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Survival sex work involvement among street-involved youth who use drugs in a Canadian setting

Jill Chettiar[1], Kate Shannon[1,2], Evan Wood[1,2], Ruth Zhang[1], Thomas Kerr[1,2]

[1]British Columbia Centre for Excellence in HIV/AIDS, St. Paul's Hospital, 608-1081 Burrard Street, Vancouver BC, Canada V6Z 1Y6
[2]Division of AIDS, Department of Medicine, University of British Columbia, Vancouver BC, Canada
Address correspondence to Thomas Kerr, E-mail: uhri-tk@cfenet.ubc.ca

ABSTRACT

Background Drug users engaged in survival sex work are at heightened risk for drug- and sexual-related harms. We examined factors associated with survival sex work among street-involved youth in Vancouver, Canada.

Methods From September 2005 to November 2007, baseline data were collected for the At-Risk Youth Study (ARYS), a prospective cohort of street-recruited youth aged 14–26 who use illicit drugs. Using multiple logistic regression, we compared youth who reported exchanging sex for money, drugs etc. with those who did not.

Results The sample included 560 youth: median age 22; 179 (32%) female; 63 (11%) reporting recent survival sex work. Factors associated with survival sex work in multivariate analyses included non-injection crack use [adjusted odds ratio (AOR) = 3.45, 95% confidence interval (CI): 1.75–6.78], female gender (AOR = 3.02, 95% CI: 1.66–5.46), Aboriginal ethnicity (AOR = 2.35, 95% CI: 1.28–4.29) and crystal methamphetamine use (AOR = 2.02, 95% CI: 1.13–3.62). In subanalyses, the co-use of crack cocaine and methamphetamine was shown to be driving the association between methamphetamine and survival sex work.

Conclusions This study demonstrates a positive interactive effect of dual stimulant use in elevating the odds of survival sex work among street youth who use drugs. Novel approaches to reduce the harms associated with survival sex work among street youth who use stimulants are needed.

Keywords Canada, prostitution, street youth, survival sex work

Introduction

Street-involved youth in North American cities are vulnerable to an array of severe health-related harms, including elevated rates of substance use, mental illness, violence, blood-borne and sexually transmitted infections, and mortality.[1–3] Studies from various Canadian settings indicate that the prevalence of illicit drug use among street youth is high,[4] with adverse risk environments of street entrenchment precipitating exposure to drug use.[1–3] A recent study of street youth in Montreal reported an incidence of initiation into injection drug use of 6.8/100 person-years.[5] Street youth who use drugs are also disproportionately subject to social marginalization, loss of familial support and decreased education and employment opportunities.[6–8]

In Canada, there are concerns that street youth are increasingly becoming engaged in survival sex work as a means to generate income.[6,7,9,10] The antecedents of sex work initiation were explored among a sample of female street youth in Montreal, Canada, and found to include sexual and emotional abuse, and runaway behavior.[9] This incidence of sex work initiation among street youth in this study was 11.1/100 person-years. Studies examining sex

Jill Chettiar, Project Coordinator
Kate Shannon, Assistant Professor
Evan Wood, Associate Professor
Ruth Zhang, Senior Statistician
Thomas Kerr, Assistant Professor

work initiation in the Canadian setting have also found the median age of initiation to be between 14 and 17 years,[9,10] and early initiation in adolescence (<18 years) has been associated with elevated odds of HIV infection.[11] Drug-using youth engaged in survival sex work are more likely to be victims of emotional, sexual and physical violence, and face intense stigmatization and marginalization.[9,10,12]

Although much attention has been given to adult drug users who exchange sex, and despite the emerging knowledge outlined above, much less is know about the characteristics and drug use patterns of street-involved youth engaged in survival sex work. We therefore undertook this study to examine factors associated with survival sex work among street-involved youth in a Canadian setting.

Methods

The At-Risk Youth Study (ARYS) is a prospective cohort study of Vancouver street-involved youth that has been described in detail previously.[13] The study was designed to explore the natural history of injection drug use, including the initiation of injecting. Briefly, participants were recruited through snowball sampling and extensive street-based outreach. Persons were eligible for the study if they were between 14 and 26 years of age, had used illicit drugs other than or in addition to marijuana in the past 30 days and provided informed consent. This age range is consistent with other studies of street youth in Canada.[3] Further, this age range was also selected because local youth-focused programs serve individuals up to age 29, and therefore, the study is well positioned to evaluate health service among older youth. At baseline and at semi-annual follow-up visits, participants complete an interviewer-administered questionnaire and provide blood samples for HIV and hepatitis C (HCV) serology. The questionnaire elicits demographic data and information regarding injection and non-injection drug use, HIV risk behaviors, income generation, survival sex work involvement, health service utilization and sexual activity. The questionnaire is based on a previous instruments developed for street youth who use drugs and adult drug users.[13–15] The survey includes a combination of standardized and non-standardized measures, and has been shown to have good reliability and validity in various studies. All participants received a monetary stipend of $20 after each visit. The study has been approved by the University of British Columbia/Providence Health Care Research Ethics Board.

All participants who completed baseline study visits between September 2005 and November 2007 were included in this analysis. The primary outcome for this study was participation in survival sex work in the previous 6 months. Survival sex work was defined as sex in exchange for money, gifts, food, shelter, clothes or drugs. Socio-economic and drug use factors considered in the analyses included age, gender, ethnicity (Aboriginal versus other), education level (less than high school versus greater than or equal to high school), having a parent who used illicit drugs, ever having lived in foster care, currently living with a family member, crack cocaine smoking, any crystal methamphetamine use, cocaine injection, heroin injection, recent incarceration and hepatitis C status. All behavioral variables, including drug use variables, refer to the previous 6 months.

Univariate and multivariate statistics were used to identify factors associated with participation in survival sex work. For univariate analyses, categorical explanatory variables were analyzed using Pearson's χ^2 test and continuous variables were analyzed using the Wilcoxon rank sum test. We then fit a multivariate logistic regression model to identify variables that were independently associated with survival sex work involvement. Variables found to be associated with survival sex work involvement in univariate analyses at $P < 0.05$ were entered into a fixed logistic model. In subanalyses, we tested for all potential interactive effects between drug use patterns and survival sex work. All reported P-values are two-sided.

Results

A total of 560 participants were included in this analysis, including 179 (32.0%) females, and 131 (23.4%) individuals of Aboriginal ancestry. The median age of study participants was 22 years old, with 56 (10.0%) participants being 18 years of age or younger. The median and inter-quartile range of participants stratified by sex work involvement are presented in Table 1. In total, 141 (25.2%) participants reported being married, 544 (97.1%) reported a history of sexual intercourse and 383 (68.4%) had less than a high school education. In total, 63 (11.3%) individuals reported actively engaging in survival sex work in the last 6 months. The univariate analyses of socio-demographic and drug use characteristics of study participants are shown in Table 1. As shown here, factors positively associated with survival sex work in the previous 6 months included older median age (23 versus 22 years, $P = 0.03$), female sex [odds ratio (OR) = 2.28, 95% confidence interval (CI): 1.34–3.88], Aboriginal ethnicity (OR = 2.24, 95% CI: 1.29–3.89), crack smoking (OR = 3.72, 95% CI: 1.94–7.14), crystal

Table 1 Factors associated with sex trade work among a cohort of sexually active street-involved youth ($n = 560$)

Characteristic	*Yes, n (%), n = 63*	*No, n (%), n = 497*	*Odds ratio (95% CI)*	*P-value*
Median age	22.7	21.9	1.11 (1.01–1.22), value = 0.033	0.03
Inter-quartile range	(20.3–24.3)	(19.6–23.7)		
Sex				
Female	31 (17.3)	148 (82.7)	2.28 (1.34–3.88)	<0.01
Male	32 (8.4)	349 (91.6)		
Aboriginal ethnicity				
Yes	24 (18.3)	107 (81.7)	2.24 (1.29–3.89)	<0.01
No	39 (9.1)	390 (90.9)		
Education level				
Less than high school	46 (12.1)	337 (87.9)	1.28 (0.71–2.31)	0.427
Greater than or equal high school	160 (90.4)	17 (9.6)		
Ever in foster care				
Yes	35 (12.5)	246 (87.5)	1.27 (0.75–2.16)	0.422
No	28 (10.0)	251 (90.0)		
Parent used illicit drugs				
Yes	35 (13.6)	223 (86.4)	1.53 (0.91–2.60)	0.139
No	28 (9.3)	274 (90.7)		
Live with family[a]				
Yes	4 (6.6)	57 (93.4)	0.52 (0.18–1.49)	0.284
No	58 (11.9)	431 (88.1)		
Crack use[b]				
Yes	51 (16.1)	265 (83.7)	3.72 (1.94–7.14)	0.01
No	12 (4.9)	232 (95.1)		
Crystal meth.[c]				
Yes	39 (14.2)	235 (85.8)	1.81 (1.06–3.10)	0.04
No	24 (8.4)	262 (91.6)		
Heroin injection				
Yes	16 (14.6)	94 (85.4)	1.46 (0.79–2.69)	0.24
No	47 (10.4)	403 (89.6)		
Cocaine injection				
Yes	9 (17.0)	44 (83.0)	1.72 (0.79–3.71)	0.17
No	54 (10.7)	453 (89.3)		
Recent incarceration				
Yes	16 (15.8)	85 (84.2)	1.65 (0.89–3.05)	0.11
No	47 (10.2)	412 (89.8)		
Hepatitis C serostatus				
Positive	13 (19.7)	53 (80.3)	2.13 (1.09–4.19)	0.03
Negative	50 (10.3)	435 (89.7)		

[a]Currently living with any family member.

[b]Non-injection crack use.

[c]Injection and non-injection crystal methamphetamine use.

methamphetamine use (OR = 1.81, 95% CI: 1.06–3.10) and hepatitis C positivity (OR = 2.13, 95% CI: 1.09–4.19).

Variables that were independently associated with survival sex work in multivariate logistic regression analyses are shown in Table 2. As shown here, female sex [adjusted odds ratio (AOR) = 3.02, 95% CI: 1.66–5.46], Aboriginal ethnicity (AOR = 2.35, 95% CI: 1.28–4.29), non-injection crack use (AOR = 3.45, 95% CI: 1.75–6.78) and crystal methamphetamine use (AOR = 2.02, 95% CI: 1.13–3.62) all remained positively associated with survival sex work involvement in multivariate analyses. In a subanalysis of two-way interactions, a significant effect was found for an

Table 2 Logistic regression analyses of factors associated with survival sex work among street-involved youth ($n = 560$)

Characteristic	*Adjusted odds ratio*	*95% confidence interval*
Gender		
Male		
Female	3.02	1.66–5.46
Aboriginal ethnicity		
No		
Yes	2.35	1.28–4.29
Non-injection crack use		
No		
Yes	3.45	1.75–6.78
Crystal methamphetamine use		
No		
Yes	2.02	1.13–3.62
Hepatitis C serostatus		
No		
Yes	1.61	0.78–3.33

Model was adjusted for age.

Table 3 Logistic regression analysis of interactive effect between crystal methamphetamine use and non-injection crack use and association with survival sex work involvement, adjusted for age, gender, Aboriginal ethnicity and HCV status

Non-injection crack use	*Crystal meth. use*	*Adjusted odds ratio*	*95% confidence interval*	*P-value*
No	No	1.00	Ref.	Ref.
No	Yes	13.14	1.64–104.95	0.015
Yes	No	18.49	2.42–141.16	0.005
Yes	Yes	26.30	3.48–198.85	0.002

interaction between crystal methamphetamine use and non-injection crack use that elevated the odds of survival sex work involvement (Table 3). A further test of interactions effects found a significant effect for non-injection crack use without crystal methamphetamine use ($P < 0.01$), but only a marginal effect for crystal methamphetamine use without non-injection crack use ($P = 0.08$).

Discussion

Main findings of this study

In the present study, we found that 11% of street-involved youth in Vancouver had engaged in survival sex work in the previous 6 months. Factors found to be independently and positively associated with survival sex work in this sample included female sex, Aboriginal ethnicity, non-injection crack use and crystal methamphetamine use. Interestingly, there appeared a relationship between stimulant co-administration (crack and methamphetamine) that increased the likelihood of survival sex work involvement.

What is already known on this topic

The elevated odds of female youth engaged in survival sex work is consistent with previous research demonstrating enhanced gender vulnerabilities to exchanging sex for money or drugs among women within the male-centered street milieu.[16,17] However, it is noteworthy that 8% of male youth in our study reported recent survival sex work involvement, highlighting the need for enhanced services for both male and female youth who exchange sex for survival. Although the proportion of male involvement in survival sex trade is lower than those in similar Canadian studies,[10] this may be due to underreporting of sex work involvement related to stigma.

Of particular concern, our findings contribute to a growing body of research documenting significant overrepresentation of indigenous people in survival sex work, with reports by Save the Children in 2000 suggesting that Aboriginal women account for up to 70% of visible street-based survival sex work in Canadian cities.[18–21] Previous research has demonstrated the adverse impacts of a legacy of colonization on health outcomes among Aboriginal communities, including substance abuse, trauma, devastating poverty and destruction of traditional social and familial support systems.[22,23] Research among Aboriginal youth in Vancouver has demonstrated high rates of sexual and drug vulnerability due to historical sexual trauma and multigenerational impacts of the residential school system.[23] Furthermore, recent mapping of access to services among female sex workers who use drugs in Vancouver suggests that as a result of violence and policing, youth and Aboriginal females are significantly more likely than their older and non-Aboriginal counterparts to be pushed to working in isolated areas away from health and support services.[24] Elevated sexual- and drug-related harms among Aboriginal youth, combined with systemic structural racism identified within law enforcement, government and service provision structures, have been found to decrease the likelihood of Aboriginal youth being able to access effective and non-judgmental health and social services.[23] Youth-centered and Aboriginal-specific intervention approaches that are sensitive to the racial, cultural, gendered realities facing street-involved youth are urgently needed. Given the highly

criminalized and stigmatized nature of sex work, particularly among vulnerable youth, strategies to engage this population in prevention and treatment services will need to integrate survival sex work programs within non-judgmental youth and Aboriginal service agencies.

What this study adds

Of particular importance, contrary to previous research suggesting that methamphetamine use is used as an alternative stimulant drug to crack cocaine,[25–27] our findings suggest that the use of methamphetamine and its association with survival sex is being amplified by the co-use of crack cocaine and crystal methamphetamine among street youth in this setting. Although the strong, synergistic relationship between crack use and survival sex has been well documented among female drug users and associated with elevated violence and exploitation, HIV and sexually transmitted infections,[2,11,27–29] there is a dearth of research on methamphetamine risks among youth involved in survival sex work. In light of ongoing concern of the explosive use of methamphetamine in many North American cities and associations with elevated sexual- and drug-related harms,[25] our results suggest the need for harm reduction efforts tailored to stimulant-using youth who exchange sex. Importantly, given that the use of methamphetamine has been shown to possibly facilitate the initiation of injecting drugs among youth in this setting,[4] our results suggest that prevention efforts targeting transition to injecting drugs need to address the dual use of crack cocaine and methamphetamine among vulnerable youth who exchange sex.

Limitations of this study

Our study has several limitations. First, although extensive outreach efforts were undertaken to derive a representative sample, like most other cohort studies involving high-risk youth, ARYS is not a random sample, and therefore, our findings may not generalize well to other street youth in Vancouver and elsewhere. For example, because our study focuses on drug-using street youth, we may have overestimated the prevalence of sex work involvement in the broader street youth population, and we were unable to compare the impact of drug use versus abstinence from drug use on engagement in sex work. Second, we relied on several measures of self-report, and therefore, some response biases may have affected our results. In particular, we may have underestimated some sensitive behaviors and experiences, including drug use and survival sex work involvement. Third, this study design is cross-sectional in nature, and therefore, causal relationships cannot be inferred.

In summary, we found a high rate of survival sex work involvement among street youth who use drugs in this Canadian setting. Survival sex work involvement was associated primarily with female gender, Aboriginal ancestry, crack cocaine and crystal methamphetamine use, especially when these drugs were used in combination. These findings highlight the need for novel approaches aimed at reducing the harms associated with survival sex work involvement among street youth, including polices and programs that address the unique needs of Aboriginal and female youth. Further, given the highly criminalized and stigmatized nature of sex work among youth, programs targeting youth involved in survival sex work need to be integrated with youth and Aboriginal-specific programs.

Authors' contributions

T.K., E.W., K.S., and J.C. designed the study. R.Z. and T.K. conducted the statistical analyses. J.C., K.S., E.W., and T.K. drafted the manuscript and incorporated all suggestions. All authors made significant contributions to the conception and design of the analyses, interpretation of the data, and drafting of the manuscript, and all authors approved the final manuscript.

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