

Title: Similarities and Differences in Victimization Risk-factors for Non-offending and Offending Substance Users

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Abstract

In this cross-sectional study of substance users in Norway, we describe the patterns of victimization and investigate the factors associated with victimization, for non-offenders and offenders separately. Recent victimization was reported by 59%, and the victimization-rate was higher among offenders compared to non-offenders (69% and 43%, $p < 0.001$). Women, regardless of offender status, experienced more victimization. Unstable housing was associated with victimization among non-offenders, while markers for more severe substance use and indicators for poor mental health were associated with victimization in both groups. Addressing these factors may be important in reducing victimization and its negative outcomes among substance users.

Keywords: Substance-related disorders, victim-offender overlap, victimization, violence, substance use treatment, crime, housing, mental health

INTRODUCTION

There is a complex relationship between substance use and crime. Substance using populations have a high prevalence of crime victimization experiences, such as violent and sexual victimization (French, McCollister, Alexandre, Chitwood, & McCoy, 2004; McElrath, Chitwood, & Comerford, 1997; McKeganey, Neale, & Robertson, 2005; Stevens et al., 2007) and property victimization (McElrath et al., 1997; Stevens et al., 2007). Simultaneously, there is a high prevalence of committed crime in the population, primarily income-generating crime, but also traffic-violations and violent crime (Best, Hernando, Gossop, Sidwell, & Strang, 2003; March, Oviedo-Joekes, & Romero, 2005; Oteo Perez, Benschop, Blanken, & Korf, 2015; Skjærvø, Skurtveit, Clausen, & Bukten, 2017; D. Stewart, Gossop, Marsden, & Rolfe, 2000). Although victim and offender roles overlap in a number of populations (Flexon, Meldrum, & Piquero, 2015; Jennings, Higgins, Tewksbury, Gover, & Piquero, 2010; Mulford et al., 2016; Mustaine & Tewksbury, 2000; Posick, 2013; Silver, Piquero, Jennings, Piquero, & Leiber, 2011; TenEyck & Barnes, 2017), including substance users (Darke, Torok, Kaye, Ross, & McKetin, 2010; French et al., 2004; McCOY, Messiah, & Yu, 2001), substance users are often described either in terms of their offending or their status as victims. The relationship between substance use and victimization may be simplified by not taking into account how the victim and offender roles are intertwined (Lauritsen, Sampson, & Laub, 1991; Reingle, 2014).

To explain the victim-offender overlap, there are theories focused on social setting (factors outside the person, e.g. routine activities/lifestyles theory) and theories focused on individual characteristics (factors more endogenous to the person, e.g. level of self-control, mental health status); TenEyck and Barnes (2017) give an up to date introduction of these theories. Routine activities/lifestyles theory posits that crime/victimization can be partly explained by how activities and lifestyle causes a likely offender and a likely victim to be in

the same place at the same time. Notably, in general adolescent populations, individuals with overlapping roles as victims and offenders (victim-offenders) and individuals who are victimized, but have not offended (victims only) appear to be groups with distinct lifestyles and patterns of activity (Mustaine & Tewksbury, 2000; TenEyck & Barnes, 2017), supporting routine activities/lifestyle theories of victimization. However, in substance using populations, the differences between victim-offenders and victims only may not be as readily explained by lifestyle and patterns of activity. Although there are always individual differences, the illicit nature of substance use and the social exclusion associated with substance use (Neale, 2008; Young, 2000) may result in a subculture where most members have lifestyles that include increased levels of risk-factors for victimization (Koo, Chitwood, & Sánchez, 2008). Thus it is important to include individual characteristics in addition to lifestyle and social setting when trying to understand victimization in this already marginalised population, as well as in other populations (Pratt & Turanovic, 2015).

Social contexts and settings that have previously been associated with victimization in varied populations are marginal housing or homelessness (Cook, Smith, Tusher, & Raiford, 2005; Hiday, Swartz, Swanson, Borum, & Wagner, 1999; Kushel, Evans, Perry, Robertson, & Moss, 2003; March et al., 2005), social exclusion (Estrada & Nilsson, 2004), being in contact with or frequenting the same locations as offenders (Pratt & Turanovic, 2015) or having a social network mainly comprised of other substance users (Koo et al., 2008).

There are a number of characteristics and behaviors on the individual level that may be relevant for victimization vulnerability. Substance use pattern and severity of use, such as types of substances used, polysubstance use, intake-methods and severity of dependence may influence vulnerability to victimization through e.g. pharmacological effects (McElrath et al., 1997). E.g. stimulant use has previously been associated with victimization (Koo et al., 2008; McElrath et al., 1997). Gender is an important aspect; in general populations, men are more

likely to be victimized compared to women (Statistics Norway, 2017). However, in substance using populations, the relationship is reversed, with women reporting more victimization (McElrath et al., 1997; Stevens et al., 2007; Titus, Dennis, White, Scott, & Funk, 2003). Mental health factors, such as anxiety, depression and suicidal behavior have been associated with victimization among young adults, substance users and criminal offenders (Ruback, Clark, & Warner, 2013; Stevens et al., 2007; Vaughn et al., 2010; Wolff & Shi, 2009; You, Swogger, Cerulli, & Conner, 2011). The relationship between mental health factors and victimization can be difficult to discern. As repeat victimization is common (Ousey, Wilcox, & Brummel, 2008; Ruback et al., 2013), victimization could lead to negative mental health outcomes, which again makes the person increasingly vulnerable to new victimization episodes (Stevens et al., 2007). Self-control theories of crime (i.e. the general theory of crime) have been expanded to include crime victimization in a student sample (Schreck, 1999) and among offending women (E. A. Stewart, Elifson, & Sterk, 2004). Lower levels of self-control have been associated with victimization in adolescent and young adult populations (Flexon et al., 2015; Jennings et al., 2010; Turanovic & Pratt, 2014), and in a recent meta-analysis (Pratt, Turanovic, Fox, & Wright, 2014).

As stated, substance using populations are frequently victimized, including both violence- and property-victimization. Violence-victimization is the focus of much of the literature on victimization, and arguably violence-victimization may differ from property-victimization both in risk-factors and in the impact it has on the victim. However, the victim-offender overlap has been documented for both violence- and property-victimization, in a sample of over 50 000 adolescents from 30 countries (Posick, 2013), and property-victimization has been associated with negative mental health outcomes such as anxiety (Stevens et al., 2007). Thus, both general victimization and violence-victimization is of

importance when investigating victimization among offenders and non-offenders in our study population.

In summary, we know that offending substance users often are at higher risk for victimization (Darke et al., 2010; French et al., 2004; Stevens et al., 2007). However, there is less knowledge about differences in social setting and independent factors associated with victimization depending on offender status. In light of this, we will explore the relationship between substance use, victimization and offending. Investigation of victimization in relation to offender status may uncover practical implications for, and improve outcomes of, substance use treatment and correctional measures.

The aims of the present study were to: 1) Describe the prevalence of and types of victimization in a substance using population, by offender status and gender. 2) Among offenders and non-offenders separately, investigate factors associated with a) any victimization in general and b) violence victimization in particular.

METHODS

Design

Cross-sectional data from patients entering treatment at 14 Opioid Maintenance Treatment (OMT) centers and 7 in-patient treatment centers in Norway were collected during the period December 2012 to April 2015.

Setting

In Norway, a publicly funded healthcare system is universally available, including substance use treatment free of charge. Applications for substance use treatment are mediated by medical practitioners or social services. There were no exclusion criteria for participation in the study, however allocation to OMT or in-patient treatment assumes a certain severity of mainly illicit substance use. The evaluation process and criteria for allocation of treatment in Norway have been described in more detail previously ("Nasjonal retningslinje for legemiddelassistert rehabilitering ved opioidavhengighet ", 2010; "Prioriteringsveileder Tverrfaglig spesialisert rusbehandling (TSB)," 2012; Skjærvø et al., 2017).

Participants and Procedure

Participants were informed about this voluntary study and its purpose by facility staff. Written consent was given by those who participated. Facility staff were trained in the use of the interview through seminars arranged by the research group. Interviews were completed within 12 weeks of treatment initiation. The median time from initiation to interview was 18 days (OMT: 19 days, in-patient treatment: 17 days). A complete overview of participation and reasons for non-participation is given in Figure S1. Of a total 1416 patients entering treatment at the 21 centres during the study period, 670 (47%) were not considered or unavailable. The treatment centres had logged reasons for non-eligibility for 448 of these: logistical challenges (71%), early discharge (12%), being considered unfit for participation by staff (mental health:

10%, physical health: 1%, severity of substance use: 4%) and language barriers (1%). We have no reason to believe the distribution of reasons would be different for the unlogged cases (n=222). Thus, the main reason patients were not considered for the study were logistical challenges such as a lack of resources or geographical challenges, which should not cause a systematic selection bias. Of the 746 that were considered for inclusion, 549 (74%) completed participation, 129 (17%) declined, 45 (6%) did not meet for appointments and for 23 (3%) treatment centres stated the reason for non-participation as “other”. Of the 549 included participants, 283 entered OMT (27% women), while 266 entered in-patient treatment (28% women). The mean age at treatment inclusion was 34 years (33 for men, 35 for women). Most participants were born in Norway (3% were born in another Nordic country, and 6% in other parts of the world). Forty-one per cent had completed more than 10 years of education (mandatory level) and 11% were currently employed or under education. A more detailed description of the procedure has been given previously (Muller, Skurtveit, & Clausen, 2016; Skjærvø et al., 2017).

Measures

In structured interviews, participants self-reported crime victimization in the 6 months prior to entering treatment or a controlled environment (some were transferred directly from a controlled environment, such as a prison or a health care facility). Participants were asked about 2 subgroups of victimization corresponding to questions used by Statistics Norway in general population surveys (Statistics Norway, 2017): Property-victimization and violence-victimization (with or without leaving visible marks or injuries). If participants had been victims of at least one of these crimes in the past 6 months, they were considered “victimized”. Of these, 43% had been victims of both property crime and violent crime. Further, participants were asked how many times they had been victims of each type of crime. Blank or uninterpretable responses (e.g. “many times”) were considered missing (in total 14%).

Non-numeric responses with some numerical information were interpreted conservatively (e.g. “100++” as “100”). Additionally, participants were asked about life-time exposure (yes/no) to any sexual violence (“sexually motivated violence, abuse or rape, or attempted rape”).

Participants were asked whether they had committed crime in the last 6 months (excluding use and possession of illicit substances). They were asked about 5 categories of crime: Property crime, substance-related crime, violent crime, traffic violations and other crime. If they had committed at least one crime in the last 6 months, they were considered “offenders” for the purpose of this study. We decided to not differentiate between different types of committed crime as 70% had committed more than one type of crime and on average the offender group had committed 2.4 types of crime each. This shows a low level of specialization within types of crime, for instance only 1% had committed violent crime only or traffic violations only. For 93%, income-generating crime was among the types of crime committed, followed by traffic violations (40%) and violent crime (30%) (Skjærvø et al., 2017). For life-time history of incarceration, “Have you ever served a prison sentence?” from EuropASI was used (Kokkevi et al., 1994).

The interview included questions from the national patient registry questionnaire (Helsedirektoratet, 2012): Whether housing conditions were stable in the previous 4 weeks (yes/no) and substance use. Specifically, participants were asked the number of different substances they had used in the last 6 months and to list their 4 most used substances or addictive medications, and intake-method for each. Participants were considered users of a substance if it was among their 4 most used in the last 6 months. Some substances were combined, resulting in two categories: *stimulants* (amphetamines: 89%, cocaine: 21%, other stimulants: 5%, crack: none) and *illicit opiates* (heroin: 71%, street buprenorphine, street methadone and other opiates: 37%). The other categories were *alcohol*, *cannabis*, *illicit*

benzodiazepines, prescribed benzodiazepines and prescribed opiates. Participants could be categorized as users of up to 4 substances.

Participants were asked whether they injected substances in the 4 weeks prior to treatment (yes/no) and whether they had attempted suicide (both by overdose or other means) in their life-time (yes/no). Additionally, participants were asked how many months of substance use treatment (as in-patients or out-patients) they had previously received in their life-time. The variable was dichotomized to allow comparison of participants who had previously received a minimum of 3 months of treatment with those who had received less or no treatment.

The Severity of Dependence Scale (SDS) is a validated measure of psychological dependence, and consists of 5 items scored on a 4-point scale, with a summed score of 0 to 15 (low to high) (Gossop et al., 1995). The SDS has primarily been used to measure dependence of specific substances for research purposes (e.g. “Did you think your use of heroin was out of control?”), we have rephrased the SDS to measure general substance dependence (e.g. “Did you think your use of substances was out of control?”) (Skjærvø et al., 2017). The internal consistency of the scale was $\alpha=0.68$ in our sample.

The Hopkins Symptom Checklist (HSCL-25) measures psychological distress (depression and anxiety) in the last week. The HSCL-25 is a validated 25-item scale derived from the SCL-90 (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). Responses were given on a 5-point Likert scale (“not at all” to “very much”) as originally used with the SCL-90. The participants’ mean score (range 0-4) were used in analyses. In our population, the internal consistency of the scale was $\alpha=0.93$.

For social network, we used “With whom do you usually spend most of your free time?” from EuropASI (Kokkevi et al., 1994). Possible responses were family or friends, either with or without “problem use of alcohol/ medications/substances”, and a fifth option was “I am mostly alone”. Participants spending most of their time with family or friends who had problem use of addictive substances were categorized as having a primarily substance using social network.

The Brief Self Control Scale (BSCS) consists of 13 items, scored on a 5-point scale, with a summed score ranging from 13-65 (low to high), which has been validated in student and jail inmate populations (Lindner, Nagy, & Retelsdorf, 2015; Malouf et al., 2014; Tangney, Baumeister, & Boone, 2004). The items reflect impulse control and self-discipline/restraint (Maloney, Grawitch, & Barber, 2012; Morean et al., 2014). In our population, scores on the scale were normally distributed and the internal consistency was $\alpha=0.83$.

Ethics

The Norwegian regional ethics committee approved the study (ref: 2012/1131/REK). Participation was voluntary and it was clearly stated that non-participation would have no consequences for the treatment provided. The structured interview was developed in collaboration with clinicians to ensure its clinical usefulness as part of the standard assessment of incoming patients.

Analysis strategy

As we expected prevalence of victimization to differ depending on gender and offender status (yes/no), descriptions of victimization were stratified accordingly. Further, all statistical analyses have been done stratified by offender status. We used chi-square and t-tests to compare victimized and non-victimized groups on a number of independent variables of interest. Finally, we estimated odds ratios (OR), adjusted odd ratios (aOR) with 95%

confidence intervals (CI) using logistic regression models with victimization (yes/no) as the dependent variable. The independent variables for the unadjusted regression analyses were selected based on previous research (Koo et al., 2008; Kushel et al., 2003; McElrath et al., 1997; Pratt et al., 2014; Vaughn et al., 2010; You et al., 2011), or on the bivariate analyses. Additionally, we controlled for age, gender, previous treatment and whether the patients were selected for inpatient treatment or OMT. Variables that were significant in unadjusted regression analyses were included in the adjusted models. The same procedure was followed to perform additional regression analyses where violence-victimization was the dependent variable (Table S1 and S2). We used IBM SPSS 23 for statistical analyses.

RESULTS

Prevalence of Victimization

Fifty-nine per cent of participants had been victims of at least one crime in the 6 months prior to entering substance use treatment (Table 1). A higher proportion of offenders reported victimization compared to non-offenders (69% and 43% respectively, $p < 0.001$). In a life-time measure, offending women reported the highest proportion of sexual victimization, followed by non-offending women and offending and non-offending men (Table 1).

For subtypes of victimization, the pattern was the same: Offenders reported more of both property- and violence-victimization compared to non-offenders. Women reported more of both property- and violence-victimization compared to men (Table 1).

The 324 participants who had experienced victimization reported 3112 incidents of victimization in the 6 month period, with the mean and median number of victimization incidents highest among women (offenders: mean 17, median 5; non-offenders: mean 10, median 4) compared to men (offenders: mean 9, median 3; non-offenders: mean 5, median 2) (Table 1).

<Insert Table 1>

As shown in Figure 1, the proportions of men and women who had both been victimized and offended in the last 6 months were similar (men: 44%, women: 43%), while the proportion of women who had been victimized only was larger (women: 21%, men: 13%), however not statistically significant, $p = 0.054$.

<Insert Figure 1>

Characteristics of Victimized Persons by Offender Status

Regardless of offender status, those who had been victimized had higher prevalence of illicit benzodiazepine use and intravenous substance use, and reported higher severity of dependence and higher psychological distress (Table 2). Victimized non-offenders had higher prevalence of stimulant use, used a higher number of different substances, had higher prevalence of sexual victimization, unstable housing, a substance using main social network, and reported lower self-control. Victimized offenders had lower prevalence of alcohol use and higher prevalence of illicit opiate use, and were less likely to be selected for in-patient treatment. Non-offenders were on average 10 years older than offenders.

<Insert Table 2>

Factors Associated with Victimization in Non-offenders and Offenders

Results from logistic regression analysis for non-offenders and offenders are presented in Table 3 and 4. For non-offenders, victimization was associated with stimulant use (aOR: 3.07, CI: 1.39-6.75), higher number of substances used (aOR: 1.27, CI: 1.04-1.56), higher psychological distress (aOR: 1.67, CI: 1.02-2.75) and unstable housing (aOR: 5.42, CI: 1.86-15.73). For offenders, victimization was associated with intravenous substance use (aOR: 1.90, CI: 1.06-3.40) and having ever attempted suicide (aOR: 2.08, CI: 1.22-3.55).

<Insert Table 3 and 4>

In additional analyses, with violence-victimization as the outcome variable, results were similar with some exceptions: For non-offenders (Table S1), violence-victimization was strongly associated with a mainly substance using social network (aOR: 2.70, CI: 1.18-6.14), while for offenders (Table S2) violence-victimization was associated with ever experiencing sexual violence (aOR: 2.00, CI: 1.03-3.90).

DISCUSSION

Nearly two thirds of substance users reported victimization in the last 6 months, with a mean of 10 victimization incidents per person in the 6 month period. The prevalence of victimization was higher for offenders compared to non-offenders, and for women compared to men. Factors associated with victimization were generally similar for non-offenders and offenders; unstable housing seemed to be a particularly relevant and modifiable risk factor for victimization.

The high prevalence of victimization in this sample confirms previously reported levels of victimization among substance users (French et al., 2004; McElrath et al., 1997; McKeganey et al., 2005; Stevens et al., 2007) and the high number of victimization incidents per victim demonstrated the high level of repeat victimization in the population. In a 2015 general population survey in Norway (n=6393), less than 2% reported violence-victimization and less than 6% property-victimization (Statistics Norway, 2017). Comparing our study population to this general population, we see that the prevalence was respectively 16 times higher and 8 times higher for violence-victimization and property-victimization. Life-time sexual victimization was also very high for both genders; one in ten men reported sexual victimization, while it was reported by nearly one third of non-offending women and over half of offending women. This falls in line with previous findings in substance using (McKeganey et al., 2005) and offending populations (McClellan, Farabee, & Crouch, 1997), and is a specific concern for this already vulnerable population.

Our data show that both offender status and gender influence the reported proportions of victimization and number of incidents. Offenders reported more victimization compared to non-offenders, and women reported more victimization compared to men. Looking at violence in particular, half of offending women had experienced violence-victimization,

compared to one third of offending men, one fourth of non-offending women and one fifth of non-offending men. This pattern of offenders experiencing more victimization compared to non-offenders has been reported previously (McElrath et al., 1997). Further, women reported a higher number of violence-victimization incidents compared to men, indicating that women substance users who are victimized experience a higher summed victimization load. Similarly increased victimization loads have been found among women in other substance using populations (Stevens et al., 2007; Titus et al., 2003).

Stimulant use and use of a higher number of substances were associated with victimization for non-offenders only. However, the prevalence of stimulant use and the number of substances used were higher among offenders compared to non-offenders, and have previously been associated with offending in this sample (Skjærvø et al., 2017), and in other samples (Darke et al., 2010; Stavseth, Røislien, Bukten, & Clausen, 2017). It is important to keep in mind that all participants in this study qualified for substance use treatment, indicating the severity of their substance use. This may suggest that stimulant use and increased polysubstance use are associated with both victimization and offending independent of each other, although the associations with victimization may be obscured by a ceiling effect among offenders. The association of stimulant use to victimization has been seen previously (Koo et al., 2008; McElrath et al., 1997) and could be a result of the pharmacological effects (McElrath et al., 1997). As stimulant use is associated with offending, another explanation is that stimulant users socialize with other stimulant users and thus may be more exposed to offenders, in line with routine activity/lifestyles theory (Pratt & Turanovic, 2015). It is worth mentioning that a recent Australian study investigating victimization in a period of 12 months found no association between regular methamphetamine use and victimization (Darke et al., 2010).

Intravenous use of substances was associated with victimization among offenders only. Intravenous use can be seen as a marker for more severe substance use (Schneider, Burnette, Ilgen, & Timko, 2009), and it is possible that this increased severity of use can result in reduced ability to protect oneself or one's property (Goldstein, 1985), or avoid risky settings, which again could cause the association with victimization.

Higher psychological distress was associated with victimization among non-offenders, while ever attempting suicide was associated with victimization among offenders. Increased psychological distress and suicidal behavior have previously been associated with both violence- and property-victimization (Ruback et al., 2013; Stevens et al., 2007; You et al., 2011). Longitudinal studies have found evidence of a causal connection in both directions, where victimization can lead to increased psychological distress and suicidal risk, and also that psychological distress can lead to increased risk of victimization (Stevens et al., 2007). Adding to this that a reliable predictor of future victimization is previous victimization (Ousey et al., 2008; Ruback et al., 2013), it is important that victimization among substance users is identified and addressed to ensure appropriate and holistic treatment is provided, including focus on mental health aspects.

In homeless or marginally housed populations, victimization rates are high (Kushel et al., 2003). In our results we saw a strong association between unstable housing and victimization among non-offenders. Although unstable housing as a risk factor for victimization appears to be specific to non-offenders, it should be taken into consideration that both offender groups have an equally high prevalence of unstable housing. Thus, having stable housing may be an important aspect of preventing victimization, and provision of safe housing should be a focus for treatment providers.

Our results were inconclusive for some variables that have previously been associated with victimization. Having a mainly substance using social network should, according to routine activities/lifestyles theory, be a risk factor for victimization, however in our results the importance of social network was inconclusive. It is possible that as part of the illicit substance using culture, it is not the time spent with a substance using network that influences level of victimization, but rather the need to seek out insecure settings where illicit substances can be obtained. Self-control is considered central for victimization in some theories (Schreck, 1999), but did not appear to have an effect in our analyses. A study of adolescents found that low self-control had a stronger association to offending than victimization, when including both in a bivariate model (Posick, 2013). Similarly, a recent meta-analysis found that the association between self-control and victimization was present, but moderated when controlling for deviant behavior such as offending and substance use (Pratt et al., 2014), which could be a possible reason why we found no strong association in our analyses. Self-control is also a difficult concept to measure, and how it is measured varies greatly, which could also explain differences in findings.

Methodological Considerations

Our findings must be interpreted in light of several methodological considerations. In this cross-sectional study we could not investigate causal relationships between victimization and other variables, the independent variables in our analyses must thus be interpreted as associated with the victimization outcomes, and not formal predictors of victimization. In the non-offender group, the smaller sample size reduces the statistical power, which could increase the risk of Type II errors (not detecting an association that is indeed present). We did not stratify offenders according to specific types of offences, such as violence or traffic-violations, as most of the offenders in this sample committed more than one type of offence. Over half of patients entering treatment in the study-period did not participate, mostly due to

logistical challenges related to the treatment centres. We cannot rule out a selection bias in our sample, some of the most severe cases of substance use and dual diagnoses were not included. However, we consider this sample representative of persons entering substance use treatment in Norway and in similar countries and contexts. Generalizability to populations beyond severe substance users may be limited. This large and nationwide sample has low rates of missing data due to data collection by trained interviewers. The interview included a rich array of variables, allowing us to adjust for a number of substance use and psychosocial variables in analyses.

Conclusions and Clinical Implications

Recent property- and violence-victimization, as well as life-time sexual victimization, were high in this substance-using population, in particular among offenders and women. The added burden of victimization was associated with markers for more severe substance use and poor mental health. Unstable housing was particularly linked to victimization among non-offenders. For clinicians, correctional workers and policy makers, awareness of the overlap between victimization and offending is important. A large number of persons who are imprisoned or in substance use treatment are in need of victim care and support. This is particularly important in light of the relationship between victimization, negative mental health outcomes and substance use, which again all are associated with increased risk for committing crime. Clinicians should approach the subjects of victimization and offending with the intention of including the patients' experiences in treatment. Screening for victimization and the associated mental health comorbidities, such as depression, anxiety and suicidal thoughts would ensure that patients with need for specific interventions were identified. Effective treatment for substance use and comorbidities could contribute to reduction of victimization and offending, and thus reduce the costs of imprisonment, future victimization and perhaps welfare costs by reducing negative mental health effects and improving employability. It is

important to keep in mind that although victimization rates were highest among women, the rates observed among men were also much higher compared to general population samples, meriting that attention is given to victimization and associated negative effects among both genders. A holistic approach where clinicians address substance use and its comorbidities, while facilitating safer social contexts for the patient (e.g. safe and stable housing) may be important both in reducing victimization and in improving outcomes of substance use treatment.

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