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INDIVIDUAL AND STRUCTURAL VULNERABILITY AMONG FEMALE YOUTH WHO EXCHANGE SEX FOR SURVIVAL

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Abstract

Purpose—Because of growing concerns regarding the heightened vulnerabilities and risk of human immunodeficiency virus infection among youth who exchange sex for survival, we investigated individual risk patterns and structural barriers among young (≤24 years) female sex workers (FSWs) in Vancouver, Canada.

Methods—Between 2005 and 2008, a total of 255 street-based FSWs (≥14 years) were enrolled into a community-based prospective cohort, and were asked to participate in baseline and biannual questionnaires administered through interviews and human immunodeficiency virus screening. We used contingency table analysis to compare individual and structural barrier results obtained at baseline for younger (≤24 years) FSWs with those of the older (>25 years) FSWs. For longitudinal data, we used generalized estimating equations throughout the follow-up period to determine factors associated with being a young FSW in the past 6 months.

Results—In comparison with older FSWs (n = 199), youth (n = 56) were more likely to spend fewer years engaging in sex exchange (median: 6.4 [interquartile range: 4.6–9.1] vs. 19.9 [interquartile range: 10.0–26.8]; $p \leq .001$), belong to an aboriginal ancestry (59% vs. 44%; $p = .052$), and be homeless (68% vs. 36%; $p \leq .001$). In the multivariate generalized estimating equations analysis, youth reported a significantly elevated proportional odds of being homeless (odds ratio [OR]: 1.26 [confidence interval {CI}: 1.08–1.48]), servicing clients in public places (OR: 1.28 [CI: 1.04–1.57]), injecting heroin on a daily basis (OR: 1.35 [CI: 1.06–1.74]), and a significantly reduced odds of accessing methadone maintenance therapy (OR: .76 [CI: .62–.93]).

Conclusions—This study demonstrates significant displacement of youth who engage in sex exchange to marginalized working and living spaces. The findings of this study bring to attention the critical need for targeted structural interventions including access to youth and gender-specific social housing, safe working spaces, reduction in the amount of harm caused to them, and addiction treatment services for youth engaged in survival sex work.

Keywords

adolescent; drug treatment; drug users; homeless youth; methadone maintenance therapy; prostitution; substance-related disorders; survival sex work; young adult

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1. INTRODUCTION

Globally, adolescents and youth under the age of 25 years [1] are an important target population with respect to public health because of their rapid and multiple transitions into adulthood, during which sexual and drug vulnerabilities are initiated and health patterns are established [2]. Of particular concern is that the number of youth becoming "street entrenched," characterized by involvement in the street economy, is growing because of family fragmentation, which in turn is increasing as a result of conflict, disease, urbanization, and the effects of increasing gaps in income, employment, housing, and food security [3]. Street-entrenched youth are more likely to have experienced elevated rates of childhood neglect and/or abuse, separation from their original families (e.g., foster care), the multigenerational effects of colonization, lack of positive role modeling during early life, and social exclusion (e.g., racial and sexual minorities) [4] and [5]. They also face some of the worst health outcomes in society including elevated risk for substance abuse, human immunodeficiency virus (HIV), hepatitis C virus (HCV), sexually transmitted infections, and poor access to health services [6].

A lack of options for safety and survival often compel vulnerable youth to become involved in the street economy, often translating to street-level dealing for young men and survival sex work for young women [7]. Studies have demonstrated that between 14% and 46% of street-entrenched youth exchange sex for money, drugs, shelter, or other commodities as a means of survival [8]. In a recent cross-sectional study involving youth and adult female sex workers (FSWs) in two Mexican-U.S. border cities, it was shown that adult women who initiated sex work at an earlier age (<18 years) were more likely to use inhalants, use sex to pay for alcohol, and report a history of child abuse [9]. Collectively, these studies have provided insights into youth vulnerability to survival sex work and factors driving early initiation into it. However, there remains scant prospective evidence among young FSWs, and fewer studies that examine the individual, social, and structural factors that shape experiences of exchanging sex for survival among young women when compared with their adult counterparts. Qualitative and ethnographic studies have demonstrated the gendered dimensions of survival of young women in the street economy that shapes their agency and access to resources [10] and [11]. Among women who exchange sex on the street, youth are more likely to report relying on an older male partner for drugs, requiring assistance with injecting and being second on the needle, thus compounding their inability to safely negotiate sexual and drug risk reduction practices [12] and [13].

It has been estimated that the average age at which women first initiate survival sex work is between 15 and 16 years [14] and [15], and early initiation during adolescence is associated with a twofold increased odds of HIV infection in adulthood [16]. Although we cannot discount that trafficking of underage women may comprise a small proportion of youth involved in sex work in North America, research suggests that the majority of street-entrenched youth become involved in survival sex work for quick money when alternatives for income and employment security are unavailable [17]. The barriers to accessing social assistance during adolescence have been further postulated to lead to street-involved youth's engagement in survival sex work as a means of basic subsistent need [18]. To date, "protecting" youth engaged in survival sex work has been largely left to the criminal justice and social welfare systems, where youth are either locked up in youth detention centers or repatriated to families and/or foster homes, which they had left in the first place [18]. This approach has been shown to have the detrimental effect of isolating youth from health services [13] and [19]. Given the critical need for research to elucidate policy and service gaps that are youth-specific and tailored to meet the needs of street-entrenched youth who exchange sex for survival, we undertook this study to determine individual, social, and

structural risk factors associated with younger age (≤24 years) among a prospective cohort of street-based FSWs.

METHODS

The community-based HIV prevention research partnership has been described in detail elsewhere [16]. Briefly, a key component of the Maka project is capacity-building among women involved in survival sex work, which is supported by an open community advisory board. Between 2006 and 2008, street-based FSWs living in the lower mainland of Vancouver, British Columbia, Canada, were enrolled in an open, prospective cohort and were asked to participate in an interview-based questionnaire and voluntary HIV screening at baseline and also at follow-up visits carried out every 6 months. On the basis of previous research, which identified 100% substance use among street-based FSWs in Vancouver, eligibility criteria was defined as being female (≥14 years) who used illicit drugs (excluding marijuana) and exchanged sex for money, drugs, shelter, or other commodities on the street in the past month. Given the difficulties in accessing a representative sample of FSWs because of the unknown size and boundaries of this population, initial mapping of working areas with >60 FSWs helped identify sex work strolls, which were then used for targeted outreach and recruitment. Time–space sampling [20] was used to systematically sample all women (inclusive of transgender women) working at staggered times and locations along these strolls (response rate of 94%). Participants received compensation worth Can $25 at baseline and each follow-up visit. This study was approved by the University of British Columbia's and Providence Health's Research Ethics Boards.

Study instruments

At baseline and follow-up visits, a detailed semi-structured interview-based questionnaire administered by trained peer researchers (former and/or current FSWs) helped elicit responses related to sociodemographic factors, health service use, working conditions, violence, and sexual- and drug-related practices. Voluntary HIV screening using the new point-of-care rapid INSTI test (Biolytical, Canada, specificity 99.3%, sensitivity 99.6%) was performed by the project nurse, which was supported by pre- and post-test counseling. HIV-positive tests were confirmed by Western blot. The health and violence questions were asked by the registered nurse to facilitate referral to support services.

Statistical analyses

We used contingency table analysis to compare baseline sociodemographic and sexual- and drug-related variables results obtained for younger (≤24 years) FSWs with those of the older (>25 years) FSWs. Chi-square and Fischer's exact tests, where appropriate, were used to compare categorical variables between the two groups. Because longitudinal data were available with serial measures for each subject, we used generalized estimating equations (GEE for binary outcomes with logit link for the analysis of correlated data to determine throughout the 24-month follow-up period the factors that were associated with younger age (≤24 years) in the past 6 months. These methods gave rise to standard errors that were adjusted by multiple observations per person using an exchangeable correlation structure. In this case, participants aged >24 years during the study period then contributed to the older age category ensuring that any correlations, if found, were attributable to the younger age category. Therefore, data from every follow-up visit, among those aged 24 years or younger, were considered in these analyses. For instance, an individual may have reported experiencing homelessness during one follow-up period and not another and this analysis approach serves to examine, throughout the follow-up period, behaviors and characteristics that are correlated with younger age both within individuals and between individuals. Although it is unconventional to use age as a dependent variable, this method has been used

successfully in previous analyses examining factors associated with younger age in a prospective cohort of individuals who use injection drugs [21].

Independent variables

Specific structural factors collected at baseline and follow-up visits were considered on the basis of previously published data and a priori hypothesized relationships, including homelessness within the last 6 months, access to drug treatment including methadone maintenance therapy (MMT), place of servicing clients (car or outdoor public space compared with indoor settings [e.g., hourly room, sauna]), and street-policing strategies (defined as confiscation of drug use paraphernalia without arrest). Individual variables considered in the analysis included being of aboriginal ancestry (aboriginal vs. non-aboriginal) [32], age of the individual at the time of first exchange of sex for money and/or drugs, serologically confirmed HIV status at baseline, and consensual unprotected vaginal or anal sex with a primary sex partner or client. Drug use patterns measured included baseline reports of ever having used injection drugs, and similar to previous analyses, longitudinal measures for frequent (≥1 per day) use of injection cocaine, heroin, and crystal methamphetamine as well as frequent crack and noninjection crystal methamphetamine use.

Analyses were restricted to only those FSWs who completed a baseline and one follow-up visit. Variables potentially associated with younger age were examined in bivariate analyses. To adjust for potential confounding, we fit a multivariate logistic GEE model using an a priori defined model building protocol, which adjusted for all variables that were statistically significant at $p < .10$ in the bivariate analyses. All p values were two-sided and odds ratios (ORs) reported at 95% confidence intervals (CIs).

RESULTS

A total of 255 women completed a baseline survey (response rate of 94%) and one follow-up visit and were included in this analyses, with 601 observations available over four visits (median visits = 2, interquartile range [IQR]: 1–3). Approximately half (47%, n = 121) of the participants have aboriginal ancestry; First nations, Metis, Inuit or non-status First Nations. The median age at baseline was 36 years (IQR: 25–41) and the median age of sex work initiation was 15 years (IQR: 13–21). Overall, HIV prevalence at baseline was 23%. Consistent with the United Nations definition of youth (≤24 years), 22% (n = 56) of the population studied were youth (ages: 18–24 years) and 78% (n = 199) were aged ≥25 years.

In baseline analysis (Table 1), in comparison with older FSWs, youth engaged in sex exchange for a fewer number of years (median: 6.4 [IQR: 4.6–9.1] vs. 19.9 [IQR: 10.0–26.8]; $p \leq .001$) and were less likely to self-report being HCV-positive (43% vs. 70%; $p = .001$). Youth were more likely to be of aboriginal ancestry (59% vs. 44%; $p = .052$) and be homeless in the last 6 months (68% vs. 36%; $p \leq .001$). There were no statistical differences at baseline with respect to age at first sex exchange (16 [IQR: 14–19] vs. 17 [IQR: 14–26]), HIV seropositivity (18% vs. 24%; $p = .361$), and ever injecting drugs (70% vs. 80%; $p = .104$).

In unadjusted GEE analysis (Table 2), youth had a higher proportional odds of injecting heroin frequently (OR: 1.40 [CI: 1.09–1.79]) and using noninjection crystal methamphetamine frequently (OR: 1.47 [CI: .99–2.18]). They were also significantly more likely to experience structural barriers of homelessness (OR: 1.27 [CI: 1.08–1.49]), servicing clients in cars and public spaces (OR: 1.30 [CI: 1.05–1.60]), having police confiscate drug use paraphernalia without arrest (OR: 1.20 [CI: .99–1.45]), and were less likely to have access to MMT (OR: .72 [CI: .58–.89]). In our adjusted multivariable model, factors that remained associated with younger age in longitudinal analysis were homelessness (OR: 1.26

[CI: 1.08–1.48]), servicing clients in a public place (OR: 1.28 [CI 1.04–1.57]), injecting heroin frequently (OR: 1.35 [CI: 1.06–1.74]), whereas access to MMT was inversely associated with younger age (OR: .76 [CI: .62–.93]).

DISCUSSION

In this study, we have found evidence of the increased dislocation of young street-based FSWs to isolated and outdoor housing and work environments. Furthermore, youth were more likely to be dependent on heroin, but significantly less likely to access addiction treatment for opiates as compared with their older counterparts. In combination, these findings tell the story of social and structural dislocation among some of the world's most vulnerable young women without access to treatment and social support services.

Of critical concern, over the 2-year follow-up period in our study, 69% of young FSWs reported "absolute homelessness," defined as sleeping on the street as compared with 36% of their adult counterparts. In adjusted analyses, after controlling for individual risk factors, youth remained independently more likely to be homeless as compared with adult FSWs. These results suggest that accessible and supportive social housing strategies for female youth are lacking. It has been estimated that between 4% and 7% of youth between the ages of 14 and 26 years are homeless or unstably housed [22]. Homeless youth have higher rates of infectious diseases, such as hepatitis B, HCV, and HIV, as well as increased risk for pregnancy and violence [5]. Further, as compared with youth who have stable housing, those who are homeless report higher rates of injection and noninjection drug use [23]. More recently, research has shown that homeless youth and those who are poorly housed (e.g., shelters, transition houses) are more likely to report inconsistent condom use and multiple sexual partners as compared with stably housed youth [24]. Evidence shows that poor environments, such as those created by inaccessibility of safe housing, increase multiple anonymous sexual encounters and reduce the capacity of youth to safely negotiate condom use [11] and [25]. As such, developing youth and gender-specific supportive housing models may be a critical structural intervention toward engaging young FSWs in social supports, treatment, and health care [11] and [25].

Moreover, in addition to living in marginalized public spaces, young FSWs were significantly more likely to service clients in public spaces, such as alleys, parkades, industrial settings, and cars, as compared with indoor settings (such as saunas, hourly hotels). This finding is of particular concern given that we have previously demonstrated threefold increased odds of coercive unprotected sex by clients and physical violence among women exchanging sex in public spaces and industrial settings [26] and [27]. The interrelationships between youth engaged in survival sex work and marginalized work in public spaces indicate the multilayered structural barriers for young FSWs. The continued legal barriers to client–sex worker date negotiation in public spaces and working in safer indoor spaces seem to have a disproportionately adverse effect on vulnerable youth, thus pushing them outside of the public health and social support umbrella [28]. Importantly, young people must be prioritized within the public health arena by developing supportive policing policies to prevent further compromise of young women's health by virtue of confiscation of drug use paraphernalia and increase in the risk for drug use harms through blood-borne disease transmission. Together these findings support the critical need for socio-legal policy reforms that remove criminal sanctions targeting sex workers and develop supportive housing and work spaces that facilitate female youth's control over sexual exchange and also help engage them in public health [8].

In addition, youth in this study population were significantly more likely to be dependent on injection heroin, but significantly less likely to access MMT. Although we have previously

shown elevated rates of heroin injection among youth who inject drugs, the finding of increased heroin injection among youth in this sample is of particular concern given that just over half of the entire FSW sample had ever injected drugs [29]. Subsequent research needs to consider how exposure to vulnerable work and living environments shape transitions from noninjection to injection drugs and influence access to health care services including treatment. It has been postulated that heroin may be a means of coping for young people facing concurrent past and present traumas [30]. Furthermore, the increased likelihood of frequent heroin injection among the youth in this study was most likely fueled by the more precarious state of the housing condition of young women and limited access to methadone [31]. In a previous analysis, an unsuccessful attempt to access addiction treatment was associated with a twofold increase in the odds of client-perpetrated violence [32]. The need for tailored and innovative interventions to support young women's safety, such as low-threshold housing, methadone, and 24-hour safe spaces, will help empower youth to break the trauma cycle and afford alternative opportunities to reduce reliance on risky drugs and sexual relationships for survival.

Among adults, MMT is a well established harm reduction intervention that assists in stabilization and recovery process for those struggling with opioid dependency [33]. However, the evidence of this treatment among youth is still ambiguous. A recent qualitative study of MMT use among youth indicated its value for treating opioid addiction and the youth expressed that MMT programs for this age group should be considered a temporary measure to assist in the recovery process of young people and be part of a larger more comprehensive, youth-centered, and holistic approach to addiction treatment [34]. Younger age most likely adds to complications in accessing MMT services because of provider concerns over methadone prescription to youth and the absence of specialized service providers for patients aged <19 years. Furthermore, studies on both MMT and social housing services for populations that use drugs have highlighted that more effective services are operated within a "low-threshold" paradigm and do not exclude clients coping with co-related polysubstance and mental health issues [35] and [36]. Because of the socially and politically contentious and difficult nature associated with use of illicit drugs, harm reduction services, and engagement in sexual work by youth, interventionists working with youth involved in survival sex work who use drugs face challenges in advocating for low-threshold housing, safe spaces, treatment and harm reduction services for this population [37]. However, for young people who find themselves living with addiction, engaged in sex work, and homeless, there is a striking paucity of resources that address their needs. Further evidence is required to elucidate effective and appropriate models of MMT, other drug treatment strategies, and low-threshold housing and safe spaces to support the health of young women who are socially marginalized.

Recognizing the serious vulnerability of young FSWs globally, the United Nations has called for an increase in youth-centered participatory interventions that address the causes of homelessness and the need for social protection [3]. In recent years, there has been increased advocacy for greater meaningful involvement of vulnerable young people to address and comply with recommendations for "youth-friendly services," which include components such as equitable and accessible points of delivery; private, non-stigmatizing, and safe environments; well-trained and nonjudgmental staff; and youth involvement in assessment and provision of services [38]. The need to hire and involve young FSWs to develop "rights-based" interventions to reduce the social and structural barriers that create, reinforce, and reproduce risk in this vulnerable population has been underscored [39]. Importantly, in this study, more than half of the young FSWs were of aboriginal ancestry. Therefore, resources must be directed toward aboriginal communities and health authorities should implement aboriginal-centered prevention, treatment, healing, and housing services in urban and rural

settings specifically designed with and for young aboriginal women involved in street-based survival sex work [40].

Several limitations to this study must be noted. The observational nature of this research and the use of self-reported data should be interpreted with caution. However, our use of GEE accounting for repeated responses by the same person may help to reduce temporality. Importantly, our sample did not comprise young people aged ≤17 years; therefore, the data reflected here may not represent very young populations of women involved in survival sex work. In addition, our use of age as the dependent variable, although nontraditional, strengthens the associations found with younger age because once the individual aged past 24 years, their data contributed to the older age category. The use of self-reported measures, such as violence, rape, childhood sexual and physical abuse, could subject the data to response bias. We have tried to minimize this likelihood by using peer trained interviewers and this type of response bias would only serve to underestimate the associations that were found with these variables. This research provides evidence of the multiple structural barriers facing female youth who engage in survival sex work on the streets of cities in Canada. The findings support growing evidence of the critical need to remove legal barriers and to meaningfully engage young FSWs in health and support services. Furthermore, structural interventions need to be tailored to serve the ones who are most vulnerable, and should include supportive housing models and safer indoor work spaces that meet the requirements of the youth “where they are at” and provide a continuum of holistic and culturally competent services from harm reduction to drug treatment and health care services.

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Table 1

Baseline characteristics of women in survival sex work stratified by age ≤24 years and ≥25 years

Characteristic	≤24 years n = 56 (22%)	≥25 years n = 199 (78%)	*p* value
Years exchanging sex	6.4 (4.6–9.1)[a]	19.9 (10.0–26.8)[a]	<.001
Median age at which one first exchanged sex for money or drugs	16 (14–19)[a]	17 (14–26)[a]	.065
Self-identify as aboriginal	33 (59%)	88 (44%)	.052
Homeless (last 6 months)	38 (68%)	72 (36%)	<.001
HIV positive (HIV screening)	10 (18%)	47 (24%)	.361
HCV positive (self-reported status)	19 (43%)	124 (70%)	.001
Ever injected drugs	39 (70%)	159 (80%)	.104

[a]Medians (interquartile range) are shown in first two rows, whereas number of participants (percentage positive responses within each category) are shown in remaining rows.

Table 2

Unadjusted and adjusted GEE analyses of factors associated with being a young woman (≤24 years) engaged in survival sex

Characteristic	Unadjusted OR (95% CI)	Adjusted OR[a] (95% CI)
Individual factors		
Aboriginal ethnicity	1.70 (.94–3.10)	–
Inject cocaine frequently	.92 (.74–1.14)	–
Inject heroin frequently	1.40 (1.09–1.79)	1.35 (1.06–1.74)
Inject crystal methamphetamine frequently	1.43 (.87–2.35)	–
Crack cocaine smoking frequently	.81 (.65–1.00)	–
Crystal methamphetamine use frequently	1.47 (.99–2.18)	–
Unprotected sex with primary partner	1.00 (.86–1.17)	–
Structural factors		
Homelessness	1.27 (1.08–1.49)	1.26 (1.07–1.48)
Police confiscated drug use paraphernalia (without arrest)	1.20 (.99–1.45)	1.14 (.96–1.36)
Service clients in cars and public spaces (alleys, parks)	1.30 (1.05–1.60)	1.28 (1.04–1.57)
Inpatient drug treatment	1.09 (.89–1.33)	–
Methadone treatment	.72 (.58–.89)	.76 (.62–.93)

GEE = generalized estimating equations.

[a]Variables significant at $p < .01$ entered into multivariate model; adjusted ORs refer to variables significant at $p < .05$.