Perceived devaluation among a cohort of street-involved youth in Vancouver, Canada

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Abstract

Background: Perceived devaluation is a barrier to seeking mental and physical health services among people who use illicit drugs.

Objective: Assessing the prevalence and correlates of perceived devaluation within a cohort of street-involved youth.

Methods: Data were drawn from an open prospective cohort of street-involved youth who use illicit drugs (aged 14-26 at study enrollment) between December 2013 and May 2015 in Vancouver, Canada. Perceived devaluation was measured using an adapted version of Perceived Devaluation and Discrimination scale. Multivariable generalized estimating equations were constructed to examine factors independently associated with high perceived devaluation.

Results: Among 411 street-involved youth, 95.1% reported high perceived devaluation at some point during the study period. In a multivariable analysis, youth who reported high perceived devaluation were significantly more likely to engage in: unprotected sex (Adjusted Odds Ratio [AOR] = 1.56, 95% Confidence Interval: 1.03-2.37); heavy alcohol use (AOR = 2.31, 95% CI: 1.22-4.36); and daily heroin use (AOR = 2.07, 95% CI: 1.16-3.70). Youth who resided in the Downtown Eastside neighbourhood were significantly less likely to report high perceived devaluation (AOR = 0.41, 95% CI: 0.26-0.65).

Conclusion: Perceived devaluation was extremely prevalent among street-involved youth in our sample. We also observed that youth most in need of health and social services were significantly more likely to report high levels of perceived devaluation which may result in a reluctance to seek out key services and supports. These findings highlight the need to implement stigma reduction interventions for vulnerable youth in this setting.

Introduction

Across numerous international settings, people who use illicit drugs (PWUD) are often portrayed as weak, immoral, or dangerous (Ahern, Stuber, & Galea, 2007; Kulesza, Larimer, & Rao, 2013). Negative attitudes towards PWUD have been linked to the criminalization of drug use such that PWUD are often viewed as deserving of punitive treatment (Ahern et al., 2007; Janulis, Ferrari, & Fowler, 2013; Kulesza et al., 2013). As a result, PWUD experience varying degrees of stigmatization − a social process involving stereotyping, labelling, and status loss (Goffman, 2009). Substance use-related stigma includes multiple types of stigma: enacted/experienced (i.e., stigma that is enacted through interpersonal acts of discrimination), anticipated (i.e., fear of stigma, whether or not it is actually experienced), perceived (i.e., perception of the prevalence of stigmatizing attitudes in the community), self/internalized (i.e., acceptance of experienced or perceived stigma as valid, justified), and compound (i.e., the intersecting of stigmas faced by individuals who are part of multiple marginalized groups) stigma (Ahern et al., 2007; Brezing & Marcovitz, 2016; Link, Struening, Rahav, Phelan, & Nuttbrock, 1997).

Stigmatizing attitudes towards PWUD are more pronounced among more visible and socially marginalized sub-populations, such as street-involved youth who have high rates of illicit drug use and are unstably housed (Ahern et al., 2007; Kidd, 2003, 2007). In addition to being a highly stigmatized population, street-involved youth are also at risk for a range of adverse health-related outcomes including reduced access to healthcare, increased risk of substance use disorders, and involvement with the criminal justice system (Kidd, 2003, 2007).

Perceived devaluation is a facet of perceived stigma and occurs when PWUD feel that the majority of the general public believe common negative stereotypes about people who use illicit drugs

(Ahern et al., 2007; Link et al., 1997). Among PWUD, perceived devaluation has been associated with difficulty accessing healthcare, avoidance of seeking care and treatment, heightened stress responses, participation in unhealthy behaviours, and non-participation in healthy behaviours (Ahern et al., 2007). Preventing and treating perceived devaluation is particularly important given that negative outcomes associated with perceived devaluation persist after the stigmatizing factors (e.g., drug use and/or street-involvement) are discontinued (Ahern et al., 2007; Kulesza et al., 2013; Link et al., 1997). Most concerning, the cumulative impact of experiencing several forms of stigma and discrimination in various settings (e.g., public spaces, service or healthcare providers) contributes to the internalization of negative self-perception and increased risk of mental health conditions (Ahern et al., 2007; Link et al., 1997; Rivera, DeCuir, Crawford, & Fuller, 2015).

Although the body of evidence on drug use-related stigma is rapidly expanding, there is limited longitudinal research investigating stigma associated with illicit substance use (Ahern et al., 2007; Kulesza et al., 2013). Street-involved youth who use drugs often report experiencing perceived stigma from the general public, their family and friends, as well as healthcare providers (Kidd, 2007; Livingston, Milne, Fang, & Amari, 2012); however, our understanding of stigma associated with illicit drug use over time is limited in the context of street-involved youth who experience multiple and intersecting stigmas (e.g., ageism; racism). Therefore, this study examines the prevalence and correlates of perceived devaluation among street-involved youth longitudinally. We hypothesize that most street-involved youth experience high perceived devaluation related to substance use and that feelings of perceived devaluation will be independently associated with markers of higher intensity substance use and risky behavior.

Methods

We obtained longitudinal data from the At-Risk Youth Study (ARYS) which is an ongoing prospective cohort study established in 2005 among street-involved youth in Vancouver, Canada. Details of the study design and recruitment strategies have been previously described (Wood, Stoltz, Montaner, & Kerr, 2006). In brief, youth were eligible to participate in ARYS if they met the following criteria: I) aged 14 to 26 years old, II) self-reported illicit drugs use other than or in addition to cannabis in the previous month, III) provided written informed consent, and IV) were street-involved, defined as being temporarily or absolutely without housing in the last six months, or having accessed street-based youth services at any time during that period. Snowball and outreach sampling was utilized to recruit youth into the cohort where they complete an interviewer-administered questionnaire upon enrolment and bi-annually thereafter. The questionnaire covers a wide range of topics including socio-demographics, drug and sex-related risk behaviours, encounters with law enforcement, and healthcare utilization. At the baseline and follow-up study visits, youth also meet with a study nurse to provide blood samples for HIV and HCV tests. The study was approved by the UBC-Providence Health Care Research Ethics Board (Approval #: H04-50160).

The primary outcome of interest in this study was perceived devaluation which was measured using three statements: most people think that someone who uses drugs is a good person; most people think that someone who uses drugs is not dangerous; and most people think that someone who uses drugs is reliable (Ahern et al., 2007; Karamouzian, Shoveller, et al., 2017). Participants indicated agreement with these statements using a 5-point Likert scale: 1 (strongly agree) to 5 (strongly disagree). Summed scores ranged between 3 to 15 and mean perceived devaluation scores were calculated by dividing the final scores by 3. Based on previous research (Karamouzian, Shoveller, et al., 2017), mean scores were categorized into two levels of low/moderate (mean score

≤3) and high (mean score >3). Higher scores of perceived devaluation indicate lower self-esteem and self-worth. These measures of perceived stigma were available on the questionnaire between December 2013 and May 2015. Therefore, data for all variables in this analysis assessing experiences, circumstances, and behaviours in the last six months were restricted to that period.

Explanatory variables of interest were selected *a priori* based on their hypothesized relationship with perceived devaluation. Data were collected on age (per year older), Caucasian ethnicity (yes or no), female sex (yes or no), lesbian/gay/bisexual/transgender (LGBT) (yes or no), homelessness (yes or no), high school completion (≥high school or <high school), regular employment (yes or no), residence in the downtown eastside, a well-known neighbourhood in Vancouver with a high concentration of poverty, substance use, social services (yes or no), as well as childhood physical abuse (yes or no), childhood physical neglect (yes or no), childhood sexual abuse (yes or no), childhood emotional abuse (yes or no), childhood emotional neglect (yes or no) as measured by responses to the Childhood Trauma Questionnaire (Bernstein & Fink, 1998). Other factors examined included unprotected sex (yes or no), involvement in sex work (yes or no), and reporting depression symptoms at baseline, defined as a score of ≥22 or <22 on the Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977). Substance use-related variables included heavy alcohol use, defined as >14 drinks per week or >4 drinks on one occasion for men and >7 drinks per week or >3 drinks on one occasion for women (Abuse & Alcoholism, 2007) (yes or no), injection drug use (yes or no), binge drug use, defined as a period of more intense drug use than typical (yes or no), daily crystal methamphetamine use (yes or no), daily cocaine use (yes or no), daily heroin use (yes or no), daily crack use (yes or no), daily nonmedical prescription opioid use (yes or no), and accessing drug/alcohol treatment (yes or no). All variables refer to the six-month period prior to the interview, unless otherwise specified.

We first assessed participants' baseline descriptive characteristics stratified by perceived devaluation scores in the past six months. Pearson's chi-square test and the Fisher's exact tests for cell counts less than five were used to make comparisons. The longitudinal relationship between perceived devaluation scores and explanatory risk factors over time were analyzed using generalized estimating equations (GEE) with logit link function. GEE is a general statistical approach to fit models for longitudinal data that provides standard errors adjusted by multiple observations per person using an exchangeable working correlation structure and addresses any missing data through an estimating mechanism that utilizes all available pairs method to include the missing data from intermittent missing data or dropouts (Ballinger, 2004; Hanley, Negassa, & Forrester, 2003). First, bivariate GEE models were used to assess the association between perceived devaluation and each explanatory variable. All explanatory variables that were associated with perceived devaluation in unadjusted analyses at $p<0.10$ were eligible for inclusion in a full multivariable model. The multivariable model with the best overall fit was determined using a backward model selection procedure and the quasi-likelihood under the independence model criterion statistic (QIC), where variables with the greatest p-value were removed in an iterative process, and the model with the lowest QIC value was selected (Pan, 2001). All statistical modelling were conducted using SAS software 9.4 (SAS, Cary, NC) and all reported p-values are two-sided.

Results

A total of 414 youth completed the study questionnaire during the study period; 411 participants responded to the perceived devaluation questions and were included in the current analyses. The median (IQR) age of the participants was 24.51 (21.85-27.29). One-third of participants were female (n = 140, 34%), and 253 (62%) self-reported Caucasian ancestry.

Characteristics of the participants stratified by perceived devaluation score are presented in Table 1. Overall, 86% of youth (n = 355) reported a high perceived devaluation score at their first study visit during the study period, and 95.1% (n = 391) reported a high perceived devaluation score at some point during the study period. The median number of study visits per participant during the 18 month study period was 2 (IQR = 1–3). For the 293 participants who had more than one study visit, the median follow-up time per participant was 12 months (IQR = 9–12). This sample contributed 764 observations, of which 670 (87.7%) included a report of high perceived devaluation score.

Insert Table 1 here

The results from the bivariate and multivariable results are presented in Table 2. In the multivariable model, unprotected sex (Adjusted Odds Ratio [AOR] = 1.56, 95% CI: 1.03–2.37), heavy alcohol use (AOR = 2.31, 95% CI: 1.22–4.36), and daily heroin use (AOR = 2.07, 95% CI: 1.16–3.70) were positively and independently associated with high perceived devaluation; residence in the downtown eastside neighbourhood (AOR = 0.41, 95% CI: 0.26–0.65) was negatively associated with high perceived devaluation.

Insert Table 2 here

Discussion

This study found that an overwhelming majority (95%) of street-involved youth reported experiencing high perceived devaluation related to substance use. Reported feelings of high perceived devaluation were significantly associated with residence outside of Vancouver's

Downtown Eastside neighbourhood, unprotected sex, heavy alcohol use, and daily heroin use in the last six month.

While the knowledge base concerning perceived drug-related stigma among youth is lacking, our results are consistent with findings of cross-sectional studies among adult PWUD suggesting a prevalence of perceived devaluation ranging from 60% (Luoma et al., 2007) to as high as 85% (Ahern et al., 2007). The high prevalence of perceived devaluation in this study may be attributed to street-involved youth's experiences of several layers of the stigma that include normative perceptions about street-involved youth's risky sexual and drug use practices and multiple accounts of discriminatory behaviours associated with being street-entrenched (Ahern et al., 2007; Karamouzian, Knight, Gilbert, & Shoveller, 2017). Youth who use drugs often report perceived stigma from the general public, their family and friends, as well as healthcare providers (Kidd, 2007; Livingston et al., 2012), which may be linked with the use of stigma as a drug use prevention tool in the "War on Drugs" (Williamson, Thom, Stimson, & Uhl, 2014). This is especially concerning given the adverse mental and physical health outcomes associated with perceived devaluation such as heightened stress responses, avoidance of seeking care and treatment (e.g., harm reduction services), and participation in unhealthy behaviours (Ahern et al., 2007; Kulesza et al., 2013; Livingston et al., 2012).

Socio-structural variables, such as residence in the Downtown Eastside neighbourhood, were associated with lower levels of perceived devaluation. This finding may be attributed to normalized and generally accepted substance use practices in this neighbourhood, which has an active and open drug market as well as high rates of public drug use (Fast, Small, Wood, & Kerr, 2009; Wood & Kerr, 2006). Moreover, services in this neighbourhood work hard to be low-threshold and inclusive, which may help reduce young people's feelings of perceived stigma.

Educating healthcare and service providers who work with street-involved youth who use drugs outside such neighbourhoods about substance use-related stigma reduction strategies could help improve self-perceived feelings of stigma among marginalized youth (Livingston et al., 2012).

Our findings also indicated that a particularly at-risk subset of street-involved youth who engage in risky sex, heavy alcohol use, and daily heroin use are more likely to have higher perceived feelings of devaluation. Although people who use substances other than heroin are also likely to experience similar stigmatizing practices (Ahern et al., 2007) and high perceived devaluation was extremely prevalent across all substance use patterns within our study (ranging from 80%-100%), stigmatizing attitudes toward people who use heroin are especially pervasive and significant within both the public and PWUD (Brown, 2015; Janulis et al., 2013). Indeed, people who use substances other than heroin such as ecstasy, cocaine, or amphetamine users, have been found to distance themselves from heroin users and view them as 'drop outs' or 'losers' or 'dirty' (Coomber, 1997; McEvoy, 2001).

These findings highlight the importance of ensuring access to effective and appropriate substance use treatment and promoting health-seeking behaviours for street-involved youth. It is noteworthy that less than half of our participants had sought addiction treatment services during the six months before their first study visit. Although engagement with addiction treatment was not significantly lower among participants with higher levels of perceived devaluation in the multivariable analysis, 89% of those who had sought treatment reported high feelings of perceived devaluation. This is consistent with previous studies indicating that episodes of engagement with substance use disorder treatment can contribute to stigma-related rejection (Luoma et al., 2007; Sher, McGinn, Sirey, & Meyers, 2005). Despite evidence suggesting that a positive physician-patient rapport is associated with a lower likelihood of patients avoiding treatment (Moore et al., 2004), previous

research has found that deficiencies in healthcare remain for people who use drugs. These include reports of poor skills or knowledge in the treatment of substance use disorders, overemphasis on abstinence and limited support available to assist staff in providing proper care, alongside difficult experiences with patients perceived as 'violent' or 'manipulative' by health care providers (Avery et al., 2017; Siegfried, Ferguson, Cleary, Walter, & Rey, 1999; Van Boekel, Brouwers, Van Weeghel, & Garretsen, 2013, 2015). Given that links to healthcare are particularly important for youth who are at an increased risk of sexually transmitted and blood borne infections (Kerr et al., 2009; Marshall, Kerr, Shoveller, Montaner, & Wood, 2009), our findings indicate a need to develop and implement evidence-based stigma reduction interventions as well as scaling up peer-led harm reduction efforts to proactively address perceived stigma towards PWUD.

The current study is limited by the non-random community-recruited sample of street-involved youth that may reduce the generalizability of our findings; however, the demographic characteristics of our participants are similar to other research studies involving this marginalized population in British Columbia (Martin, Lampinen, & McGhee, 2006; Ochnio, Patrick, Ho, Talling, & Dobson, 2001). Our data collection procedure was also subject to self-reported, recall, and social desirability biases, however, studies among PWUD suggest that self-report data is usually consistent with actual behaviour (Brener, Collins, Kann, Warren, & Williams, 1995; Darke, 1998; Rosenbaum, 2009). Moreover, data was collected on more recent variables (i.e., last six months) to increase the accuracy of self-reported data.

Conclusion

In summary, high perceived devaluation was extremely prevalent among street-involved youth in Vancouver. Our findings indicate that negative perceptions of substance use disorders as

a willful choice, moral weakness or character flaw endure. Stigma reduction interventions are urgently needed to help reduce the health-related risks associated with perceived feelings of stigma among young PWUD. In particular, improvements to youth-specific services that reduce stigma towards PWUD among staff and increase mental health services for youth may facilitate entry into key health and social services including substance use treatment and support meaningful reductions in drug-related harms.

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Table 1: Sociodemographic and other risk factors associated with high perceived devaluation at baseline[a] among street-involved youth in Vancouver, Canada (n = 411).

| Characteristic | Total (%) (n=411) | Perceived Devaluation | | Odds Ratio (95% CI) | P-value[g] |
		High (%) (n=355)	Low (%) (n=56)		
Age (Median, IQR)	24.5 (21.8, 27.2)	24.1 (27.0, 21.7)	26.7 (23.2, 29.0)	-	0.002
Caucasian ancestry	253 (61.6)	224 (88.5)	29 (11.5)	1.59 (0.90-2.80)	0.106
Female sex	140 (34.1)	127 (90.7)	13 (9.3)	1.84 (0.95-3.55)	0.065
LGBT[b]	91 (22.1)	79 (86.8)	12 (13.2)	1.07 (0.54-2.13)	0.841
Homelessness[c]	203 (49.4)	175 (86.2)	28 (13.8)	0.98 (0.55-1.72)	0.937
Education (≥High school)	141 (34.3)	118 (83.7)	23 (16.3)	0.73 (0.41-1.30)	0.290
Employment[c]	189 (46.0)	166 (87.8)	23 (12.2)	1.26 (0.71-2.23)	0.427
Residence in DTES[c,d]	135 (32.8)	110 (81.5)	25 (18.5)	0.56 (0.31-0.99)	0.043
Physical abuse	99 (24.1)	87 (87.9)	12 (12.1)	1.28 (0.64-2.54)	0.475
Physical neglect	104 (25.3)	86 (82.7)	18 (17.3)	0.74 (0.40-1.37)	0.350
Sexual abuse	58 (14.1)	53 (91.4)	5 (8.6)	1.87 (0.71-4.93)	0.195
Emotional abuse	177 (43.1)	159 (89.8)	18 (10.2)	1.75 (0.95-3.22)	0.067
Emotional neglect	173 (42.1)	154 (89.0)	19 (10.9)	1.67 (0.92-3.04)	0.087
Depression	175 (42.6)	153 (87.4)	22 (12.6)	1.17 (0.65-2.14)	0.602
Unprotected sex[c]	248 (60.3)	222 (89.5)	26 (10.5)	1.99 (1.13-3.54)	0.017
Sex work[c]	46 (11.2)	41 (89.1)	5 (10.9)	1.33 (0.50-3.53)	0.563
Heavy alcohol use[c]	96 (23.4)	85 (88.5)	11 (11.5)	1.29 (0.64-2.60)	0.480
Injection drug use[c]	201 (48.9)	173 (86.1)	28 (13.9)	0.95 (0.54-1.67)	0.860
Binge drug use[c]	211 (51.3)	187 (88.6)	24 (11.4)	1.48 (0.84-2.62)	0.172
Daily meth use[c,e]	109 (26.5)	97 (89.0)	12 (11.0)	1.38 (0.70-2.72)	0.353
Daily heroin use[c,e]	105 (25.5)	95 (90.5)	10 (9.5)	1.68 (0.82-3.46)	0.156
Daily cocaine use[c,e]	6 (1.5)	5 (83.3)	1 (16.7)	0.78 (0.09-6.85)	0.827
Daily crack use[c,e]	20 (4.9)	16 (80.0)	4 (20.0)	0.61 (0.19-1.90)	0.457
Daily PO use[c,e,f]	14 (3.1)	14 (100.0)	0 (0.00)	0.04 (0.02-0.08)	<0.001
Addiction treatment[c]	199 (48.4)	178 (89.4)	21 (10.5)	1.67 (0.94-2.99)	0.079

a Characteristics for those who reported feelings of perceived devaluation were measured at their first visit (during the study period: December 2013 and May 2015), which involved a report of perceived devaluation.
b LGBT: Lesbian, Gay, Bisexual, Transgender.
c Refers to activities and behaviours in the past six months.

d DTES: Downtown eastside: A well-known neighbourhood in Vancouver with a high concentration of poverty, substance use, and social services.

e refers to non-injection drug use.

f PO: Prescription Opioid

g P-values were calculated using the Mann–Whitney tests for continuous variables and Pearson's chi-squared tests for categorical variables.

Table 2: Bivariate and multivariable GEE model for factors associated with high perceived devaluation among street-involved youth in Vancouver, Canada (n = 411).

Characteristics	Unadjusted		Adjusted[f]	
	Odds Ratio (95% CI)	P-value	Odds Ratio (95% CI)	P-value
Age (Per year older)	0.90 (0.84-0.96)	0.001	0.93 (0.86-1.00)	0.057
Caucasian ethnicity[a]	1.70 (1.09-2.65)	0.019	1.62 (0.99-2.64)	0.060
Female sex[a]	1.53 (0.92-2.53)	0.099		
LGBT[a,b]	1.32 (0.74-2.33)	0.350		
Residence in DTES[a,c,d]	0.48 (0.31-0.74)	0.001	0.41 (0.26-0.65)	<0.001
Physical abuse[a]	1.11 (0.64-1.91)	0.716		
Physical neglect[a]	0.71 (0.43-1.16)	0.167		
Sexual abuse[a]	1.15 (0.58-2.26)	0.695		
Emotional abuse[a]	1.27 (0.80-2.03)	0.311		
Emotional neglect[a]	1.71 (1.05-2.78)	0.029	1.63 (0.98-2.70)	0.060
Depression[a]	1.19 (0.75-1.90)	0.463		
Unprotected sex[a,c]	1.85 (1.26-2.72)	0.002	1.56 (1.03-2.37)	0.036
Sex work[a,c]	1.14 (0.56-2.33)	0.713		
Heavy alcohol use[a,c]	1.88 (1.09-3.24)	0.023	2.31 (1.22-4.36)	0.010
Injection drug use[a,c]	1.13 (0.73-1.76)	0.585		
Binge drug use[a,c]	1.40 (0.93-2.09)	0.107		
Daily meth use[a,c]	1.16 (0.74-1.82)	0.521		
Daily heroin use[a,c]	1.74 (1.03-2.95)	0.040	2.07 (1.16-3.70)	0.014
Daily cocaine use[a,c]	1.54 (0.25-9.28)	0.640		
Daily crack smoking[a,c]	1.01 (0.35-2.91)	0.987		
Daily PO use[a,c,e]	2.70 (0.71-10.34)	0.147		
Addiction treatment[a,c]	1.61 (1.05-2.49)	0.031	1.47 (0.92-2.33)	0.106

a Comparison is yes versus no.
b LGBT: Lesbian, Gay, Bisexual, Transgender.
c Refers to activities and behaviours in the past six months.
d DTES: Downtown eastside: A well-known local neighbourhood with a high concentration of poverty, substance use, and social services.
e PO: Prescription Opioid
f Variables significant at the P-value< 0.10 threshold in the bivariate analyses were considered for the multivariable GEE analysis.