They concluded that street-based individuals who use drugs are particularly vulnerable to violent victimization because they are exposed to many motivated offenders who see them as convenient targets. It is worth mentioning that there is often an offender-victim overlap where street-based individuals who use drugs can be both offenders and victims depending on structural and situational circumstances (Block, 1981; Sampson & Lauritsen, 1990). Qualitative research shows similar results where the extent to which individuals participate in a drug scene and are marginalized from non-drug-related networks and institutions increases their vulnerability to violence and disease (Coumans et al., 2006; Ellsworth, 2019; Fast et al., 2010; Fast et al., 2009).

The present study

In the present study, we sought to further investigate the association between risk of violent victimization and involvement in the drug scene in a population that is marginalized from non-drug-related networks by, for example, being unemployed and having insecure housing. We refer to this with the concept of 'entrenchment,' which means an everyday life dominated by drug-related activities and social relationships that mostly involve other people who use drugs (Coumans et al., 2006; Fast et al., 2010; Fast et al., 2013; Fast et al., 2009). We hypothesized that entrenchment in the drug scene would be associated with a higher risk of violence among economically marginalized drug users. This is because drug scenes are a criminogenic risk environment where participants engage in various criminal activities, and the risk of getting involved in violent interactions as either a perpetrator or a victim is high (Boyd et al., 2018; Ellsworth, 2019). In drug scenes, violence is often normalized because it is perceived as an acceptable means to resolve conflicts and maintain control. This is a consequence of the marginalized and criminal

nature of these scenes, which means that legal and institutionalized means of solving conflicts are not present (Karandinos et al., 2014). In other words, drug scenes create the conditions for a confluence of potential offenders, attractive victims, and a shortage of security resources (Cohen & Felson, 1979).

Although prior studies have assessed the prevalence of violence among individuals from marginalized communities who use drugs, little research has been conducted outside of North America. Furthermore, while previous studies have broadly investigated violence among marginalized people who use drugs, this study investigates the specific relationships between marginalization, drug involvement, and violence, shedding light on risk factors that have previously been underexplored. In addition, by using the concept of 'entrenchment' to frame the investigation, this study offers a new perspective on how social embeddedness in drug scenes influences violent victimization. By providing empirical data on the association between entrenchment in drug scenes and violent victimization, the study can inform theoretical discussions about drug scenes, marginalization, and violence.

Methods

Study design and population

This is a cross-sectional study using a questionnaire on risk environments and the everyday lives of marginalized drug users in Copenhagen. The data are drawn from a survey conducted as part of a mixed-methods project on the everyday lives, risk-environments, and access to social and health services of this population (Houborg et al., 2022). Participants in the study were a convenience sample of marginalized individuals who use drugs. They were recruited between May 2018 and May 2019 from drug treatment services providing substitution treatment, drug consumption rooms, and low-threshold social and health services in three areas of the Copenhagen municipality (Vesterbro, Nordvest and Amager). These are areas where many people who use drugs live or spend their time. Individuals were eligible to participate in the study if they were attending one of the recruitment sites, were at least 18 years of age, and had a lifetime history of "hard drug" use, which included all substances other than alcohol or cannabis. A total of 243 individuals were enrolled in the study, and the present analyses are based on respondents who answered questions on violent victimization (N=228). This article contributes to diversity by presenting research about experiences of violent victimization in a population that is not a central focus in victimization research. In this way, the results may contribute to making the high level of violent victimization that they experience visible for policy and practice.

The questionnaire was administered by staff from the Centre for Alcohol and Drug Research, Aarhus University. The interviews were conducted face-to-face, and responses were recorded by study staff on paper questionnaires. All interviews were also audio recorded. Each interview took approximately 30–60 minutes to complete and included questions on sociodemographic factors, physical and mental health, drug use, substitution treatment, help and support, violence and abuse, social relations and social inclusion, and concerns in everyday life. Questions about inclusion and exclusion concerned, among other things, people with whom the respondent spent time (drug-using or non-drug-using persons), whether they knew many people who used drugs and people who did not use drugs, and how well-known they considered themselves to be among other people who used drugs.

Informed consent was obtained from all participants, with clear communication about the study's purpose, procedures, potential risks, and benefits. Participants were assured that their involvement was entirely voluntary and that they could withdraw at any time without any consequences. Interviews were done in settings where professionals were nearby to provide assistance and debriefing. Respondents were given a gift voucher of 200 Danish kroner (approximately 30 USD) for participating. We carefully considered the ethical implications of offering a gift voucher. The compensation was designed to acknowledge the time and effort of the participants, without exerting undue influence or coercion. The amount was modest to ensure it did not serve as an undue inducement. Prior to the interview, each participant provided verbal consent, which was audio recorded. The research project was approved by the Danish Data Protection Agency.

Measures

All variables, described in detail below, were drawn from the questionnaire. The main exposure variable was entrenchment in the local drug environment, and covariates included drug use variables and sociodemographic variables. Covariates were selected based on theory and prior research indicating their association with victimization and entrenchment (Koo et al., 2008; Neale et al., 2005; Fast et al., 2009, 2010; Gottfredson (1984); Cohen & Felson, 1979; Turanovic & Pratt, 2019). The outcomes were any past-year serious violent victimization and recurrent serious violent victimization.

Entrenchment in the drug scene

Entrenchment refers to whether an individual is embedded in the local drug environment. It involves the extent to which a person's personal networks and social relationships consist of other drug-involved individuals, and how well a person knows, and is known by, people who use drugs in their local areas.

Entrenchment was addressed by two items in the questionnaire, which were transformed into a composite indicator of entrenchment: 1) "I know many people who take drugs in the area"; and 2) "People who take drugs in the area know who I am." The response options for these items were "Fits well," "Fits somewhat," or "Does not fit". Respondents were considered to be entrenched if they endorsed both items by responding "Fits well" or "Fits somewhat". Conversely, a respondent was considered not to be entrenched if they responded "Does not fit" to either of the items. As a sensitivity analysis, we included entrenchment as an index—a continuous variable generated from a Principal Component Analysis (PCA) using polychoric correlations. The index was based on one principal component of the PCA.

Covariates

Several drug-related and sociodemographic variables, which could be measured using the available survey data, were considered potential confounders of the relationship between entrenchment and victimization based on prior research.

Drug consumption and acquisition

Indicators of recent and heavy substance use were included in the analyses to control for the physical and psychological effects of the substances, which may confound the relationship between entrenchment and violence victimization. In the survey, participants were asked "Which substances, which have not been prescribed by a doctor, have you taken within the last year?", followed by a list of different substances. Participants who responded

affirmatively to the options “Heroin” and “Cocaine” were assessed as having used these drugs in the last year. Excluding cannabis, cocaine is currently the most prevalent drug among marginalized people who use drugs in Copenhagen, followed by heroin (Houborg et al., 2022). These two drugs were therefore included in the study. Participants who reported using illicit drugs in the past year were asked additional questions concerning drug sources and amount of money spent on drugs. Participants were asked, “How do you typically acquire drugs?” They were then presented with a list of options and were instructed to indicate all that apply. Use of a pusher was included as a covariate in the study because drug markets are heterogeneous. Compared to social supply or obtaining drugs from a user-dealer, buying from a pusher may involve being exposed to practices, such as intimidation and violence in connection with debt collection, and participating in the illegal drug economy in ways that may carry a higher risk of victimization, including being a victim of systemic violence (van der Sanden et al., 2023; Coomber, 2015; Goldstein, 1985). Use of a pusher was defined as endorsing the statement “I buy from a pusher who doesn’t use drugs themselves”. Participants were also asked the open-ended question, “How much money, approximately, have you spent on drugs in the past week?” Responses were dichotomized as <143 U.S. dollars [1000 Danish kroner] vs. \geq 143 U.S. dollars. This variable was used as an indicator of heavy drug use.

Sociodemographic variables

Sociodemographic variables included gender (male or female), age (included as a continuous variable), and housing situation at the time of the interview, which was dichotomized as own housing or unstable housing (e.g., sleeping on the street, living temporarily with friends/family/acquaintances, staying at a treatment facility). The latter indicator was included as a covariate because prior research has shown that housing instability is associated with both an increased risk of victimization (Nilsson et al., 2020) and substance use disorders (Thompson et al., 2013). Additionally, individuals experiencing housing instability are likely to frequently visit low-threshold social services, such as those providing food and shelter, which are also located in the largest drug scenes in Copenhagen, potentially increasing their likelihood of entrenchment.

Outcome variables

The outcome in this study was self-reported experiences of serious violent victimization in the past year. Respondents were asked about three categories of serious violent victimization: 1) “being kicked or struck with a fist or an object”; 2) “being thrown against furniture, walls, down stairs or the like”; and 3) “being strangled or attacked with a knife or firearm.” These questions paralleled those used in the Health Survey of Socially Marginalized People in Denmark (SUSY UDSAT), which is administered by the Danish National Institute of Public Health on behalf of the Council for Socially Marginalized People (Ekstrøm et al., 2023). If a respondent reported that they had experienced a category of violence, they were asked to indicate the number of times they had experienced it in the past year. A respondent was considered to have experienced multiple instances of serious violence if they reported more than one instance in any of the violence categories. As well, if a respondent reported experiencing single instances of separate serious violence categories (categories 1–3), this was considered to be multiple instances of serious violence.

Statistical analyses

The sample was first described using frequency distributions for categorical variables and the mean and standard deviation for continuous variables. Crude and multivariable logistic regression analyses were conducted to assess the relationship between entrenchment and violent victimization. Two different outcomes were assessed in separate models: serious violent victimization and multiple instances of serious violent victimization. All adjusted analyses included drug consumption and sociodemographic variables. Further analyses that included covariates related to drug source and money spent on drugs were conducted only among those respondents who reported that they had used illicit drugs in the past year. The regression analyses are based on those with valid responses for included variables. Results were reported as odds ratios (ORs) with 95% confidence intervals (CIs) in both tables and forest plots. In the tables and text, coefficients were also reported as average marginal effects (ME), which indicate the change in the predicted probability of experiencing violence, in percentage points, when the independent variable increases by one unit. Goodness-of-fit was assessed using the Pearson chi-square and Stukel tests (Allison, 2014; Stukel, 1988). The internal consistency of the entrenchment items was assessed using Cronbach's alpha (Cronbach, 1951). All analyses were conducted using Stata v.18 (StataCorp, 2023).

Results

Approximately three-quarters of the sample was male (74%), and the mean age was 46 years (range: 19–70, standard deviation: 12). Participants were predominantly Danish citizens (77%). Nearly half (45%) of the respondents were in an unstable living situation at the time the questionnaire was administered, 89% reported that they were unemployed, and 69% of the respondents were considered to be entrenched in the local drug scene. Over two-thirds (70%) of the sample reported they had been incarcerated during their lifetime. Past-year heroin and cocaine use were reported by 45% and 65% of respondents, respectively, and 68% of the respondents were enrolled in opioid substitution treatment at the time of the interview. Among those who reported using illicit drugs in the past year ($n=206$), 32% reported that they typically obtain drugs from a pusher, and 42% had spent more than 1000 Danish kroner on illicit drugs in the past week (Table 1).

Table 1. Population description ($N=228$)

	% (n)
Gender	
Males	74.12 (169)
Females	25.00 (57)
Declined to answer	0.88 (2)
Highest education	
Lower secondary or less	60.09 (137)
Upper secondary or higher	39.04 (89)
Declined to answer	0.88 (2)
Mean age (SD)	45.79 (12.05)

(continued)

Table 1. (Continued)

	% (n)
Relationship status	
Married/In relationship	30.70 (70)
Single	67.54 (154)
Declined to answer	1.76 (4)
Living situation	
Own housing	53.95 (123)
Unstable (homeless, shelters)	44.74 (102)
Declined to answer	1.32 (3)
Danish citizenship	
Yes	77.19 (176)
No	22.37 (51)
Declined to answer	0.44 (1)
Employment status	
Currently working	6.58 (15)
Not currently working	89.03 (203)
Declined to answer	4.39 (10)
In substitution treatment	
Yes	67.98 (155)
No	29.82 (68)
Declined to answer	2.19 (5)
Past-year heroin use	
Yes	45.18 (103)
No	54.82 (125)
Past-year cocaine use	
Yes	64.47 (147)
No	35.53 (81)
Entrenched in drug scene^a	
Yes	68.86 (157)
No	30.26 (69)
Declined to answer	0.88 (2)
Ever incarcerated	
Yes	70.18 (160)
No	28.51 (65)
Declined to answer	1.32 (3)
Typically obtain drugs from pusher^b	
Yes	32.04 (66)
No	64.56 (133)
Declined to answer	3.40 (7)
Amount spent on illicit drugs in past week^b	
≥ 1000 Danish kroner	42.23 (87)
< 1000 Danish kroner	51.94 (107)

(continued)

Table 1. (Continued)

	% (n)
Declined to answer	5.83 (12)

^aDefined as agreeing with the statements “I know many people who take drugs in the area” and “People who take drugs in the area know who I am.”

^bOnly includes participants who reported that they had used illicit drugs in the past year (n=206)

Over one-third (39%) of the sample had been victims of serious violence in the past year. Recurrent episodes of violence in the past year were reported by 30% of the participants.

In unadjusted logistic regression analyses, entrenchment (OR, 2.53; 95% CI, 1.34–4.75; ME, 0.21), past-year heroin use (OR, 2.52; 95% CI, 1.46–4.36; ME, 0.22), past-year cocaine use (OR, 3.90; 95% CI, 2.07–7.36; ME, 0.29), unstable housing (OR, 1.77; 95% CI, 1.03–3.05; ME, 0.13), age (OR, 0.96; 95% CI, 0.94–0.99; ME, -0.01), use of a pusher (OR, 2.94; 95% CI, 1.60–5.41; ME, 0.26), and money spent on drugs (OR, 2.30; 95% CI, 1.28–4.13; ME, 0.20) were significantly associated with odds of victimization (Table 2). These variables were also significantly associated with odds of being victimized repeatedly in unadjusted analyses (Table 3).

Results of multivariable logistic regression models show that entrenchment in the local drug environment remained significantly associated with odds of serious victimization when adjusting for all covariates (full sample: OR, 2.26; 95% CI, 1.15–4.44; respondents who used illicit drugs in the past year: OR, 3.12; 95% CI, 1.38–7.06). In the full sample (Adjusted Model 1), entrenchment was associated with an increase in the probability of brutal violence of 16 percentage points, and, in the sample of respondents who had used illicit drugs in the past year (Adjusted Model 2), being entrenched was associated with a 22-percentage-point increase in risk of violence victimization. Past-year cocaine use was also independently associated with victimization in the full sample (OR, 2.72; 95% CI, 1.31–5.65; ME, 0.21) and among the subgroup of respondents who reported using illicit drugs in the past year (OR, 3.06; 95% CI, 1.24–7.56; ME, 0.22). Further, we found that those who reported that they typically obtained drugs from a pusher had an increased odds of experiencing serious violence (OR, 2.38; 95% CI, 1.18–4.79; ME, 0.18) in the adjusted model (Table 2). Similar results to those found for any experience of serious victimization were identified for recurrent serious victimization (Table 3). Forest plots of the ORs and 95% CIs are shown in Figure 1 (Adjusted Model 1 and Adjusted Model 3, the full sample) and in Figure 2 (Adjusted Model 2 and Adjusted Model 4, respondents who had used illicit drugs in the past year). The goodness of fit statistics were satisfactory in all models.

As a sensitivity analysis, entrenchment was included as a continuous variable in the model based on results of a PCA, with higher values indicating a higher level of entrenchment. The two entrenchment items used in the PCA had adequate internal consistency (Cronbach's $\alpha = 0.70$). In the adjusted models, increasing levels of entrenchment were associated with an increased risk of serious victimization (full sample: OR, 1.41; 95% CI, 1.04–1.92; ME, 0.07; respondents who used illicit drugs in the past year: OR, 1.45; 95% CI, 1.03–2.06; ME, 0.07) and multiple instances of serious victimization (full sample: OR, 1.42; 95% CI, 1.02–1.97; ME, 0.06; respondents who used illicit drugs in the past year: OR, 1.49; 95% CI, 1.02–2.17; ME, 0.07).

Table 2. Crude and adjusted odds ratios (ORs) with 95% confidence intervals (CIs) and marginal effects (ME) from logistic regression models examining relationship between variables and any serious violence

	Unadjusted Regressions			Adjusted Model 1 (N=221)			Adjusted Model 2 (N=182)		
	OR (95% CI)	P	ME	OR (95% CI)	P	ME	OR (95% CI)	P	ME
Entrenched^a									
No	1 (ref)			1 (ref)			1 (ref)		
Yes	2.53 (1.34–4.75)	0.004	0.21	2.26 (1.15–4.44)	0.019	0.16	3.12 (1.38–7.06)	0.006	0.22
Past-year heroin use									
No	1 (ref)			1 (ref)			1 (ref)		
Yes	2.52 (1.46–4.36)	0.001	0.22	1.45 (0.75–2.78)	0.266	0.08	1.09 (0.53–2.27)	0.808	0.02
Past-year cocaine use									
No	1 (ref)			1 (ref)			1 (ref)		
Yes	3.90 (2.07–7.36)	<0.001	0.29	2.72 (1.31–5.65)	0.007	0.21	3.06 (1.24–7.56)	0.015	0.22
Living situation									
Own housing	1 (ref)			1 (ref)			1 (ref)		
Unstable (homeless, shelters)	1.77 (1.03–3.05)	0.040	0.13	1.21 (0.65–2.26)	0.551	0.04	1.05 (0.51–2.14)	0.901	0.01
Gender									
Male	1 (ref)			1 (ref)			1 (ref)		
Female	1.14 (0.62–2.10)	0.680	0.03	1.40 (0.71–2.77)	0.329	0.07	1.86 (0.83–4.16)	0.133	0.12
Age	0.96 (0.94–0.99)	0.002	-0.01	0.99 (0.96–1.01)	0.338	-0.00	0.98 (0.95–1.01)	0.126	-0.00
Use of pusher									
No	1 (ref)						1 (ref)		
Yes	2.94 (1.60–5.41)	0.001	0.26				2.38 (1.18–4.79)	0.016	0.18
Money spent on drugs in last week									
< 1000 DKK	1 (ref)						1 (ref)		

Table 2. (Continued)

	Unadjusted Regressions			Adjusted Model 1 (N=221)			Adjusted Model 2 (N=182)		
≥ 1000 DKK	2.30 (1.28–4.13)	0.005	0.20				1.08 (0.52–2.25)	0.832	0.02

^aDefined as agreeing with the statements “I know many people who take drugs in the area” and “People who take drugs in the area know who I am.”

Table 3. Crude and adjusted odds ratios (ORs) with 95% confidence intervals (CIs) and marginal effects (ME) from logistic regression models examining relationship between variables and multiple instances of serious violence

	Unadjusted Regressions			Adjusted Model 3 (N=221)			Adjusted Model 4 (N=182)		
	OR (95% CI)	P	ME	OR (95% CI)	P	ME	OR (95% CI)	P	ME
Entrenched^a									
No	1 (ref)			1 (ref)			1 (ref)		
Yes	2.63 (1.30–5.32)	0.007	0.18	2.59 (1.21–5.52)	0.014	0.16	3.39 (1.37–8.38)	0.008	0.20
Past-year heroin use									
No	1 (ref)			1 (ref)			1 (ref)		
Yes	2.20 (1.23–3.92)	0.007	0.16	1.26 (0.63–2.51)	0.508	0.04	0.95 (0.44–2.06)	0.907	-0.00
Past-year cocaine use									
No	1 (ref)			1 (ref)			1 (ref)		
Yes	4.63 (2.21–9.70)	<0.001	0.27	3.49 (1.52–8.02)	0.003	0.22	2.93 (1.07–7.98)	0.036	0.18
Living situation									
Own housing	1 (ref)			1 (ref)			1 (ref)		
Unstable (homeless, shelters)	1.92 (1.08–3.43)	0.026	0.14	1.34 (0.69–2.58)	0.389	0.05	1.26 (0.60–2.66)	0.543	0.04
Gender									
Male	1 (ref)			1 (ref)			1 (ref)		
Female	0.90 (0.46–1.75)	0.763	-0.02	1.18 (0.57–2.46)	0.654	0.03	1.68 (0.72–3.93)	0.234	0.09
Age	0.96 (0.94–0.99)	0.003	-0.01	0.99 (0.96–1.01)	0.320	-0.00	0.98 (0.95–1.01)	0.184	-0.00
Use of pusher									
No	1 (ref)						1 (ref)		
Yes	2.97 (1.59–5.55)	0.001	0.24				2.76 (1.34–5.68)	0.006	0.19
Money spent on drugs in last week									
< 1000 DKK	1 (ref)						1 (ref)		

Table 3. (Continued)

	Unadjusted Regressions		Adjusted Model 3 (N=221)			Adjusted Model 4 (N=182)		
≥ 1000 DKK	2.81 (1.51–5.23)	0.001	0.22			1.52 (0.72–3.24)	0.273	0.08

^aDefined as agreeing with the statements “I know many people who take drugs in the area” and “People who take drugs in the area know who I am.”

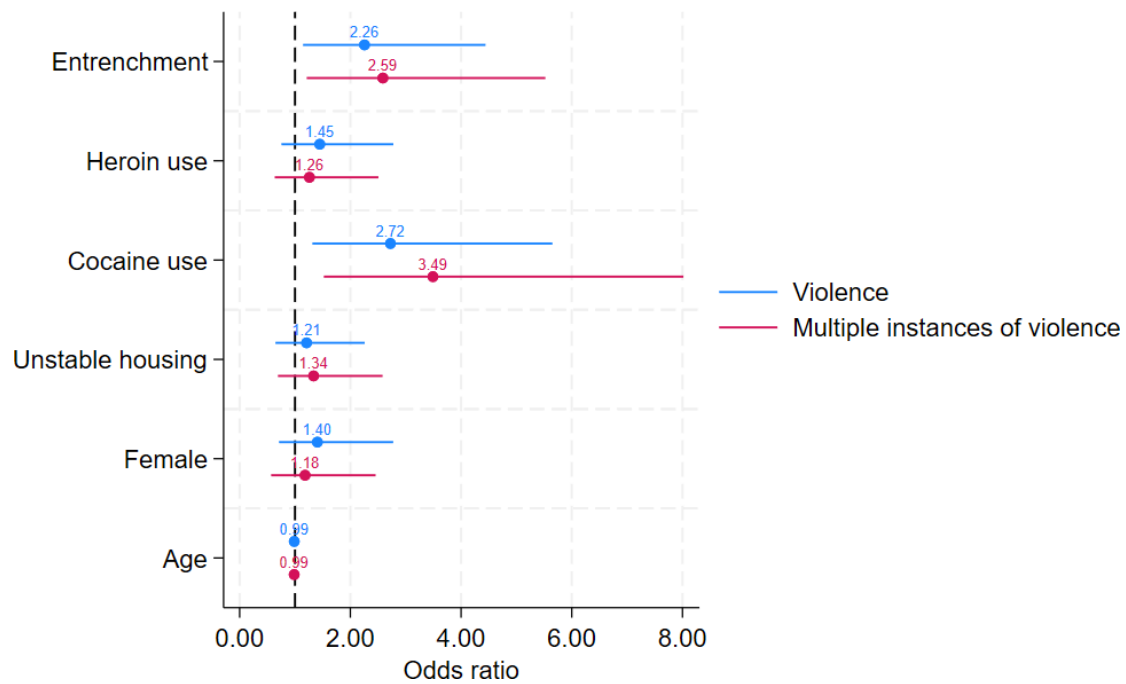


Figure 1. Forest plots of the odds ratios and confidence intervals for adjusted model 1 and adjusted model 3.

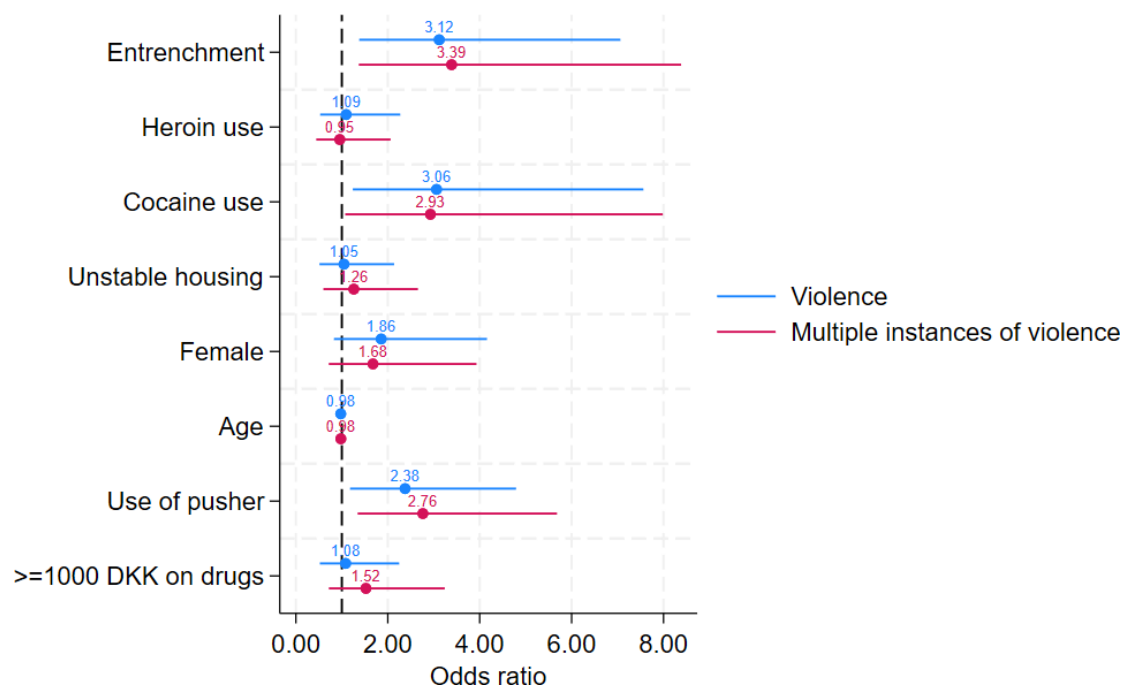


Figure 2. Forest plots of the odds ratios and confidence intervals for adjusted model 2 and adjusted model 4.

Discussion

We found that a substantial proportion of marginalized drug users who participated in our survey had been victims of violence in the past year. These findings are consistent with international research demonstrating the high prevalence of violent victimization among marginalized people who use drugs (Koo et al., 2008; Marshall et al., 2008; Neale et al., 2005; Skjærvø et al., 2018; Stevens et al., 2007) and with public health related research from

Denmark specifically (Ahlmark et al., 2018; Pedersen et al., 2007; Pedersen et al., 2012). In our study, 39% of respondents reported that they had been a victim of serious violence in the past year, compared to 32% of marginalized people who use drugs who responded to a Danish national survey from a similar time period (Ahlmark et al., 2018). The difference in prevalence may be related to study settings. The national survey of marginalized populations covered the whole country, while our survey covered Copenhagen only, with one third of the participants recruited from the largest and most active open drug scene in Denmark, where cocaine (including crack cocaine) is the dominant drug. Open drug markets have been shown to be particularly violent settings (Gerell et al., 2021) and are characterized as having few barriers to entry, whereas closed markets generally require that the buyer and seller know each other or are introduced by a trusted third party (May & Hough, 2004).

In the present study, our aim was to move beyond merely documenting a high prevalence of violence among marginalized people who use drugs and to investigate factors that can make certain groups within this population more vulnerable to violent victimization. To frame our understanding of the relationship between drug use, participation in drug scenes and violence, we took our point of departure in existing literature about structural and situational dimensions of crime and violence in general and the relationships between drugs and violence in particular (Cohen & Felson, 1979; Goldstein, 1985; Gottfredson, 1984; Hindelang et al., 1978; Kennedy & Baron, 1993; Koo et al., 2008; Stevens et al., 2007; Turanovic & Pratt, 2019). Our main exposure concerned social relationship factors (entrenchment in local drug scenes); however, we also investigated drug use and acquisition factors and socio-demographic factors.

Entrenchment

We found a significant association between entrenchment and the risk of being a victim of serious violence, which remained after we adjusted for sociodemographic, drug use, and drug acquisition variables. In line with our results, Koo et al. (2008) identified a significant association between having other drug users as more than 50% of one's social network and an increased risk of becoming a victim of violence. However, Skjærvø et al. (2018) reported mixed results depending on the respondent's criminal offending status. Among non-offending substance users, Skjærvø et al. (2018) found a strong association between having a social network consisting of others who have substance abuse problems and risk of violent victimization. However, they did not find evidence for this association among those who reported that they had not committed a crime in the last six months. In the present study, given the smaller sample size, we did not investigate whether criminal offending modified the relationship between entrenchment and risk of victimization.

There are multiple pathways by which entrenchment may be expected to increase the risk of becoming a victim of violence. On the one hand, a social network consisting of individuals with drug use problems increases exposure to possible offenders and lack of guardianship. It may also be the case that entrenchment in a drug scene increases the risk of violent victimization to the extent that it involves frequenting particularly dangerous settings. Marshall et al. (2008) found that, among a cohort of injection drug users in Vancouver, Canada, residence in the Downtown Eastside, the location of the most active drug scene, was associated with increased risk of violence. Similarly, Neale et al. (2005) found a significant association between living in an unsafe area and being a victim of an assault among a treatment population of people who use drugs. As a high proportion of our population reported unstable living situations, we did not include area of residence in

our analyses. However, future studies regarding entrenchment could include measures of where participants spend most of their time to account for this important variable.

Drug use

The relationship between using specific drugs and violence has been extensively investigated, and our results indicating an association between cocaine use and violent victimization are consistent with prior research. For instance, Koo et al. (2008) found that frequent use of crack cocaine and powder cocaine had significant independent effects on violent victimization, and Neale et al. (2005) found that the use of crack increased the risk of both perpetrating violence and being a victim of violence. The association between cocaine use and violence observed in the present study could be interpreted as psychopharmacological. It could, however, also be explained by respondents' more frequent presence in the drug scenes in Copenhagen, particularly the open drug scene where cocaine is the most common drug. As mentioned previously, including variables about the settings and locations where the respondent spends most of their time in future studies is important for parsing this relationship.

Although the heroin use and money spent on drugs were associated with victimization in the crude models, these effects were not statistically significant in the adjusted models. As discussed in the limitations section below, the sample in the study was relatively small. Thus, there may have been insufficient power to detect a significant effect of these variables in the multivariable models. However, these findings may also be attributed to the association with other variables included in the adjusted model. For instance, those who spend more money on drugs likely have more interactions with drug dealers and other participants in the drug scenes, which could confound the association with victimization.

Drug acquisition source

We also found that those who reported that they typically acquired drugs from a pusher had an increased risk of violent victimization. Buying drugs from a drug dealer means that you participate in the illegal drug economy in a way that can be expected to increase the risk of becoming a victim of systemic violence. For example, having a debt to a drug dealer could lead to violent punishment. This finding has similarities to other research that has investigated involvement in the drug economy and violent victimization, although it is usually drug dealing that is investigated (Koo et al., 2008; Neale et al., 2005). In more general terms, studies of marginalized people and people who use drugs have found that engagement in illegal activities increases the risk of violent victimization (Lee & Schreck, 2005; Stevens et al., 2007).

Limitations

There are several limitations of this study which should be mentioned. Firstly, since this is a cross-sectional study, we cannot infer causal direction. Thus, we cannot rule out the possibility that our outcome preceded our exposure (i.e., that those who were victimized became entrenched in the drug scene). This was a convenience sample from Copenhagen and may not be representative of marginalized drug users in Copenhagen, elsewhere in Denmark, or in other countries.

As discussed previously, certain potentially relevant variables, such as the specific geographic areas where the respondent spent most of their time and the participant's position/popularity within the social network (Schreck et al., 2004), were not included

in our survey. In addition, although alcohol use has been shown to be associated with violent victimization (Cherpitel, 2007) and harmful alcohol use is common among people with substance use problems (Radcliffe et al., 2020), we were not able to account for participants' alcohol use in our study. Another potential confounder not accounted for in the present study was mental health disorders, which have been shown to be associated both with substance use and victimization (Dean et al., 2018; Swendsen et al., 2010). Therefore, it should be acknowledged that, due to unmeasured confounders, the relationship between entrenchment and victimization among marginalized people who use drugs may reflect a spurious association. There are likely overlapping and interconnected social, economic, and environmental factors, such as mental health issues, economic instability, criminalization and stigma, and social isolation, that can create cycles of vulnerability and victimization (Hong et al., 2023; Swaich et al., 2023).

In terms of the relationship between specific drug use and victimization, we had no information on whether the respondent was under the influence of the drug at the time of victimization. This type of information is useful to assess whether an increased risk of violence is due to the psychopharmacological effects of the substance.

Our study is the first to assess this composite indicator of entrenchment and is based on a relatively small sample of marginalized drug users; thus, the results should be considered exploratory and interpreted with caution. Given the small sample size, there may have been insufficient power to detect small effect sizes, and, therefore, as mentioned above, the lack of statistically significant effects for some of the covariates should be viewed with this limitation in mind. Additionally, small samples are more vulnerable to the effects of noise and are at higher risk for other serious errors, such as Type M and Type S errors, which refer to errors in the estimated magnitude and direction (sign) of the effects, respectively (Gelman & Carlin, 2014).

Furthermore, it should be noted that the analyses were conducted without multiplicity adjustment, as the study was considered exploratory and the measures were correlated (Bender & Lange, 2001). It is possible that findings significant at the 0.05 level reflected a chance result; however, given that all tests showed a consistent significant effect of entrenchment, and despite the correlation between the outcomes, we consider it unlikely that all these findings were solely due to chance.

Considering the limitations of the presents study, additional research based on larger samples is needed to confirm the findings, validate the entrenchment indicator, and assess the generalizability of the results.

Conclusion and implications

This study contributes to a line of research that investigates the relationships between violence and drug-related activities and lifestyles (Arribas-Ibar et al., 2018; Brookman et al., 2011; Koo et al., 2008; Neale et al., 2005). We found an association between being entrenched in a drug scene and violent victimization; however, there are multiple possible pathways connecting these factors. Violence associated with being entrenched in a drug scene could be interpreted as systemic, resulting from the illegality of drug use (Neale et al., 2005), but it could also be related to other factors associated with being part of a marginalized and criminal social environment and frequenting risky settings. We need more research to unpack the associations between entrenchment in a drug scene and being a victim of violence.

Our findings indicate that participating in a drug environment carries significant risks of becoming a victim of violence. Thus, drug environments are not just risk environments

in terms of direct drug-related risks, such as overdoses and disease, but also with regard to social risks, such as violence (Fairbairn et al., 2008; Fast et al., 2010; McNeil & Small, 2014). Given this context, it is important that harm reduction measures are not only seen as safeguards against drug-related risks but also against social risks.

Drug consumption rooms can serve as “safer environment interventions” (Fairbairn et al., 2008; McNeil & Small, 2014) that can also provide guardianship or be a security resource for marginalized people who use drugs, if they are designed and managed with this objective in mind (Houborg & Berge, 2022). Substitution treatment can also become a security resource because it can reduce engagement in drug-using activities and time spent in drug environments. However, in many cases, it is important to offer more than just medical treatment, but also social treatment and rehabilitation that enable participation in non-drug-related activities, settings, and social networks. Often, lack of social support and loneliness can make it difficult for people who use drugs to leave drug environments behind (Houborg et al., 2022).

Finally, the harm reduction policing approach (Houborg et al., 2014; Houborg et al., 2022; Kammersgaard, 2019) should be noted, which prioritizes offering protection and services to people who use drugs, rather than focusing on enforcing the drug legislation. This can function as an important security resource and change some of the structural conditions that make marginalized people who use drugs vulnerable to violence, particularly if it is coupled with the decriminalization of people who use drugs. Such measures can facilitate access to treatment, as well as allow marginalized users of drugs to see themselves as rights-bearing citizens with a right to protection against violence.

Data availability statement

The survey data used in this study cannot be made publicly available due to confidentiality agreements and ethical considerations protecting the privacy of participants. The data contain sensitive information that could potentially lead to the identification of individuals, and as such, access is restricted to ensure compliance with ethical standards and privacy regulations. The research project has been registered with the Danish Data Protection Agency (Datatilsynet) in compliance with national data protection regulations. The code for the analysis used to generate the results presented in this paper is available on the Open Science Framework website: https://osf.io/b43au/?view_only=09994e47667f4e11a4ef10f1cb0ad6e009994e47667f4e11a4ef10f1cb0ad6e0. For further inquiries regarding the data, please contact the corresponding author.

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