Published in final edited form as:

AIDS Care. 2014 September ; 26(9): 1090–1094. doi:10.1080/09540121.2013.869542.

Youth, violence and non-injection drug use: Nexus of vulnerabilities among lesbian and bisexual sex workers

Tara Lyons^{1,2}, Thomas Kerr^{1,2}, Putu Duff^{1,3}, Cindy Feng^{1,a}, and Kate Shannon^{1,2,3}

¹British Columbia Centre for Excellence in HIV/AIDS, St. Paul's Hospital, Vancouver, BC, CANADA

²Department of Medicine, University of British Columbia, St. Paul's Hospital, Vancouver, BC, CANADA

³School of Population and Public Health, University of British Columbia, Vancouver, BC, CANADA

Abstract

Despite increasing evidence of enhanced HIV risk among sexual minority populations, and sex workers in particular, there remains a paucity of epidemiological data on the risk environments of sex workers who identify as lesbian or bisexual. Therefore, this short report describes a study that examined the individual, interpersonal and structural associations with lesbian or bisexual identity among sex workers in Vancouver, Canada. Analysis drew on data from an open prospective cohort of street and hidden off-street sex workers in Vancouver. Bivariate and multivariable logistic regression were used to examine the independent relationships between individual-, interpersonal, work environment- and structural-factors and lesbian or bisexual identity. Of the 510 individuals in our sample, 95 [18.6%] identified as lesbian or bisexual. In multivariable analysis, reporting non-injection drug use in the last 6 months (adjusted odds ratio [AOR]= 2.89; 95% confidence intervals [CI]= 1.42, 5.75), youth < 24 years of age (AOR= 2.43; 95% CI = 1.24, 4.73) and experiencing client-perpetrated verbal, physical and/or sexual violence in the last 6 months (AOR= 1.85; 95% CI= 1.15, 2.98) remained independently associated with lesbian/bisexual identity, after adjusting for potential confounders. The findings demonstrate an urgent need for evidence-based social and structural HIV prevention interventions. In particular, policies and programs tailored to lesbian and bisexual youth and women working in sex work, including those that prevent violence and address issues of non-injection stimulant use are required.

Keywords

lesbian; bisexual; sex work; violence; youth; substance use

Send correspondence to: Kate Shannon, PhD, MPH, Assistant Professor, Department of Medicine, University of British Columbia, Director, Gender and Sexual Health Initiative, B.C. Centre for Excellence in HIV/AIDS, St. Paul's Hospital, 608-1081 Burrard Street, Vancouver, B.C., V6Z 1Y6, Canada, Tel: (604) 804-9459, Fax: (604) 806-9044, gshi@cfenet.ubc.ca.

^aDr. Cindy Feng is now affiliated with the School of Public Health, University of Saskatchewan, Saskatoon, SK, CANADA.

Introduction

The literature on the health of sex workers (SWs) has been largely focused on female SWs, with little on the sexual and gender diversity of SWs, despite evidence that transgender and sexual minority populations experience enhanced social and health inequities, including homelessness (Corliss, Goodenow, Nichols, & Austin, 2011), violence (Herek, 2009; Saffin, 2011), stigma (Bockting, Miner, Swinburne Romine, Hamilton, & Coleman, 2013; Poon, Saewyc, & Chen, 2011), and targeted policing (Himmelstein & Bruckner, 2011). While research among heterosexual SWs has documented heightened levels of homelessness, substance use, violence, and barriers to health care services (Chakrapani, Newman, Shunmugam, Kurian, & Dubrow, 2009; Duff, Deering, Gibson, Tyndall, & Shannon, 2011; Patterson et al., 2006; Shannon et al., 2009), these experiences and risks among lesbian and bisexual SWs remain under-evaluated.

Lesbian and bisexual youth and adults have been found to experience higher rates of physical and sexual violence than heterosexual girls and women (Button, O'Connell, & Gealt, 2012; Coker, Austin, & Schuster, 2010; Saewyc et al., 2006). Further, certain lesbian and bisexual populations report higher rates of substance use (Frederick, Ross, Bruno, & Erickson, 2011; Herrick, Matthews, & Garofalo, 2010; Hughes, Szalacha, & McNair, 2010; Marshal et al., 2012). As such, it is hypothesized that lesbian/bisexual SWs may experience stigma associated with both sex work and lesbian and bisexual identity, exacerbating HIV risks. Therefore the objective of this study is to examine the factors associated with identifying as lesbian and bisexual among women who engage in street and hidden off-street sex work in Vancouver, Canada.

Methods

Data for this study was drawn from An Evaluation of Sex Workers Health Access (AESHA), an open prospective cohort that initiated recruitment in late January 2010 with the aim to document the individual, interpersonal, social, physical and structural environments shaping sexual health and HIV vulnerabilities and health care access and outcomes among sex workers (Shannon et al., 2007). Eligibility for the study includes having exchanged sex for money within the last 30 days and participants receive an honorarium of \$40 at each visit. Treatment is provided by our project nurse onsite for symptomatic STI infections, and free serology and Papanicolaou testing are available, regardless of enrolment in the study. The study receives annual ethical approval through the Providence Health Care/University of British Columbia Research Ethics Board.

Dependent variable

Our dependent variable was 'lesbian/bisexual identity' based on a yes response to a question about lesbian or bisexual identity in the baseline questionnaire.

Explanatory variables

Socio-demographic variables included youth (14 – 24 years of age), HIV, STI and HCV serology, Indigenous ancestry (First Nations, Inuit, Métis), ethnicity (Caucasian or visible minority (any visible minority including Indigenous ancestry), and education (high school or

higher vs. not completing high school). Drug use patterns variables included non-injection and injection drug use, and crack and crystal methamphetamine use intensity (daily, less than daily, none). Interpersonal HIV risks included inconsistent condom use for vaginal or anal sex with clients, client condom refusal and exchange of sex while high.

Sex work environment variables included both primary means of solicitation (street/public place, independent off-street, or indoor venue), primary place of servicing clients (street/public place, informal indoor venues, or formal sex work establishments); client violence (verbal, physical and/or sexual violence), violence from other SWs, recent incarceration (detention, prison or jail), homelessness, and police harassment without arrest (e.g., held against will).

Statistical analyses

We examined bivariate associations for all variables at baseline using Pearson's Chi-square test (Fischer's exact test used if cell sizes <5) and variables that were significant at $p < 0.05$ were considered for inclusion in the multivariable model. A non-injection drug use variable replaced crystal methamphetamine and crack cocaine variables in our multivariable model, due to collinearity between these two variables. Stepwise AIC selection was used to construct our final multivariable model. Adjusted odds ratios (AORs), 95% Confidence Intervals (95% CIs) and two-sided p -values were generated.

Results

As seen in Table 1, of the 510 SWs in our sample, 95 [18.6%] identified as lesbian ($n = 6$) or bisexual ($n = 89$). Nearly 18% (17.9%) of the sample were youth 24 years of age, with youth being at a 2.37 increased odds of identifying as lesbian or bisexual compared to their adult counterparts (95% CI: 1.26, 4.44) in unadjusted analyses. Over half of lesbian/bisexual SWs injected drugs (53.7%), with a crude odds ratio of 2.14 (95% CI= 1.36, 3.35). In terms of interpersonal HIV risks, lesbian/bisexual SWs were significantly more likely to report inconsistent condom use with regular clients (OR= 2.61; 95% CI= 1.47, 4.62) and client condom refusal (OR= 1.70; 95% CI= 1.01, 2.87). Lesbian/bisexual SWs were significantly more likely to solicit clients in street-based venues than formal sex work establishments (OR= 0.41; 95% CI= 0.22, 0.76), and were significantly more likely to report incarceration (OR= 2.49; 95% C = 1.45, 4.28) and homelessness (OR= 1.63, 95% CI= 1.03, 2.59). In multivariable analysis, non-injection drug use (AOR= 2.89; 95% CI= 1.42, 5.75), being a youth (AOR= 2.43; 95% CI= 1.24, 4.73), and verbal, physical and/or sexual violence perpetrated by clients (AOR= 1.85; 95% CI= 1.15, 2.98) remained independently associated with identifying as lesbian/bisexual, after adjusting for potential confounders.

Discussion

Compared to the general Canadian population, where lesbian and bisexual women account for less than 2% of the population (Tjepkema, 2008), our findings suggest that lesbian and bisexual women are highly overrepresented in the sex industry. Lesbian/bisexual street involved youth are vulnerable to sexual and physical violence (Gaetz, O'Grady, & Buccieri, 2010); however, violence was still associated with lesbian/bisexual identity after controlling

for youth. Due to the stigmas of sex work and identifying as a sexual minority, lesbian/bisexual SWs may be more vulnerable to victimisation by clients. Given violence is established as a primary risk factor for HIV infection among SWs, through both direct and indirect risk pathways (Decker et al., 2012; Shannon & Csete, 2010; Shannon & Montaner, 2012), these data suggest that lesbian and bisexual youth and women may be at reduced ability to negotiate client condom use.

Lesbian/bisexual SWs were more likely than their heterosexual counterparts to report non-injection stimulant use, which supports previous findings that lesbian and bisexual youth and women were more likely to report substance use compared to their heterosexual counterparts (Frederick, et al., 2011; Marshal, et al., 2012). The stigma faced by lesbian/bisexual SWs may result in internalized homophobia, which has been suggested as a possible explanation of increased rates of substance use among lesbian and bisexual women (Rosario, Schrimshaw, & Hunter, 2008; Young, Friedman, & Case, 2005). Finally, research suggests that social networks may play an important role in HIV risk pathways (Guarino, Moore, Marsch, & Florio, 2012; Rhodes, Singer, Bourgois, Friedman, & Strathdee, 2005), and it is possible that lesbian/bisexual SWs work in specific social networks where there is overlap between non-injection stimulant use and sex work.

These findings suggest lesbian/bisexual SWs may be at heightened risk for HIV due to elevated levels of non-injection stimulant use. Non-injection drug use has been associated with HIV risk vulnerabilities in the context of sex work among women (Edwards, Halpern, & Wechsberg, 2006) and outside of this context (DeBeck et al., 2009). In particular, non-injection drug use has been linked to sexual risk behaviour and these experiences are situated within gendered power relationships that exacerbate risk (Evans, Forsyth, & Gauthier, 2002; Zierler & Krieger, 1997). Therefore, these findings suggest the importance of examining non-injection stimulant use within lesbian and bisexual intimate relationships to better understand unique HIV vulnerabilities of this population. It is important to acknowledge the heterogeneity of lesbian and bisexual women and to note the study sample cannot be assumed to represent all lesbian/bisexual SWs. The sample is also not generalizable to heterosexual women or transgender SWs. Second, we are limited by the available categories for sexual identity. The category of lesbian, for example, may not accurately capture how some women identify. Furthermore asking about sexual identity at one time point does not capture the fluid character of sexual identity. Together, these limitations have the potential to misclassify and reduce our sample of lesbian and bisexual participants, likely biasing our associations towards the null. Third, the cross-sectional design precludes inferences about temporality, we cannot make claims about whether drug use preceded or followed lesbian or bisexual identity. Given this study is among the first to explore associations with lesbian/bisexual identity among street- and off-street sex workers, an exploratory approach to this study was adopted, where we modelled lesbian/bisexual identity as the outcome in an explanatory model. The research design serves as a first step towards understanding factors associated with lesbian/bisexual identity without making causal inferences.

This study highlights the importance of considering individual and sex work environment factors, particularly client-perpetrated violence, related to sexual identity among SWs in

future research. In particular, there is a gap in HIV prevention programs regarding the experiences of lesbian/bisexual SWs. The study results indicate an urgent need for HIV interventions and harm reduction programs tailored to lesbian/bisexual SWs to address client violence and stimulant use.

Acknowledgments

We thank all those who contributed their time and expertise to this project, including participants, partner agencies and the AESHA Community Advisory Board. We wish to acknowledge Peter Vann, Gina Willis, Annick Simo, Ofer Amram, Paul Nguyen, Jill Chettiar, Jennifer Morris, Alex Scot and Kathleen Deering for their research and administrative support. This research was supported by operating grants from the US National Institutes of Health (R01DA028648) and Canadian Institutes of Health Research (HHP-98835). TL is supported by the Canadian Institutes of Health Research. PD is supported by Population Health Interventions Network (Canadian Institutes of Health Research). KS is supported by US National Institutes of Health (R01DA028648), Canadian Institutes of Health Research and Michael Smith Foundation for Health Research.

References

- Bockting WO, Miner MH, Swinburne Romine RE, Hamilton A, Coleman E. Stigma, mental health, and resilience in an online sample of the US transgender population. *American Journal of Public Health*. 2013; (0):e1–e9.
- Button DM, O'Connell DJ, Gealt R. Sexual Minority Youth Victimization and Social Support: The Intersection of Sexuality, Gender, Race, and Victimization. *Journal of Homosexuality*. 2012; 59(1): 18–43. [PubMed: 22269046]
- Chakrapani V, Newman PA, Shunmugam M, Kurian AK, Dubrow R. Barriers to free antiretroviral treatment access for female sex workers in Chennai, India. *AIDS Patient Care and STDs*. 2009; 23(11):973–980. [PubMed: 19821725]
- Coker TR, Austin SB, Schuster MA. The Health and Health Care of Lesbian, Gay, Bisexual Adolescents. *Annual review of public health*. 2010; 31(1):457–477.
- Corliss HL, Goodenow CS, Nichols L, Austin SB. High Burden of Homelessness Among Sexual-Minority Adolescents: Findings From a Representative Massachusetts High School Sample. *American Journal of Public Health*. 2011; 101(9):1683–1689. [PubMed: 21778481]
- DeBeck K, Kerr T, Li K, Fischer B, Buxton J, Montaner J, Wood E. Smoking of crack cocaine as a risk factor for HIV infection among people who use injection drugs. *Canadian Medical Association Journal*. 2009; 181(9):585–589. [PubMed: 19841052]
- Decker MR, Wirtz AL, Baral SD, Peryshkina A, Mogilnyi V, Weber RA, Beyrer C. Injection drug use, sexual risk, violence and STI/HIV among Moscow female sex workers. *Sexually transmitted infections*. 2012; 88(4):278–283. [PubMed: 22287530]
- Duff P, Deering K, Gibson K, Tyndall M, Shannon K. Homelessness among a cohort of women in street-based sex work: the need for safer environment interventions. *BMC Public Health*. 2011; 11(1):643. [PubMed: 21838894]
- Edwards JM, Halpern CT, Wechsberg WM. Correlates of Exchanging Sex for Drugs Or Money Among Women Who Use Crack Cocaine. *AIDS Education and Prevention*. 2006; 18(5):420–429. [PubMed: 17067253]
- Evans RD, Forsyth CJ, Gauthier DK. Gendered pathways into and experiences within crack cultures outside of the inner city. *Deviant Behavior*. 2002; 23(6):483–510.
- Frederick TJ, Ross LE, Bruno TL, Erickson PG. Exploring gender and sexual minority status among street-involved youth. *Vulnerable Children and Youth Studies*. 2011; 6(2):166–183.
- Gaetz, S.; O'Grady, B.; Buccieri, K. *Surviving crime and violence: Street youth and victimization in Toronto*. Toronto, ON: Justice for Children and Youth; 2010. p. 90
- Guarino H, Moore SK, Marsch LA, Florio S. The social production of substance abuse and HIV/HCV risk: an exploratory study of opioid-using immigrants from the former Soviet Union living in New York City. *Substance Abuse Treatment, Prevention, and Policy*. 2012; 7(2)

- Herek GM. Hate Crimes and Stigma-Related Experiences Among Sexual Minority Adults in the United States Prevalence Estimates From a National Probability Sample. *Journal of Interpersonal Violence*. 2009; 24(1):54–74. [PubMed: 18391058]
- Herrick AL, Matthews AK, Garofalo R. Health risk behaviors in an urban sample of young women who have sex with women. *Journal of Lesbian Studies*. 2010; 14(1):80–92. [PubMed: 20077268]
- Himmelstein KEW, Bruckner H. Criminal-Justice and School Sanctions Against Nonheterosexual Youth: A National Longitudinal Study. *Pediatrics*. 2011; 127(1):49–57. [PubMed: 21135011]
- Hughes T, Szalacha LA, McNair R. Substance abuse and mental health disparities: Comparisons across sexual identity groups in a national sample of young Australian women. *Social Science & Medicine*. 2010; 71(4):824–831. [PubMed: 20579794]
- Marshal MP, Sucato G, Stepp SD, Hipwell A, Smith HA, Friedman MS, Markovic N. Substance Use and Mental Health Disparities among Sexual Minority Girls: Results from the Pittsburgh Girls Study. *Journal of Pediatric and Adolescent Gynecology*. 2012; 25(1):15–18. [PubMed: 22051788]
- Patterson TL, Semple SJ, Fraga M, Bucardo J, Torre ADL, Salazar J, Magis-Rodriguez C. Comparison of sexual and drug use behaviors between female sex workers in Tijuana and Ciudad Juarez, Mexico. *Substance Use & Misuse*. 2006; 41(10–12):1535–1549. [PubMed: 17002992]
- Poon C, Saewyc E, Chen W. Enacted Stigma, Problem Substance Use, and Protective Factors among Asian Sexual Minority Youth in British Columbia. *Canadian Journal of Community Mental Health*. 2011; 30(2):47–64.
- Rhodes T, Singer M, Bourgois P, Friedman SR, Strathdee SA. The social structural production of HIV risk among injecting drug users. *Social Science & Medicine*. 2005; 61(5):1026–1044. [PubMed: 15955404]
- Rosario M, Schrimshaw EW, Hunter J. Butch/femme differences in substance use and abuse among young lesbian and bisexual women: Examination and potential explanations. *Substance Use & Misuse*. 2008; 43(8–9):1002–1015. [PubMed: 18649226]
- Saewyc EM, Skay CL, Pettingell SL, Reis EA, Bearinger L, Resnick M, Combs L. Hazards of Stigma: The Sexual and Physical Abuse of Gay, Lesbian, and Bisexual Adolescents in the United States and Canada. *Child Welfare: Journal of Policy, Practice, and Program*. 2006; 85(2):195–214.
- Saffin, LA. Identities under seige: Violence against transpersons of color. In: Stanely, EA.; Smith, N., editors. *Captive genders: Trans embodiment and the prison industrial complex*. Oakland, CA: AK Press; 2011. p. 141-162.
- Shannon K, Bright V, Allinott S, Alexson D, Gibson K, Tyndall MW. Community-based HIV prevention among substance-using women in survival sex work: the Maka Project Partnership. *Harm Reduction Journal*. 2007; 4(20) Retrieved from <http://harmreductionjournal.com/content/4/1/20>.
- Shannon K, Csete J. Violence, condom negotiation, and HIV/STI risk among sex workers. *JAMA*. 2010; 304(5):573–574. [PubMed: 20682941]
- Shannon K, Kerr T, Strathdee SA, Shoveller J, Montaner JS, Tyndall MW. Prevalence and structural correlates of gender based violence among a prospective cohort of female sex workers. *BMJ: British Medical Journal*. 2009; 339
- Shannon K, Montaner JSG. The politics and policies of HIV prevention in sex work. *The Lancet Infectious Diseases*. 2012; 12(7):500–502. [PubMed: 22424776]
- Tjepkema M. Health care use among gay, lesbian and bisexual Canadians. *Health Reports*. 2008; 19(1):53–64. [PubMed: 18457211]
- Young RM, Friedman SR, Case P. Exploring an HIV paradox: an ethnography of sexual minority women injectors. *Journal of Lesbian Studies*. 2005; 9(3):103. [PubMed: 17548289]
- Zierler S, Krieger N. Reframing women's risk: social inequalities and HIV infection. *Annual review of public health*. 1997; 18(1):401–436.

Table 1

Individual, interpersonal, structural and sex work environment characteristics of lesbian and bisexual women in street and off-street sex work (n= 510)

Characteristic	Lesbian or Bisexual		p - value
	Yes (%) (n= 95)	No (%) (n= 415)	
Socio-demographic Factors			
Youth 24 years of age	17 (17.9%)	38 (8.4%)	0.006
Indigenous Ancestry	41 (43.2%)	161 (38.8%)	0.433
Caucasian	43 (45.3%)	120 (28.9%)	0.002
High School Education	43 (45.3%)	211 (50.8%)	0.326
Drug Use Patterns			
Injection drug use [‡]	51 (53.7%)	146 (35.2%)	0.001
Crack use intensity [‡]			
Daily	46 (48.4%)	128 (30.8%)	0.000
Less than daily	30 (31.6%)	118 (28.4%)	0.010
None	19 (20.0%)	169 (40.7%)	
Crystal methamphetamine intensity [‡]			
Daily	3 (3.2%)	8 (1.9%)	0.349
Less than daily	20 (21.1%)	41 (9.9%)	0.003
None	72 (75.8%)	366 (88.2%)	
Interpersonal HIV risks			
Client condom refusal	25 (26.3%)	72 (17.3%)	0.045
Inconsistent condom use with clients [‡]	25 (26.3%)	58 (14.0%)	0.003
Inconsistent condom use by regular client [‡]	22 (23.2%)	43 (10.4%)	0.001
Exchanged sex while high [‡]	74 (77.9%)	230 (55.4%)	0.000
Sex Work Environment Factors			
Primary means of solicitation [‡]			
Independent/ off-street (e.g. online, newspapers)	19 (20.0%)	56 (13.5%)	0.437
Indoor venue-based	14 (14.7%)	128 (30.8%)	0.005
Street/ public place-based	62 (65.3%)	231 (55.7%)	reference
Primary place of servicing clients [‡]			
Sex work establishment (e.g. brothels, massage parlours)	14 (14.7%)	139 (33.5%)	0.001
Informal indoor venues (e.g. bars, saunas, hotels)	30 (31.6%)	94 (22.7%)	0.621
Street/public place (e.g. alleys, street, parks, parkades)	51 (53.7%)	182 (43.9%)	
Client violence	53 (55.8%)	143 (34.2%)	0.000
Violence by other SWs [‡]	30 (31.6%)	61 (14.7%)	0.000
Homeless [‡]	39 (41.1%)	124 (29.9%)	0.035
Police harassment without arrest [‡]	44 (46.3%)	162 (39.0%)	0.192
Incarceration [‡]	25 (26.3%)	52 (12.5%)	0.001

[†] Indigenous ancestry is an umbrella term for First Nations, Inuit, Métis peoples in Canada.

[‡] In the last 6 months

Table 2

Unadjusted and adjusted odds ratios between individual, interpersonal and structural factors and lesbian or bisexual identity (n= 510)

Variable	Unadjusted Odds Ratio (OR)	95% Confidence Interval (CI)	Adjusted Odds Ratio (AOR)	95% Confidence Interval (CI)
Youth 24 years of age* (yes vs. no)	2.37	(1.26 – 4.44)	2.43*	(1.24 – 4.73)
Client violence [†] (yes vs. no)	2.43	(1.54 – 3.82)	1.85*	(1.15 – 2.98)
Incarceration [†] (yes vs. no)	2.49	(1.45 – 4.28)	1.71**	(0.97 – 3.03)
Non-injection drug use [†] (yes vs. no)	4.01	(2.07 – 7.77)	2.89*	(1.42 – 5.75)
Caucasian (yes vs. no)	2.03	(1.29 – 3.21)	1.57**	(0.97 – 2.53)

[†] In the last 6 months

* <0.05,

** <0.10