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HIV Risk Behaviour and Predictors of Initiation into Prostitution among Female Street Youth in Montreal, Canada

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A thesis submitted to the Faculty of Graduate Studies and Research
in partial fulfilment of the requirements of the degree of Master's of
Science

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PREFACE

The thesis that follows has been formatted as a collection of manuscripts as allowed by the Faculty of Graduate Studies. The manuscript entitled “HIV risk profile and prostitution among female street youth” has been submitted to the *Journal of Adolescent Health* and is currently under review. The second manuscript entitled “Predictors of initiation into prostitution among female street youth” is currently under review in the *New England Journal of Medicine*. For manuscripts co-authored by the candidate and others, the candidate must make an explicit statement as to the contribution of each co-author.

Contributions of Authors:

The candidate was responsible for conceptualising and designing the two studies that are included in this thesis, for the analysis of all data, and for the authorship of the entire document. The data for the two analyses were made available through the Montreal Street Youth Cohort database by Dr. Élise Roy. Drs Roy and Boivin provided clinical and methodological expertise and guidance, Dr. Haley provided clinical expertise and Dr. Blais provided statistical and methodological expertise.

ABSTRACT

Objectives: To compare HIV risk behaviours of female street youth involved and not involved in prostitution and to identify predictors of initiation into prostitution.

Methods: Female street youth aged 14-25 years were recruited into a prospective cohort study between January 1995 and March 2000. Parametric and non-parametric methods were used to compare risk factors for HIV infection. Girls with no history of prostitution at baseline were followed prospectively to estimate the incidence of prostitution. Cox regression analysis was used to determine predictors of prostitution.

Results: Significantly higher proportions of girls with a history of prostitution reported engaging in behaviours that put them at risk of HIV infection. Such behaviours included non-injection and injection drug use, unprotected sex and risky sexual partnerships. The incidence rate of prostitution among girls not engaged in prostitution at baseline was 11.5/100 person-years. Independent predictors of initiation into prostitution were being 18 years or younger (Hazard Ratio (HR): 2.2; 95% Confidence Interval (CI): 1.0-4.8), using alcohol everyday (HR: 1.3; 95%CI: 1.1-1.5) and using at least three types of drugs (HR: 5.4; 95%CI: 1.6-18.4).

Conclusions: Girls involved in prostitution exhibited more behaviours that may place them at increased risk of HIV infection compared with female street youth. Young age and substance use characterised by the overuse of alcohol and multi-drug use were found to be independent predictors of initiation into prostitution for female street youth.

RÉSUMÉ

Objectifs : Comparer les comportements à risque d'infection au VIH chez les jeunes filles de la rue ayant fait de la prostitution à ceux des jeunes filles de la rue n'en ayant jamais fait; identifier les facteurs qui prédisent l'initiation à la prostitution.

Méthode : Entre les mois de janvier 1995 et mars 2000, des jeunes filles de la rue âgées de 14 à 25 ans ont été recrutées dans une étude de cohorte prospective. Les analyses comparatives ont été réalisées grâce aux méthodes paramétriques et non paramétriques. Le taux d'incidence de la prostitution a été estimé parmi les participantes qui, à l'entrée dans l'étude, n'avaient jamais fait de prostitution. Les facteurs qui prédisent l'initiation à la prostitution ont été identifiés grâce à l'analyse de régression de Cox.

Résultats : Des proportions significativement plus élevées de jeunes filles avec une histoire de prostitution ont rapporté avoir eu des comportements à risque d'infection au VIH. Ces comportements incluent la consommation de drogues avec et sans injection, les activités sexuelles non protégées et les activités sexuelles avec des partenaires à haut risque. Le taux d'incidence de la prostitution était de 11,5 par 100 personnes-années. Les facteurs prédisant de façon indépendante l'initiation à la prostitution étaient : être âgé de 18 ans ou moins (rapport de risque (RR) : 2,2; intervalle de confiance (IC) 95% : 1,0-4,8), la consommation quotidienne d'alcool (RR : 1,3; IC 95% 1,1-1,5) et la consommation d'au moins trois types de drogues (RR : 5,4; IC 95% 1,6-18,4).

Conclusions : Les jeunes filles de la rue qui ont une histoire de prostitution présentent un risque plus élevé d'infection au VIH que les autres jeunes filles de la rue. Le jeune âge et la consommation de substance, caractérisée par la consommation excessive d'alcool et la consommation de plusieurs types de drogue, prédisent de façon indépendante l'initiation à la prostitution chez les jeunes filles de la rue.

INTRODUCTION

Since the beginning of the human immunodeficiency virus (HIV) epidemic attempts have been made to identify populations at highest risk of infection. It was only within the last ten years that street youth have been considered to be at risk of becoming infected with HIV. This heightened vulnerability to infection is largely due to their limited social and economical resources that may force them to resort to entering sexual or drug related economies to meet daily survival needs [1, 2]. Unprotected sex and intravenous drug use are the primary means of HIV transmission. These activities are common among street youth, often emerging from a need for economic survival, in which these youth are frequently forced to barter sex for money, drugs or food [1].

Prostitution among street youth is a common occurrence. Both boys and girls are reported to be involved in youth prostitution; however the majority of this population is comprised of 14 to 17 year old girls [3]. Prostitution among adolescent females is a growing phenomenon in every major city on every continent [4]. Investigators from a diverse range of disciplines have explored antecedents to prostitution among adult and adolescent women. However, many of these studies have methodological limitations and there is little consensus as to the life events that predict entry into prostitution.

The evidence to date suggests that female street youth are vulnerable to HIV infection. However, research into the risks of HIV infection associated

with involvement in prostitution is lacking. The objective of the first study was to describe and compare characteristics and behaviours that may increase the risk of infection with HIV for girls involved and not involved in prostitution. The second study was designed to prospectively determine life events that predict initiation into prostitution for female street youth.

LITERATURE REVIEW

Homelessness

Worldwide, homelessness has been recognised as an important public health concern. Homeless people are at risk for serious physical and mental health problems and the repercussions of infectious diseases such as tuberculosis and acquired immunodeficiency syndrome (AIDS) [5-7]. Research into the impact of homelessness on children has shown that similar to their adult counterparts these individuals confront important threats to their health [8, 9]. Moreover, their ability to succeed and their future well being are seriously compromised by the life conditions of the street. In particular, homeless children are faced with health problems, hunger, poor nutrition, developmental delays, psychological problems and educational underachievement [8].

Estimates of the numbers of homeless youth vary depending on the sampling strategy and the definition of street youth employed. In the United States it is estimated that as many as 2 million youth run away from home each year [10]. Ringwalt et al. [11] found that 7.6% of a nationally representative sample of youth in the United States had reported that they had experienced at least one night of homelessness in a 12-month period. Canadian estimates of the number of homeless youth range from 45,000 to 150,000, most of whom live in the major cities [12]. The definition of street youth varies and often reflects country specific social constructs. However, one consistent factor among all street youth is their precarious living

conditions characterised by poverty, residential instability, and emotional and psychological vulnerability [13].

Street youth populations are largely comprised of out of school and unemployed youth, many of whom are involved with illegal activities including drug dealing and street prostitution [14]. Economic options to meet daily survival needs are lacking, placing street youth at risk of sexual exploitation and various types of crime [15]. Unfortunately there are few legitimate means of survival for these youth. This lack of options leads to an increased risk for both HIV and sexually transmitted diseases (STD) due in part to high risk sexual and drug using behaviours [1, 16].

Homeless youth are very often exposed to a variety of forms of violence, both as spectators and as victims. Physical abuse is commonly experienced by homeless youth and they are at continued risk of both murder and suicide [17]. Due to limited coping mechanisms for exposure to such violence, these youth are at increased risk for psychological consequences including post-traumatic stress disorder and depression [18]. Suicidal ideation and depression are more prevalent among homeless youth than among their non-homeless counterparts [19]. A study conducted among Toronto street youth found 42% reported that they had attempted suicide [20]. These estimates are consistent with many studies conducted among homeless youth in the United States [21-23].

HIV Risk among Female Street Youth

Since the beginning of the HIV/AIDS epidemic research groups have attempted to identify populations vulnerable to HIV infection. In recent years street youth have been identified as a group at high risk of becoming infected with HIV. In the United States, approximately 4% of homeless youth are HIV-positive [24]. This is in contrast to other samples of adolescents in the United States for whom the prevalence of HIV is two to 10 fold lower [25].

Several studies have explored characteristics and behaviours of street involved youth that may increase their risk of becoming infected with HIV [1, 2, 14-16, 24, 26-37]. Many of these studies have taken street youth as a uniform group and have not investigated male and female youth independently. There are important behavioural differences, particularly with respect to sexual behaviours between male and female youth, that may have an effect on the likelihood of HIV infection. Therefore, this review will focus on literature pertaining to HIV risk among female street youth.

Stricof et al. [24] examined HIV prevalence among homeless youth attending a shelter in New York City. The overall prevalence of HIV for male and female homeless youth in New York was 5.3% with a prevalence of 4.2% among girls. For girls, prostitution (Odds Ratio (OR): 4.0; 95% Confidence Interval (CI): 0.9-18.3) and having another sexually transmitted disease (OR: 2.3; 95% CI: 0.9-6.2) were found be associated with HIV although these associations were not statistically significant.

Rosenthal et al. [27] explored HIV/AIDS risk among homeless youths aged 15 to 18 years in Australia. In this study homeless girls were found to exhibit riskier sexual behaviour with both casual and regular partners compared with female youths who were not homeless ($p<0.05$). Further, risk associated with substance use including injection drug use and the sharing of needles was significantly higher for homeless girls ($p<0.001$).

A study conducted among homeless youth aged 12 to 23 years in Hollywood, California indicated that female street youth were engaging in behaviours that place them at increased risk of HIV infection [29]. Fifty-six percent of females had engaged in sex prior to the age of 15 years, 33% had engaged in some type of prostitution activity and only 30% reported condom use the last time they had sex. Reported drug use behaviours were also high for female street youth: 42%, 35% and 15% of girls had ever used cocaine, crack and injection drugs, respectively. The risks associated with these behaviours may be compounded by the fact that 38% of the girls reported having had sex as part of the purchase of drugs.

A Canadian study of HIV risk behaviour among female street youth aged 15 to 20 years reported high proportions of youth engaging in HIV risk behaviours [30]. Ninety-three percent of female street youth reported being sexually active. Most of these youths reported multiple sexual partners: 41% and 18% of female street youth reported having had at least 10 and at least 50 different sexual partners, respectively. Further evidence of sexual risk of HIV infection included the young age at first coitus (mean 13.2 years) and the

relatively high proportion (24%) of girls reporting engaging in anal sex. Drug use behaviours were not included in this analysis.

Johnson et al. [2] investigated HIV risk behaviours among street youth in Chicago, USA. Five percent of female street youth reported having engaged in injection drug use, 70% reported having had multiple sexual partners and 10% had had a high-risk partner defined as an injection drug user, HIV-positive individual or prostitute. Further HIV risk was evidenced by the 33% of girls who reported irregular condom use, 11% who had engaged in anal sex and 12% who had engaged in prostitution.

Research by Clements et al. [33] in Northern California explored gender-specific HIV risk among street youth aged 12 to 23 years. With respect to sexual behaviour, 10% of girls had ever engaged in prostitution, 28% had ever been diagnosed with a sexually transmitted disease and consistent condom use was low. Illegal drug use was over 30% for all drugs investigated, 33% of girls had ever used injection drugs and 43% had injected drugs in the month prior to the questionnaire.

In order to explore HIV risk behaviours among street youth in Montreal Canada, Roy et al. interviewed youth aged 13 to 25 years [37]. This study revealed that in the six months prior to the interview, 38% of girls reported having had two to five male partners and 19% of girls reported having had six to 20 male partners. A very high proportion of girls (98%) reported having ever engaged in vaginal intercourse; however only 15% of these girls reported always using condoms. Twenty-one percent of the girls had ever engaged in

prostitution and of these girls only 14% reported always using condoms during such exchanges. Over 40% of girls reported having a sexual partner who was an injection drug user. Drug use was high for all investigated substances and 39% of girls reported having ever injected drugs.

While HIV risk behaviours among female street youth have been well characterised across North America, HIV risk behaviours among particular subgroups of these youth such as females engaged in prostitution are not well understood. To date no study has specifically investigated HIV risk among female street youth engaged in prostitution. A study conducted by Yates et al. [38] compared health compromising behaviours for homeless youth involved and not involved in prostitution. Boys and girls aged 12 to 24 years were interviewed during examinations at a medical clinic in Los Angeles, California. In this study, 68% of homeless youths involved in prostitution were female. Through various behaviours, 100% of homeless youths involved in prostitution were at risk for HIV infection compared with 8% of homeless youths not involved in prostitution. For example, 22% of homeless youths involved in prostitution had used injection drugs in the six months prior to the questionnaire. This is in comparison to 4% of the homeless youth not involved in prostitution. Age at first coitus was significantly younger for homeless youths involved in prostitution compared with those not involved.

As evidenced by the few studies previously conducted among female street youth, these girls are at increased risk of infection with HIV. The investigation by Yates et al. [38] indicated that homeless youth involved in

prostitution may be at increased risk of HIV infection. To date no study has specifically examined HIV risk among female street youth involved in prostitution. Thus, the current analysis was undertaken in order to determine if female street youth involved in prostitution were engaging in behaviours that may place them at increased risk of HIV infection compared with other female street youth.

Prostitution

Prostitution is legally defined as the provision of sexual services or performances by one person for whom a second person provides money or other markers of economic value [39]. Sex trading or survival sex involves the exchange of sexual activity to meet subsistence needs such as the provision of money, drugs, a place to sleep, food or protection. It is important to appreciate the variation in the definition of prostitution used by research groups. The definition ranges from the very specific exchange of money for sex [40-43] to the inclusion of other goods including drugs, food or clothing [44, 45]. Greene et al. [46] used survival sex defined as the exchange of sex for money, food, drugs, money to buy drugs, a place to stay or something else as the outcome variable for their study. Others have not explicitly defined prostitution for the purposes of their respective analyses [47-52]. Despite the variation in terminology, the basic tenet of exchanging sexual activity for material or personal gain remains constant.

Prostitution among homeless youth is a common situation. Estimates from the United States of the proportion of runaway and homeless youth who

become involved in prostitution range from 10% to 50% [2, 14, 21, 29, 32, 33, 43, 53-56]. Canadian estimates of the prevalence of a history of prostitution among street youth ranges from 12 to 32% [37, 57]. A study conducted in Canada reported that 94% of street youth aged 15-20 years were sexually active and 14% had engaged in commercial sex work [58]. Further, 91% of a cohort of street youth aged 15-20 years surveyed in the United States were sexually active and 29% were involved in prostitution [24]. Another study conducted in the United States reported that 43% of street youth had engaged in prostitution [14]. Comparable prevalences have been also reported in Australia for youth aged 14-23 years [59]. The high proportion of street youth engaging in prostitution leads to concern about risks associated with selling sex.

The psychological and physical dangers inherent in prostitution make it among the most damaging repercussions of homelessness among youth [46]. The health consequences of prostitution are serious. The adolescent prostitute is more vulnerable to pressure and abuse and may be more easily enticed into dangerous sexual practices [60]. One important consequence of risky sexual behaviour is infection with sexually transmitted diseases and, especially, with the human immunodeficiency virus (HIV). A multi-city study conducted in Canada revealed that 68% of female street youth involved in prostitution had a reported history of a STD [30]. This rate is similar to those found by Cave et al. in Toronto who reported 50% of street youth sex industry

workers had a history of a STD and in Edmonton 83% of street youth sex workers had a history of a STD [61].

Heterosexual transmission of HIV has increased dramatically in recent years. The primary routes of heterosexual transmission in North America are through unprotected sex with an injection drug user (IDU) or other high-risk partners, particularly with multiple partners [62]. Young prostitutes are at an elevated risk of HIV infection due to the fact that unprotected sex is a valuable commodity in the sex trade and the highest profits are obtained from the prostitution of young girls who are willing to engage in unprotected sex [63].

Given the considerable health consequences of prostitution several investigators have explored the reasons young women become involved in prostitution. As yet, no study has specifically examined the predictors of initiation into prostitution among female street youth. However, several research groups have examined related issues and these publications will be further reviewed.

Risk Factors for Prostitution

Two routes of entry into prostitution have been put forth in the literature. The first proposes that entry into prostitution occurs as a consequence of passive neglect characterised by the absence of family support structures, educational deprivation and poverty. Through these situations women are voluntarily drawn into street life by the prospects of adventure and financial gain. A second proposed route suggests that home and family circumstances propel young women involuntarily into prostitution. Victims of

family violence, once alone on the streets turn to prostitution as a means of survival [64, 65].

Studies of Males and Females

A recent study conducted by Greene et al. [46] examined the prevalence and correlates of survival sex among runaway and homeless youth in the United States. This study included samples of youth recruited through shelters and on the street. Youth who reported ever engaging in survival sex were compared with those who had not engaged in survival sex with respect to background characteristics, indicators of victimisation, criminal behaviours, substance use, sexually transmitted disease and pregnancy, and suicide attempts. Logistic regression analyses indicated a number of risk factors associated with survival sex for both samples of youths. Of particular note, for those youth recruited from shelters, injection drug use was associated with greater than eight times the odds of having ever engaged in survival sex. Although this study recruited large numbers of participants in both the shelter and street samples, it is limited by the fact that it was cross-sectional in design; thus inferences about causal relationships between the risk factors and prostitution are difficult to establish. Further, male and female youth were analysed as one group thereby prohibiting any inference about female youth specifically. Other studies have indicated that there are differences between males and females with respect to antecedents to prostitution [49]; thus it may not be appropriate to combine the two groups. Finally, childhood sexual abuse

has been suggested as an important antecedent to prostitution [43, 51] but was not included in this analysis.

A study conducted by Schissel et al. [47] examined 52 youth involved in the sex trade and 349 youth with no history of involvement in sex work. All of the participants were recruited through the youth justice system. This study highlighted the link between physical and sexual abuse during childhood and increased levels of prostitution. However as with the study by Greene et al. [46], the participants included in this study were both male and female and the sexes were not analysed separately thereby prohibiting the evaluation of risk factors for prostitution among female youth specifically.

Studies of Females

A study of female adolescent prostitutes was conducted by Nadon et al. [44]. Young female prostitutes and non-prostitutes recruited from the same locations were compared. The study corroborated previous work indicating that adolescent prostitutes had experienced sexual and physical abuse as children. Eleven percent more prostitutes had experienced childhood sexual abuse compared with non-prostitutes; however this difference was not statistically significant. The non-prostitute group in this study reported significantly more physical abuse in childhood (71%) compared with the prostitute group (48%). Prostitutes were found to be more likely to be runaways (52% vs. 36%) and homeless (34% vs. 15%) compared with non-prostitute youth. With respect to substance use, non-prostitutes were more likely to report the use of marijuana; however prostitutes had significantly

higher use rates for many drugs including acid, cocaine and amphetamines ($p < 0.001$). This study is limited in part by its small sample size with only 45 prostitutes and 37 non-prostitutes. Further, a multivariate model was not used to evaluate the independent associations between the various risk factors and prostitution.

As part of a larger study exploring sexual assault of street prostitutes Silbert et al. [66] examined substance use, both prior to and following entrance into prostitution, among 200 juvenile and adult females in the San Francisco area in the United States. Substance use was found to be a common occurrence in the lives of these women. Forty percent reported drug abuse as a problem prior to their entry into prostitution. Further, 27% of the sample stated that they had started prostitution because of drug use. As highlighted by the authors of this study, the relationship between substance use and prostitution does not in itself imply causality. The authors did not attempt to assess this relationship through statistical modelling.

Earls and David [49] reported on the early childhood experiences of female prostitutes aged 17 to 38 years compared with non-prostitute females. Univariate analyses suggest that compared with non-prostitutes, female prostitutes were significantly more likely to have experienced physical abuse in the home (42% vs. 16%), to have had some form of sexual interaction with a family member (26% vs. 6%) and to have been placed in foster care (62% vs. 14%). The authors conclude that it is not necessarily a combination of family environment factors that contribute to entry into prostitution but that the

family environment may lead an individual into a situation, such as running away, that favours prostitution as an economic alternative. The limitations of this study include the lack of multivariate model with no attempt having been made to establish independent associations. Moreover, the authors do not describe the nature of their comparison group thus it is difficult to assess the appropriateness of the chosen group.

Several other studies have examined pathways to prostitution among adult women [40, 41, 45]. An early study comparing very small numbers of adult women who reported receiving money for sex and women attending an STD clinic found very few differences between the two groups with respect to demographic and behavioural characteristics [40]. This study was somewhat qualitative in design with women participating in unstructured interviews. The interpretation of the results of such a study is limited both by the lack of quantitative analyses, in particular the lack of a multivariate model, and the very small numbers of subjects in each group.

McClanahan et al. [41] explored three pathways into prostitution: childhood sexual victimisation, running away and drug use among female jail detainees. Multivariate analyses indicate that women who were sexually abused prior to the age of 15 (OR: 2.78 95%CI: 1.13-6.87) or during adolescence (OR: 2.13 95%CI: 1.23-3.67), had a history of running away from home between early adolescence and age 15 (OR: 43.28 95%CI: 5.76-325.48) or under the age of 18 (OR: 2.13 95%CI: 1.23-3.66) were significantly more likely to become prostitutes. An advantage of this study is that the multivariate

analysis used took time into consideration. Thus, the authors report that the odds of entering into prostitution were not equal over the life course of the women. Childhood sexual abuse was found to have a lifelong effect on entry into prostitution, whereas having run away from home affected entrance into prostitution in the early adolescent years. Drug use was not found to be predictive of initiation into prostitution. As the authors highlight, the results of this study must be considered carefully given that sampling from a jail population results in an unrepresentative sample as many women who engage in prostitution and are never jailed would not have been included in the sample.

Early childhood victimisation characterised by abuse and neglect has been identified as potentially important antecedents to prostitution [42, 49]. Spatz Widom et al. [42] followed a cohort of abused and neglected children and a comparison group matched on age, race, sex and social class into young adulthood. The results of this study indicated that childhood sexual abuse (OR: 2.54 95%CI: 1.02-6.32) and childhood neglect (OR: 2.58 95%CI: 1.20-5.55) were predictive of involvement in prostitution for female subjects. The authors postulate that neglected young children on the streets are at risk of being victimised or enticed into prostitution.

Sexual Abuse as a Precursor to Prostitution

The relationship between early sexual abuse and prostitution has been reported in a number of studies [41, 42, 44, 49, 67-69]. Two explanations for this relationship have been proposed. First, sexual abuse may increase the

probability that a woman will participate in deviant street culture and illegal activities thereby influencing the entry into prostitution indirectly. The second explanation suggests that experiences of sexual abuse lead to changes in self-concept and attitudes towards sexual behaviour thereby facilitating prostitution [43]. It is evident from the existing literature that there is no simple cause-effect relationship between sexual abuse and prostitution; however, several studies have attempted to elucidate this relationship [43, 50-52, 69, 70].

Silbert and Pine [69] conducted a cross-sectional study of childhood sexual abuse among 200 juvenile and adult, current and former, female prostitutes. Sixty percent of women interviewed reported having been sexually abused under the age of 16 years and 70% of these women reported that the experience of sexual exploitation had affected their eventual entrance into prostitution. Although this descriptive study is beneficial for the establishment of a relationship between sexual abuse in childhood and eventual prostitution, there are several limitations that should be considered. Firstly, this study consisted only of data obtained from interviews with female prostitutes, with no reference to a non-prostitute comparison group. Further, the investigators made no distinction between juvenile and adult prostitutes or former versus current prostitutes. It is possible that these groups of women may have had different life events prior to their initiation of prostitution. A further important limitation of this study is the lack of multivariate modelling

which would allow for evaluation of an independent relationship between sexual abuse and prostitution.

A Canadian Federal Committee on Sexual Offences Against Children and Youth [70] conducted a survey of male and female juvenile prostitutes in major cities across Canada. The report states that young prostitutes had not been victims of sexual offences more often than other Canadian children and youth. Further, the authors suggest that having been sexually abused in childhood was not by itself a significant factor for entry into prostitution. Criticism of this report has been put forth by Bagley and Young [52]. The primary criticism was the lack of comparability between the prostitutes and the national random sample of adults used for comparison. The juvenile prostitutes surveyed were on average 18 years at the time of the interview while the comparison group consisted of adults who were in their late thirties on average at the time of the survey. Further, the method of recruitment for the two samples was markedly different with prostitutes being recruited through a snowball sampling technique and the comparison group obtained through a national random sample. The lack of difference in the reported levels of childhood sexual abuse between the two groups may be attributed to the differential risk period for sexual abuse in the family. The average age of entry into prostitution was 16 years and by the age of 14, 76% of the youth had run away from home at least once and an estimated two-thirds had been in and out of their homes since the age of 12. Thus, the majority of the sexual abuse occurred prior to the age of 12. This is in contrast with the general

population where the majority of individuals experienced abuse after their twelfth birthday. Presumably, had the youth who later entered prostitution remained in their homes, the amount of abuse reported would have been considerably greater than that reported for the general population.

Seng [50] compared 70 sexually abused children with 35 non-sexually abused, prostitution involved children recruited from a shelter for abused and exploited children. The author hypothesised that if sexual abuse and prostitution were associated there would be few differences with respect to the socio-demographic and behavioural variables examined. Due to the cross-sectional design of this study a causal link between the two variables of interest was difficult to infer. The two groups differed significantly on nine (41%) of the 22 variables examined. The authors conclude that the link between sexual abuse and adolescent prostitution is not direct, but involves runaway behaviour as an intervening variable. As the authors highlight, this study is limited by its small sample size particularly for the sub-analysis of the runaway youth. Further, the statistical methods used did not include a multivariate model thus, the independent relationship between sexual abuse during childhood and subsequent prostitution could not be inferred.

In an attempt to evaluate the relationship between childhood sexual abuse and prostitution, Simons et al. [43] recruited 40 female runaway youths aged 14 to 18 years. Over 40% of the runaways in this sample reported being sexually abused by a parent or adult relative and 18% reported engaging in prostitution. A correlation of 0.33 was detected between prostitution and

sexual abuse and after controlling for physical abuse, criminal behaviour and substance abuse. Childhood sexual abuse was found to be independently associated with an odds ratio of involvement in prostitution of 1.23; however this relationship was not statistically significant ($p=0.06$).

A Canadian study conducted by Bagley and Young [52] recruited 45 women over the age of 18 years who had been prostitutes and were no longer involved in prostitution. A comparison group was drawn from a community mental health study of randomly selected adults who had never engaged in prostitution in the population. Nearly 75% of the former prostitutes reported a history of sexual abuse compared with 28% of the comparison group. Further, 40% of the former prostitutes reported that childhood sexual abuse was definitely a factor in their entry into prostitution. A second comparison group of women from the community mental health survey who reported sexual abuse in childhood was selected for the prostitutes who reported a history of childhood sexual abuse. This comparison suggests that former prostitutes were subjected to a greater range of sexual assaults and to more serious assaults in childhood compared with community controls who had experienced sexual abuse. Regression analysis of precursors of entry into prostitution resulted in separation from a biological parent before age 12 years as the most significant independent variable. However, sexual abuse and physical abuse in childhood were also found to be significant factors after controlling for the effects of parental separation.

Zierler et al. [51] studied adult survivors of childhood sexual abuse in the United Kingdom. Adult women with a history of childhood sexual abuse were 2.8 times more likely to report having worked as a prostitute. The definition of childhood sexual abuse in this study was very specific, including only rape or forced sex during childhood or adolescence. A further limitation of this analysis was the time gap between the occurrence of childhood sexual abuse and its reporting in adulthood. This delay in reporting may result in recall bias or the potential for other intervening factors to have influenced sexual behaviour.

The literature to date provides some evidence for a link between childhood sexual abuse and subsequent involvement in prostitution. However the lack of consensus among the studies suggests the need for further comprehensive investigation of the predictive nature of this relationship. Several other important associations have been reported in the literature. For girls, physical abuse, substance use and homelessness have been linked with entry into prostitution. The present study utilised data from a prospective cohort of female street youth with no history of prostitution. This study design allows for the determination of temporal relationships between independent precursors and prostitution.

STUDY OBJECTIVES

1. To compare HIV risk factors among female street youth involved in prostitution and those with no history of prostitution.
2. To determine the incidence and predictors of initiation into prostitution among female street youth.

Two manuscripts submitted for publication follow. The first manuscript addresses objective one and the second manuscript addresses the second objective.

HIV Risk Profile and Prostitution among Female Street Youth

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ABSTRACT

Objective: To compare HIV risk factors among female street youth involved in prostitution and those with no history of prostitution.

Methods: Youth aged 14 to 25 years were recruited into the Montreal Street Youth Cohort. Each youth completed a baseline interviewer-administered questionnaire. Statistical analyses were carried out using parametric and non-parametric methods.

Results: Eighty-seven (28%) girls reported involvement in prostitution and 165 girls reported no history of prostitution at the baseline interview. Eighteen percent and 27% more girls involved in prostitution reported bingeing on alcohol and on drugs, respectively. Thirty-three percent more girls involved in prostitution reported a history of injection drug use and 22% more reported having injected cocaine as their drug of choice. Girls involved in prostitution were younger the first time they had consensual sex. Fifteen percent more girls involved in prostitution reported anal sex and consistent condom use was low for all girls. The number of casual or regular male and female sexual partners was higher for girls involved in prostitution. Girls involved in prostitution reported more risky sexual partners.

Conclusion: Girls involved in prostitution may be at increased risk of HIV infection due to their injection drug use and risky sexual behaviours.

Key words: Street Youth - Women - HIV/AIDS – Prostitution - Canada

INTRODUCTION

Inner city street youth are increasingly being recognised as a population at risk for a wide range of physical and mental health problems [1, 2]. The number of street youth is not known and estimation is difficult due in part to variation in the definition of street involvement. In the United States, estimates from the early 1990's indicate that as many as 2 million youth run away from home each year and a large proportion of these youth become homeless [3]. Ringwalt et al. [4] found that 7.6% of a nationally representative sample of youth in the United States reported that they had experienced at least one night of homelessness over a 12-month period. The street youth population is largely comprised of out of school and unemployed individuals, many of whom are involved with illegal activities including drug dealing and street prostitution [5]. Economic options to meet daily survival needs are lacking, placing street youth at risk of sexual exploitation and various types of crime [6].

Prostitution among street youth is a common occurrence. In the United States, estimates of the proportion of runaway and homeless youth who have been involved in prostitution range from 10 to 50% [1, 5, 7-15]. In Canada these estimates range from 12 to 32% [16, 17]. Much of the variation in these numbers is due to the definition used for individual studies. For example some investigators use a narrow definition of prostitution that includes only the exchange of sexual activities for money, while others use a broader definition that encompasses the trading of sex to meet subsistence needs such as food, shelter and protection. Regardless of the definition used, however, the

proportion of street youth involved in such activities is high and although the definition may vary by author, the basic premise of using sexual activity as a service for material or personal exchange remains constant.

The health consequences of prostitution are of concern. One important health problem is infection with sexually transmitted diseases and, especially, infection with the human immunodeficiency virus (HIV). While HIV risk behaviours among female street youth have been well characterised across North America [1, 18], such behaviours among particular subgroups of these youth such as females involved in prostitution are not well understood. To date no studies have specifically investigated HIV risk among female street youth involved in prostitution.

A 1995 study examined the prevalence of HIV and risk behaviours among a sample of street youth in Montreal, Canada [17]. The current study builds on the findings of this study by focusing on female street youth. The purpose of this study was to compare HIV risk factors and correlates of these factors among female street youth involved in prostitution to those with no history of involvement in prostitution.

METHODS

Youth between the ages of 14 and 25 years have enrolled in the Montreal Street Youth Cohort at any time since its inception in January 1995. In order to be eligible for initial recruitment into the cohort the youth had to have either been without a place to sleep more than once in the previous year or have regularly used the services of one of the Montreal street youth agencies in the previous year. These criteria were used to capture a broad

spectrum of street youth, as it is known that youth have different experiences based in part on the degree of involvement in street life. Further eligibility criteria required that the youth speak either English or French and be intending to stay in the Montreal area for the following year. Youth were recruited through interviewers who regularly visited all major agencies in Montreal offering free services to street youth. The frequency of these visits was determined by the volume of youth served by each of the individual agencies. These agencies included drop-in centres, shelters, outreach vans and other facilities offering outreach services.

An interviewer-administered questionnaire and HIV antibody testing were completed at entry and on a semi-annual basis thereafter. The baseline questionnaire used in this study was previously validated and assessed for the acceptability of the questions and the length of the questionnaire. The reliability has also been evaluated [19]. The baseline questionnaire elicited detailed information on socio-demographic characteristics, substance use, and sexual behaviour including involvement in prostitution.

Measurement

Characteristics and behaviours reported at baseline by female street youth involved in prostitution in the six months prior to the baseline visit were compared with those females who reported never having engaged in prostitution. We chose a broad definition of prostitution in order to capture a large spectrum of situations involving, “the exchange of sex for money, gifts, drugs, a place to sleep or other things”. Variables of interest in these analyses included: socio-demographic characteristics such as age at baseline, country of birth, and the highest level of education achieved; personal history variables

included having ever been without a place to sleep, having ever run away from home, and having ever been kicked out of home. Sources of income in the six months prior to baseline included: social assistance, defined as the receipt of money from social welfare, employment insurance, a youth centre or social worker; employment income, defined as money earned through occasional or regular work; and illegal sources of income, including stealing and selling drugs. Income from prostitution was excluded from this category.

The use of alcohol and other drugs, injection drug use and needle sharing behaviours were compared. An alcohol index was calculated as the product of the frequency of drinking in the month prior to the baseline interview (never, not every week, 1 to 2 times per week, greater than 3 times per week) and the number of drinks consumed at one time (1, 2 to 5, 6 to 10, greater than 10) adapted from Werner et al. [20]. Bingeing on alcohol or drugs was defined as having “gotten drunk or high for one day or more”, respectively. The drugs most often injected in the six months prior to baseline were grouped into cocaine, heroin and other.

Sexual behaviour variables including lifetime sexual activity, sexual abuse (both intra- and extra-familial), number and types of sexual partners, condom use and a history of pregnancy were compared for the two groups of girls.

Statistical Methods

Medians and crude proportions were calculated for girls involved in prostitution and girls with no history of prostitution at baseline. Categorical variables were compared using Pearson’s chi-squared test. Contingency tables that contained one or more expected counts of less than five were analysed

using the Fisher's exact test. Comparisons of continuous variables for the two groups were carried out using the Mann-Whitney U test. All reported p-values are two sided and considered statistically significant if $p \leq 0.05$.

RESULTS

As of the end of March 2000 there were 312 girls between the ages of 14 and 25 years who had completed a baseline questionnaire. Of these, 87 (28%) reported involvement in prostitution in the six months prior to baseline. One hundred sixty-five girls reported no history of involvement in prostitution prior to baseline. Comparison of socio-demographic characteristics revealed no significant differences between girls involved and not involved in prostitution with respect to the median age at recruitment (18 years vs. 19 years $p=0.758$), the proportion born in Canada, or the highest level of education attained (Table 1). Ninety-nine percent of girls involved in prostitution had ever been without a place to sleep compared with 92% of girls with no history of prostitution. The median age at the first time without a place to sleep was lower by one year for girls involved in prostitution (14 years vs. 15 years $p=0.004$). Twenty percent more girls involved in prostitution reported ever having run away and 24% more girls involved in prostitution reported having ever been kicked out of home compared to girls with no history of prostitution. With respect to sources of income in the six months prior to baseline, similar proportions of girls in the two groups reported income from social assistance, occasional or regular employment or from family or friends. However, 66% of girls involved in prostitution received income from illegal activities compared with 39% of girls with no history of

prostitution and 85% of girls involved in prostitution reported receiving income from panhandling compared with 70% of girls with no history of prostitution.

Alcohol and non-injection drug use is summarised in Table 2. All girls reported having ever used alcohol but 18% more girls involved in prostitution reported having ever binged on alcohol. The median alcohol index was six for both groups. Eighty-nine percent of girls involved in prostitution reported ever bingeing on drugs compared to 62% of girls with no history of prostitution. Compared to girls with no history of prostitution, at least 10% more girls involved in prostitution reported the use of all drugs with the exception of marijuana.

With respect to injection drug use, 66% of girls involved in prostitution reported having ever injected drugs compared with 33% of girls with no history of prostitution (Table 3). The median age at the time of first injection drug use among girls involved in prostitution was younger by one year (16 years vs. 17 years $p=0.027$). Twenty-two percent more girls involved in prostitution reported injecting drugs greater than 50 times in their lifetime. Of the girls who reported ever having injected drugs, similar proportions of girls in the two groups reported injection drug use in the six months prior to baseline. However, girls involved in prostitution were twice as likely to report injecting cocaine most often in the six months prior to baseline. Comparison of needle sharing behaviours for the six months prior to baseline revealed that although not statistically significant, three times more girls involved in prostitution shared needles with 2 to 10 people. Finally, tattooing and body

piercing were found to be more frequent behaviours among girls involved in prostitution compared to girls with no history of prostitution.

Table 4 summarises reported sexual behaviour for girls involved and not involved in prostitution. Most girls in both groups had engaged in some type of sexual activity. The median age of first consensual sexual experience for girls involved in prostitution was lower by one year compared to girls with no history of prostitution (13 years vs. 14 years $p=0.016$). Twenty-nine percent more girls involved in prostitution reported having been sexually abused. The proportions of girls having engaged in vaginal sex was similar for the two groups; however 15% more girls involved in prostitution reported having engaged in anal sex and 9% more girls involved in prostitution reported having engaged in oral sex. Reported condom use for each sexual act (vaginal, anal, oral) was not statistically different between the two groups. However, consistent condom use was below 10% for both groups for vaginal and oral sex. Although not statistically different, 18% of girls involved in prostitution reported always using a condom during anal sex compared with 31% of girls with no history of prostitution. Sixty-eight percent of girls involved in prostitution reported often or always being under the influence of alcohol or drugs during sex compared with 37% of girls with no history of prostitution. Very few girls in either group did not report a male sexual partner, regular or casual, in the six months prior to baseline. Girls involved in prostitution reported higher numbers of male partners in the six months prior to baseline compared to girls with no history of prostitution. Further, 24% more girls involved in prostitution reported having had a regular or casual female sexual partner in the six months prior to baseline. Girls involved in

prostitution consistently reported higher numbers of risk sexual partners such as an injection drug user (80% vs. 59%), a gay or bisexual male partner (41% vs. 23%), a male partner involved in prostitution (35% vs. 12%), or a female partner involved in prostitution (25% vs. 4%). Reported condom use with risk partners was low for both groups of girls, with 11% less girls involved in prostitution reporting always using condoms with a risk partner. Similar proportions, approximately 50%, of girls in both groups reported having ever been pregnant.

DISCUSSION

Girls involved in prostitution have lifestyles that may place them at increased risk of HIV infection. This is evident by the fact that on average, girls involved in prostitution were younger the first time they were without a place to sleep. They were also more likely to report having run away from home and having been kicked out of home. Homeless youth have been shown to be at increased risk for HIV infection due in part to the fact that the probability of engaging in HIV-risk behaviour increases with the length of the homelessness [21]. It has been previously suggested that youth who are homeless for longer periods of time are more likely to become involved in risky sexual and drug-using activities. They may incur more material needs, thereby further reducing inhibitions against risk-taking behaviours and increasing their exposure to high-risk populations [13]. Further differences between the two groups of girls in this study were evident in their sources of income. Girls involved in prostitution were more likely to have received income from illegal sources, including stealing and selling drugs. They were

also more likely to have used panhandling as a means of acquiring income compared to girls with no history of prostitution. These characteristics suggest that those girls involved in prostitution may be more dependent on the street economy and have an increased likelihood of engaging in behaviours that put them at risk for HIV infection.

Substance use is often a part of life for homeless youth [22]. Overall, substance use behaviours were more common among girls involved in prostitution. A higher proportion of these girls reported ever bingeing on alcohol and drugs and having had sexual relations under the influence of alcohol or drugs. Further, girls involved in prostitution reported higher levels of use for all drugs examined with the exception of marijuana. Substance use may place youth at increased risk of infection with HIV by disinhibiting sexual behaviour [1, 18]. The likelihood of engaging in HIV risk behaviours may increase during times of decreased cognition associated with substance use and the use of substances during sex may lead to a decrease in both the perception of risk and the negotiation of safer sex behaviours.

An important difference between the two groups was identified with respect to injection drug use which was found to be higher for girls involved in prostitution. The sharing of injection equipment and injection of cocaine as the drug of choice have been shown to be independent risk factors for infection with HIV [23-28]. Although the reporting of needle and syringe sharing behaviours was not statistically different between the two groups there was a tendency towards more sharing behaviours among girls involved in prostitution and more girls involved in prostitution reported injecting cocaine most often. Sharing behaviours may be a function of homelessness

and drug addiction, particularly cocaine addiction, rather than involvement in prostitution specifically. Needle sharing is further encouraged by the unstable lifestyle of street youth. Strategies to reduce needle sharing such as continuous education campaigns, increased access to needle exchange facilities and safe injecting sites are important as a mechanism to decrease HIV transmission for all street involved individuals.

Almost all girls in both groups reported some type of sexual activity in their lifetime. A significantly higher proportion of girls involved in prostitution reported sexual abuse. Childhood sexual abuse has been linked with many HIV risk behaviours including prostitution [14, 29-31]. Sexual violence against prostitutes is also a well recognised problem [32-34] and may represent another risk for HIV infection.

In this study, girls involved in prostitution had initiated sexual activity at a younger age. Younger age at first coitus has been linked to risky sexual behaviour including multiple partners and risk partners such as bisexual men, injection drug users and HIV positive men [35]. These previous findings are supported by the current study in that girls involved in prostitution reported more lifetime and recent sexual partners. Further, girls involved in prostitution were also more likely to report unprotected sexual activities with partners that may place them at increased risk of infection with HIV. Overall, the young age of initiation into sexual activity is of concern for all girls in this study as research has shown that younger women are at increased risk of HIV infection due to physiological vulnerability [36].

A higher proportion of girls involved in prostitution had engaged in anal sex. Among gay and bisexual men, anal sex is a known risk factor for HIV

transmission [37-39]. Few studies have examined the risk of HIV transmission associated with anal sex among women. The studies that have explored this relationship have shown anal sex to be associated with a 1.4-fold to 5.1-fold increase in the risk of HIV infection [36, 40, 41]. Consistent condom use was low for all girls, with the highest levels of condom use reported for anal sex in both groups. This suggests that prevention messages such as those targeted towards homosexual men may filter through to the general heterosexual population. Even so, less than one-third of girls reported always using condoms for anal sex. This indicates that prevention messages must continue to be sensitive to the experiences of young women and condom promotion for all sex acts is necessary. The low levels of consistent condom use may be further exacerbated by the large proportion of girls involved in prostitution who reported often or always being under the influence of alcohol or drugs during sex.

Three times more girls involved in prostitution reported having had 1 to 5 female partners in the six months prior to baseline. Literature related to same-sex partnerships among female prostitutes is limited. However, other studies conducted among street youth have indicated that same-sex relationships among female street youth are not uncommon [17, 42]. Women who have sex with women have been considered to be the lowest risk category for HIV infection [43]. However, a large proportion of lesbian women, particularly those who are young and street involved, also engage in sex with men, which may put them at increased risk of infection with HIV. Many female youth may identify as heterosexual but engage in sex with female partners. Thus, intervention strategies directed towards street involved

females must incorporate prevention messages for sexual relationships with both men and women.

The high proportions of girls in both groups reporting pregnancy indicates that their birth control needs are not being met. The proportions of girls reporting pregnancy is close to double that found in a study of American female homeless youth [44] but similar to the proportion of homeless girls reporting pregnancy in a study conducted in California [7]. Further, the levels of pregnancy are indicative of the high levels of unprotected sex, which in turn increases the likelihood of infection with sexually transmitted pathogens. In Canada it is possible for street involved individuals to access care with no charge. However there are other important barriers, both personal and societal, that prevent street youth from accessing health services. It is imperative that health care professionals who interact with these youth promote global sexual health including screening for sexually transmitted diseases, HIV counselling and testing, as well as condom education and provision. Increased efforts to provide pregnancy counselling and access to effective birth control measures such as injectable contraceptives are essential to reduce the rates of adolescent pregnancy.

Limitations of this study must be taken into consideration in the interpretation of the results. First, because the study population was recruited through services directed towards street youth, the results may not be generalisable to a broader street youth population if there are a group of youth who do not access these services. It is possible that youth who do not access services are further marginalised and at greater risk of HIV infection. Conversely, we may have missed well organised youth who do not need to

use services. The number of street youth not benefiting from the free services available in Montreal is unknown [17]. However, a survey of street involved people in Montreal reported that 90% of persons used community based agencies or services [45]. We therefore feel that our sample is likely representative of the street youth population in Montreal. Secondly, this study relies on self-reported information. It is possible that participants may have under-reported behaviours, particularly those that may be illegal or socially unacceptable. We have attempted to minimise this by ensuring participants of confidentiality and through establishing a trustful relationship between the interviewers and the study participants.

In conclusion, our study has shown that girls involved in prostitution compared to girls not involved, reported more sexual and drug use behaviours known to transmit HIV. For this group, injection drug use most likely represents the greatest risk of HIV infection. Further, risk of HIV infection due to sexual risk behaviour is far from being limited to commercial partners as these young women take sexual risks in their personal relationships. Strategies to reach these girls and to provide them with personalised prevention messages and preventative health care is a major challenge for public health authorities.

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Table 1: Comparison of socio-demographic characteristics of female street youth involved (n=87) and not involved (n=165) in prostitution

	Prostitution n (%)	No Prostitution n (%)	p-value
Ever Without a Place to Sleep			
Yes	86 (99)	152 (92)	0.039
No	1 (1)	13 (8)	
Ever Run Away from Home			
Yes	69 (79)	97 (59)	0.001
No	18 (21)	68 (41)	
Ever Kicked Out of Home			
Yes	57 (66)	70 (42)	<0.001
No	30 (34)	95 (58)	
Born In Canada			
Yes	83 (95)	159 (96)	0.741
No	4 (5)	6 (4)	
Education Level			
Primary	5 (6)	5 (3)	0.430
Secondary 1-5	70 (81)	132 (81)	
CEGEP 1-2	7 (8)	21 (13)	
University/Trade	5 (6)	6 (4)	
Source of Income (6 months)			
Social Assistance	36 (41)	69 (42)	0.946
Employment	47 (54)	106 (64)	0.114
Friends or Family	67 (77)	122 (74)	0.592
Illegal Activities (excluding prostitution)	57 (66)	65 (39)	<0.001
Panhandling	74 (85)	115 (70)	0.007

Table 2: Comparison of lifetime substance use behaviours of female street youth involved (n=87) and not involved (n=165) in prostitution

	Prostitution n (%)	No Prostitution n (%)	p-value
Ever Used Alcohol			
Yes	87 (100)	165 (100)	
No			
Alcohol Bingeing			
Yes	57 (66)	78 (48)	0.007
No	30 (34)	86 (52)	
Alcohol Index (frequency x amount)			
Median (IQR*)	6 (1-11)	6 (1-11)	0.076
Drug Bingeing			
Yes	77 (89)	101 (62)	<0.001
No	10 (11)	63 (38)	
Crack			
Yes	63 (72)	66 (40)	<0.001
No	24 (28)	99 (60)	
Marijuana			
Yes	87 (100)	157 (95)	0.054
No	0 (0)	8 (5)	
Heroin			
Yes	49 (56)	61 (37)	0.003
No	38 (44)	104 (63)	
Speedball			
Yes	29 (34)	26 (16)	0.001
No	57 (66)	139 (84)	
Acid/PCP			
Yes	83 (95)	132 (80)	0.001
No	4 (5)	33 (20)	
Cocaine			
Yes	81 (93)	107 (65)	<0.001
No	6 (7)	58 (35)	
Mushrooms			
Yes	75 (86)	124 (75)	0.041
No	12 (14)	41 (25)	
Solvents			
Yes	45 (52)	45 (27)	<0.001
No	42 (48)	120 (73)	

* Interquartile Range

Table 3: Injection drug use behaviours, tattooing and body piercing of female street youth involved (n=87) and not involved (n=165) in prostitution

	Prostitution n (%)	No Prostitution n (%)	p-value
Injection Drug Use (Ever)			
Yes	57 (66)	55 (33)	<0.001
No	30 (34)	110 (67)	
Number of Events – Injections (lifetime)			
> 50 times	23 (55)	12 (33)	0.058
≤ 50 times	19 (45)	24 (67)	
Injection Drug Use (last 6 months)			
Yes	48 (84)	44 (80)	0.561
No	9 (16)	11 (20)	
Drug Injected Most Often (6 months)			
Cocaine	20 (43)	9 (21)	0.033
Heroin	24 (51)	34 (77)	
Other*	3 (6)	1 (2)	
Injected with a Used Needle (6 months)			
Yes	15 (58)	5 (33)	0.133
No	11 (42)	10 (67)	
Number of People Shared Needle With (6 months)			
0	22 (46)	26 (59)	0.087
1	10 (21)	13 (30)	
2-10	15 (31)	5 (11)	
11+	1 (2)	0 (0)	
Ever had a Tattoo			
Yes	52 (60)	69 (42)	0.007
No	35 (40)	96 (58)	
Ever had Body Piercing			
Yes	66 (76)	105 (64)	0.048
No	21 (24)	60 (36)	

* Speedball, PCP, steroids or alcohol

Table 4: Comparison of sexual behaviours of female street youth involved (n=87) and not involved (n=165) in prostitution

	Prostitution n (%)	No Prostitution n (%)	p-value
Sexual Activity			
Yes	87 (100)	161 (98)	0.302
No	0 (0)	4 (2)	
Sexual Abuse			
Yes	71 (82)	85 (53)	<0.001
No	16 (18)	76 (47)	
Vaginal Sex			
Yes	87 (100)	155 (97)	0.165
No	0 (0)	5 (3)	
Anal Sex			
Yes	33 (38)	36 (23)	0.010
No	54 (62)	124 (77)	
Oral Sex			
Yes	87 (100)	146 (91)	0.003
No	0 (0)	14 (9)	
Condom Use for Vaginal Sex			
Always	3 (3)	11 (7)	0.243
Inconsistent	84 (97)	144 (93)	
Condom Use for Anal Sex			
Always	6 (18)	11 (31)	0.233
Inconsistent	27 (82)	25 (69)	
Condom Use for Oral Sex			
Always	4 (5)	6 (4)	0.859
Inconsistent	83 (95)	140 (96)	
Under Influence of Drugs/Alcohol during Sex (6 months)			
Never	4 (5)	24 (15)	<0.001
Sometimes	24 (28)	77 (48)	
Often/ Always	59 (68)	58 (37)	
Total Number Male Partners* (6 months)			
0	0 (0)	3 (3)	<0.001
1-5	15 (24)	72 (83)	
6-20	21 (33)	12 (14)	
20+	27 (43)	0 (0)	
Total Number Female Partners* (6 months)			
0	42 (67)	79 (91)	0.001
1-5	17 (27)	7 (8)	
6+	4 (6)	1 (1)	
Injection Drug Using Partner			
Yes	66 (80)	90 (59)	0.001
No	17 (20)	63 (41)	
Gay or Bisexual Male Partner			
Yes	31 (41)	34 (23)	0.004
No	44 (59)	116 (77)	
Male Partner Involved in Prostitution			

Yes	29 (35)	19 (12)	<0.001
No	53 (65)	137 (88)	
Female Partner Involved in Prostitution			
Yes	21 (25)	6 (4)	<0.001
No	64 (75)	153 (96)	
Always Use Condom with Risk Partner			
Yes	8 (13)	19 (24)	0.073
No	56 (87)	59 (76)	
Ever Pregnant			
Yes	45 (52)	74 (47)	0.412
No	41 (48)	84 (53)	

* Excluding commercial partners

The existing literature provides evidence that female street youth are at increased risk of HIV infection due to behaviour patterns. Of particular concern is the higher level of risk incurred by female street youth involved in prostitution. Results presented in the first manuscript highlight the sexual and drug using behaviours of these girls that place them at even greater risk of becoming infected with HIV.

The higher prevalence of risk behaviours for girls involved in prostitution indicates the need for better targeted intervention strategies. Of particular importance in the design of successful intervention strategies is an understanding of why a subset of female street youth become involved in prostitution. Which characteristics, socio-demographical or behavioural, predict entry into prostitution for girls on the street? Several studies have attempted to address this question. Some have examined the impact of one particular life experience such as childhood sexual abuse, on the likelihood of engaging in prostitution [43, 50-52, 69, 70]. Others presented a more general exploration of risk factors associated with prostitution among adult [40, 41, 45, 49, 66] and juvenile women involved in prostitution [42, 44, 46, 47, 66].

Research has shown that women often become involved in prostitution in their early adolescent years [64, 66, 69, 70]. Other studies have linked running away and homelessness with the need to sell sex for survival [49, 50]. The literature suggests that it is not necessarily family environmental factors that contribute to entry into prostitution but that the family environment may lead an individual into a situation, such as running away, that favours prostitution as an economic alternative [49]. Running away from home has been proposed as a representation of the severing of family relationships. The

severing of these relationships with family and lack of marketable skills create a condition of extreme vulnerability that then facilitates entry into prostitution [70]. However, not all youth who runaway or are street-involved become involved in prostitution. The second study aimed at identifying life events that predicted entry into prostitution among an already vulnerable population of street youth. It is important to gain perspective on early life experiences that facilitate entry into prostitution. The following analysis utilised data from a prospective cohort of female street youth to identify predictors of initiation into prostitution. The hope is that such information may facilitate the development of effective intervention strategies for young homeless women.

Predictors of Initiation into Prostitution among Female Street Youth

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ABSTRACT

Background: Prostitution among female street youth represents an important risk factor for several health problems. Little is known about the incidence and determinants of prostitution in this vulnerable population and no data have been previously reported based on a longitudinal follow-up study. The objective of this study was to determine predictors of initiation into prostitution among female street youth.

Methods: Female youth aged 14 to 25 years were enrolled in the Montreal Street Youth Cohort. They completed a baseline and at least one follow-up questionnaire between January 1995 and March 2000. Girls who reported never having engaged in prostitution at baseline were followed prospectively to estimate the incidence and predictors of prostitution.

Results: Of the 312 female street youth enrolled in the cohort as of March 2000, 165 reported no history of involvement in prostitution at baseline. Thirty of these 165 girls became involved in prostitution over the course of the study (mean follow-up: 1.9 years) resulting in an incidence rate of 11.5/100 person-years. Multivariate Cox regression analysis revealed being 18 years or younger (Hazard Ratio (HR): 2.2; 95% Confidence Interval (CI): 1.0-4.8), using alcohol everyday (HR: 1.3; 95%CI: 1.1-1.5), and using at least three types of illicit drugs (HR: 5.4; 95%CI: 1.6-18.4) to be independent predictors of initiation into prostitution.

Conclusion: The incidence of prostitution in female street youth is elevated. Young age, alcohol misuse and multi-drug use are important predictors of initiating involvement in prostitution.

Key Words: Homelessness – Predictors – Prostitution – Street Youth – Women

INTRODUCTION

Prostitution is a common occurrence among street youth. In the United States estimates of the prevalence of runaway and homeless youth who have been involved in prostitution range from 10 to 50% ¹⁻¹¹. In Canada estimates of the prevalence of a history of prostitution among street youth range from 12 to 32% ^{12, 13}. The wide range of these estimates is due in part to variation in the definition of prostitution used by investigators. For example some investigators use a narrow definition of prostitution that includes only the exchange of sexual activities for money, while others use a broader definition that encompasses the trading of sex to meet subsistence needs such as food, shelter and protection. Although the definition may vary, the basic premise of the exchange of sexual activity for material or personal gain remains constant. Both boys and girls are reported to be involved in youth prostitution; however the majority of this population is comprised of 14 to 17 year old girls ¹⁴ and prostitution among adolescent females is a growing phenomenon in major cities on every continent ¹⁵.

The high proportion of street youth involved in prostitution leads to concern about the risks associated with selling sex for survival. The psychological and physical dangers inherent in prostitution make it among the most damaging repercussions of homelessness among youth ¹⁶. Such dangers include physical and sexual assault in addition to depressive disorders, suicide, drug addiction and infection with sexually transmitted agents such as the human immunodeficiency virus (HIV). The endpoint of

these health problems is increased mortality^{17, 18} as evidenced by a study of adult female prostitutes in London, England that reported a mortality rate of 5.93 per 1000 person-years. This rate was 12 times the expected rate for women of a similar age¹⁷.

Numerous research groups have examined the antecedents to prostitution^{11, 16, 19-28}. Several important associations between life events and prostitution have been observed. For girls, abuse in childhood including sexual and physical abuse, substance use and homelessness have been linked with entry into prostitution. Limitations of previous research included the use of exclusively incarcerated or institutionalised subjects and retrospective reporting by older, adult prostitutes. Some studies of prostitutes failed to include appropriate comparison groups or included comparison groups that were substantially different from the study population. Further, previous research has relied primarily on a cross-sectional study design. Only one of the reviewed studies utilised a prospective design²⁸ however, this study only explored one risk factor, namely victimisation in childhood as a precursor to prostitution among abused and neglected children.

The purpose of the present study was to determine the incidence of prostitution and predictors of initiation into prostitution among female street youth. This study utilised data from a prospective cohort of female street youth with no history of prostitution, this study design allowed for the determination of temporal relationships between independent precursors and prostitution.

METHODS

Since its inception in January 1995, youth between the ages of 14 and 25 years were enrolled in the Montreal Street Youth Cohort. In order to be eligible for recruitment into the cohort, the youth had to have either been without a place to sleep more than once or have regularly used the services of one of the Montreal street youth agencies in the previous year. These criteria were used to capture a broad spectrum of street youth, as it is known that youth have different experiences based in part on the degree of involvement in street life. Further eligibility criteria required that the youth speak either English or French and be intending to stay in the Montreal area for the following year. Youth were recruited through interviewers who regularly visited all major agencies in Montreal offering free services to street youth. The frequency of these visits was determined by the volume of youth served by each of the individual agencies. These agencies included drop-in centres, shelters, outreach vans and other facilities offering outreach services.

Criteria for exit from the cohort were also defined. These criteria stipulated that over a two year period, if a study participant was not without a place to sleep while residing in Montreal or did not frequent the street youth services in Montreal, he or she was excluded from further follow-up. In addition, when individuals reached 30 years of age they were no longer eligible to continue in the cohort.

An interviewer-administered questionnaire and HIV antibody test were completed at entry into the study and on a semi-annual basis thereafter. The baseline questionnaire used in this study was previously validated and

assessed for the acceptability and the length. The reliability was also evaluated²⁹. The baseline and follow-up questionnaires elicited detailed information on socio-demographic characteristics, substance use, and sexual behaviour including involvement in prostitution.

Due to the transient nature of street life, rigorous follow-up procedures were employed. Detailed contact information was collected from all participants at baseline and updated thereafter. Interviewers contacted the participants approximately two weeks prior to the planned follow-up interview date by telephone, pager, and/or leaving messages at agencies known to be frequented by the youth. As well, to facilitate contact by the subjects the project had a toll-free telephone number. Lists of subjects without valid telephone numbers were sent each month to the social insurance office, youth centres, detoxification centres, probation offices as well as prisons and detention centres. These organisations, as authorised by the subjects on the consent form, provided addresses, contact information or sent messages to the participant. Twice a year, a list of subjects lost to follow-up was sent to the coroner's office.

Interviews were conducted at the study office located in an area of downtown Montreal frequented by street youth. An interviewer met subjects who had left the Montreal area during the follow-up period but were living within a driving distance of one and one-half hours of Montreal. Additionally, there were interviewers in other major Canadian cities for participants who had moved.

Study Variables

A broad definition of prostitution was used in the questionnaire to capture all situations involving, “the exchange of sex for money, gifts, drugs, a place to sleep or other things”. Independent variables were treated either as baseline variables (i.e. variables measured at the baseline interview and that did not vary thereafter), and time-dependent variables (i.e. variables reassessed at each follow-up interview). Time-dependent variables were further defined as irreversible variables (i.e. biographical characteristics that can change only once, from the absence of the characteristic to the presence of the characteristic) and transient variables (i.e. variables for which the presence or absence of the characteristic may change over time).

Baseline factors of interest in these analyses included: country of birth, having ever run away from home, and having ever been kicked out of home, the age at which running away from home or being kicked out of home first occurred, and the age the youth was first without a place to sleep.

Irreversible time-dependent events included having a tattoo or body piercing, the age of first bingeing on alcohol or drugs, age of first injection drug use, sexual abuse both intra- and extra-familial, the age at which sexual abuse first took place and the age at which first consensual sex occurred.

Age effects were explored for variables where the overall effect of exposure met our significance criteria of $p \leq 0.10$. For the purpose of this analysis all ages were dichotomised at the median value for the study participants.

Transient time-dependent variables included age, employment or school attendance, and having been without a place to sleep. Transient substance use variables of interest were the use and frequency of use of

alcohol, non-injection drugs and injection drugs, bingeing on alcohol or drugs, and the use of at least three types of drugs. Bingeing was defined as having “gotten drunk or high for one day or more”, respectively. The use of at least three types of drugs was defined as the reported use of at least three of the following; crack, marijuana, heroin, cocaine, cocaine-heroin mix (speedball), methadone, amphetamines and tranquillisers (without a prescription), mushrooms, codeine, acid, PCP, or solvents. Transient sexual behaviour variables included sexual activity, the types of sexual partners such as having a regular or casual homosexual partner and various risk partners.

Statistical Methods

The current study was restricted to girls who had never engaged in prostitution at study entry and who had completed at least one follow-up questionnaire. The incidence of prostitution was calculated as the number of girls who reported becoming involved in prostitution over the course of follow-up divided by the total person-time under observation. Person-time was defined as the interval between enrolment and the most recent follow-up visit for subjects who did not report engaging in prostitution through March 2000. For subjects who initiated prostitution during follow-up, person-time was calculated as the interval between enrolment and the date of initiation into prostitution, which was elicited from the subject at the first visit where prostitution was reported. Ninety-five percent confidence intervals for the incidence estimate were calculated using the Poisson distribution. Some girls reported prostitution for the first time during the follow-up period but indicated that the date at which prostitution had first occurred was prior to baseline: these individuals were considered to be prevalent cases of

prostitution and were excluded from the analyses. Crude rates of prostitution in association with potential predictors were calculated as the number of exposed girls who entered prostitution divided by the person-time attributed to the exposed variable. Predictors of initiation into prostitution were determined using backward-selection Cox proportional hazards regression. Baseline and time-dependent variables found to be statistically significant at $p \leq 0.10$ in univariate regression analyses were included in the multivariate Cox model.

RESULTS

As of the end of March 2000, 312 girls had completed at least the baseline questionnaire and 165 girls reported never having engaged in prostitution prior to baseline. These 165 girls constituted our study cohort and they were followed for 260.2 person years. Of these girls, 30 initiated involvement in prostitution between the baseline visit and the end of follow-up. Thus, the incidence rate of prostitution among female street youth was found to be 11.5 per 100 person-years (pyrs) (95% Confidence Interval: 7.8/100 pyrs - 16.5/100 pyrs).

Baseline characteristics and behaviours of the study subjects are summarised in Table 1. The median age at baseline was 19 years (interquartile range: 17-20) and 159 (96%) girls were born in Canada. Ten (6%) girls reported having an Aboriginal parent. Markers of homelessness characterised by having ever been without a place to sleep, having run away from home and having been kicked out of home were reported by at least 40% of all girls. Reporting of substance use was high; almost half of all girls reported having

ever binged on alcohol and 61% reported having ever binged on drugs. Forty-nine percent of girls reported using drugs more than twice per week in the six months prior to baseline and 71% had ever used at least three types of drugs. One third of girls reported a history of injection drug use. Almost all of the girls had engaged in some type of sexual activity, 21% had experienced intra-familial sexual abuse and 42% had experienced extra-familial sexual abuse.

Table 2 presents univariate socio-demographic and personal characteristic predictors of initiation into prostitution. The rate of initiation into prostitution was highest among those girls who were 18 years or younger (rate: 20.8/100 pyrs), had been without a place to sleep (rate: 15.6/100 pyrs), and had ever run away from home (rate: 11.6/100 pyrs). Being younger than 18 years was found to increase the risk of becoming involved in prostitution by a factor of 2.1. No other socio-demographic or personal characteristic variables investigated were found to significantly increase the risk of initiation into prostitution.

As shown in Table 3, the rate of initiation of prostitution was increased among those girls who binged on drugs (rate: 16.6/100 pyrs) and were using different types of drugs such as, acid/PCP (rate: 16.0/100 pyrs), crack (rate: 27.4/100pyrs), cocaine (rate: 19.6/100 pyrs), and speedball (rate: 32.9/100pyrs). Further, those girls who used drugs more frequently than twice per week and used at least three types of drugs had an increased rate of initiation into prostitution. The use of alcohol on a daily basis within the month prior to the interview was associated with 1.3-fold increase in the risk of initiation into prostitution. The use of acid and/or PCP (Hazard Ratio (HR)=3.6), cocaine (HR=3.4), crack (HR=3.0) and speedball (HR=2.9) were also

found to be predictive of initiation into prostitution. Further, the use of at least three types of drugs increased the risk of initiation into prostitution by 5.9 times. Injection drug use was found to be associated with 2.4-fold increase in the risk of initiation into prostitution.

Many sexual behaviours were associated with an increased rate of initiation into prostitution (Table 4). In particular, sexual abuse perpetrated by a family member (rate: 16.0/100 pyrs), having a regular or casual homosexual partner (rate: 35.1/100 pyrs) or having a female partner involved in prostitution (rate: 71.9/100 pyrs). Having a regular or casual homosexual partner was found to be associated with a 3.0-fold increase in the risk of initiation into prostitution. Moreover, having a female partner involved in prostitution increased the risk of initiation into prostitution by 5.8 times. No other sexual behaviour variable was found to be predictive of initiation into prostitution.

Multivariate Cox proportional hazards regression was used to identify independent predictors of initiation into prostitution. After including for all variables found to be statistically significant in the univariate analyses at $p \leq 0.10$ we used a backward elimination strategy and found: being 18 years or younger (HR=2.2; 95% Confidence Interval (CI): 1.0-4.8), using alcohol everyday (HR=1.3; 95%CI: 1.1-1.5), and using at least three types of drugs (HR=5.4; 95%CI: 1.6-18.4) were found to be independent predictors of initiation into prostitution.

DISCUSSION

Our research showed that being 18 years or younger was independently predictive of initiation into prostitution. This finding is supported by previous descriptive studies that indicated that girls first become involved in prostitution in their early teen years. In a study of female adolescent prostitutes, Nadon et al. ²⁴ reported that the average age of initiation into prostitution for females was 14 years with a range of 10 to 18 years. Badgley ³⁰ reported the average age at first prostitution event to be 16 years for girls and 50% of girls had begun prostituting under the age of 16 years. Moreover, 19% of the girls in that study had begun prostituting at age 13 or younger.

Substance use has been shown to be associated with prostitution by a number of investigators ^{16, 23, 24, 27, 31, 32}. A study of former female juvenile prostitutes indicated that 40% of the women reported needing money to support a drug habit as their main reason for entering prostitution ³². Further, in a study of 200 juvenile and adult female street prostitutes, 55% of the subjects reported being addicted to drugs prior to involvement in prostitution while 30% became addicted following and 15% concurrently with their prostitution involvement ³¹. As exhibited by these studies, the temporal relationship between drug use and involvement in prostitution has not been delineated. The current study indicates that substance use, characterised by the use of alcohol on a daily basis and the use of at least three types of drugs is predictive of initiation into prostitution. An increase in experimentation with alcohol and other illicit drugs in late adolescence ³³ may facilitate addiction

which in turn may increase the likelihood of entry into prostitution as a means of financing drug dependence.

There has been debate in the literature as to the role of childhood sexual abuse as a precursor to prostitution both among adolescent and adult women 19, 21, 22, 24, 27, 28, 34. Seng 21 reported that the relationship between childhood sexual abuse and prostitution was not direct but involved runaway behaviour. This in turn could lead to homelessness, drug addiction and finally to prostitution. Given this model it is possible that our study population was not appropriate for the evaluation of the predictive relationship between sexual abuse and prostitution specifically. At baseline 52% of girls in our study reported some type of sexual abuse in their lifetimes and 92% had ever been without a place to sleep. Sexual abuse, like many other forms of destructive parenting, may contribute to a process that increases the probability of involvement in a range of risky behaviours, eventually leading to prostitution 11.

Several limitations must be taken into account in the interpretation of the results presented in this study. Of primary importance is the small number of girls initiating prostitution. This small number may have resulted in a decreased power to detect other predictors of prostitution among these youth. The small number of girls initiating prostitution was due in part to our conservative approach in defining new cases of prostitution. As described in the methods we chose to exclude any person who was incoherent in the reported date of first prostitution event. We feel that this conservative approach is advantageous because it allows for the clear definition of incident

events and a more rigorous analysis of the temporal relationship between life events and entry into prostitution. Secondly, because the study population was recruited through services directed towards street youth, the results may not be generalisable to other street youth. It is possible that youth who do not access services are further marginalised and at greater risk of entry into prostitution. Conversely, we may have missed well organised youth who do not utilise such services. The number of street youth not benefiting from the free services available in Montreal is unknown ¹³. However, a survey of street involved people in Montreal reported that 90% of persons used community based agencies or services ³⁵. Thus, it is likely that our study recruited a broad spectrum of street youth. A third limitation is the fact that our data rely on self-reported information. It is possible that participants may under-report behaviours, particularly those that may be illegal or have associated social stigmas. We have attempted to minimise the likelihood of such under-reporting through repeated assurances of confidentiality and the establishment of a relationship between the interviewer and the participants.

Important influences on a young woman's entry into prostitution identified in the current study include younger age, use of alcohol on a daily basis and the use of at least three types of drugs. Understanding the circumstances that lead to prostitution may be key for developing strategies to curb the entry of youth into sex work and to limit the exploitive and often life threatening situations endured by many prostitutes.

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Table 1: Baseline Characteristics of Female Street Youth with No History of Prostitution

	Number of Youth (n/N)	Proportion (%)
Born in Canada	159/165	96
At least 1 Aboriginal parent	10/159	6
Ever without a place to sleep	152/165	92
Ever ran away from home	97/165	59
Ever kicked out of home	70/165	42
Ever had a tattoo	69/165	42
Ever had body piercing	105/165	64
Ever binge on alcohol	78/164	47
Use alcohol > 2 times/week (last month)	44/164	27
Use alcohol everyday (last month)	15/158	9
Ever binge on drug	101/164	61
Use drugs > than 2 times/week (last month)	81/165	49
Ever use at least 3 types of illicit drugs	117/165	71
Ever use injection drugs	55/165	33
Ever had sexual activity	161/165	98
Ever had intra-familial sexual abuse	35/154	21
Ever had extra-familial sexual abuse	70/160	42
Ever had regular or casual homosexual partner	31/136	23

NB: Denominator may be less than 165 due to missing values

Table 2: Crude rates and univariate Cox proportional hazards ratios: Socio-demographic and personal characteristic predictors of initiation into prostitution

	YES		NO		Hazard Ratio (90% CI)
	N	Rate*	N	Rate*	
Age ≤ 18 years	13	20.8	17	8.6	2.1 (1.1-4.0)
Born in Canada	29	11.5	1	12.9	0.9 (0.2-4.8)
Had night(s) without a place to sleep	21	15.6	9	7.2	1.7 (0.8-3.7)
Ever run away from home	11	11.6	19	11.4	1.0 (0.5-1.9)
Ever kicked out of home	12	10.5	18	12.4	0.8 (0.4-1.5)
Regularly go to school or work	19	12.1	11	10.6	1.2 (0.6-2.3)
Has at least 1 tattoo	15	11.6	15	11.5	1.2 (0.6-2.1)
Has body piercing	12	11.8	6	10.9	1.2 (0.6-2.3)

* Per 100 person-years

**Table 3: Crude rates and univariate Cox proportional hazards ratios:
Substance use predictors of initiation into prostitution**

	YES		NO		Hazard Ratio
	N	Rate*	N	Rate*	(90% CI)
Alcohol bingeing	10	10.3	20	12.3	0.8 (0.4-1.5)
Use alcohol > 2 times/week	7	11.3	23	11.6	0.9 (0.4-1.9)
Use alcohol everyday	2	12.3	28	11.5	1.3 (1.1-1.4)
Drug bingeing	19	16.6	11	7.5	1.9 (1.0-3.6)
Age 1st binged on drugs \leq 14 years of age**	13	18.7	11	10.4	1.3 (0.7-2.6)
Use of:					
Crack	13	27.4	17	8.0	3.0 (1.6-5.7)
Marijuana	28	13.4	2	3.9	2.8 (0.8-9.6)
Heroin	12	17.8	18	9.3	1.8 (0.9-3.3)
Speedball	6	32.9	24	9.9	2.9 (1.3-6.3)
Acid/PCP	26	16.0	4	4.1	3.6 (1.5-9.0)
Cocaine	22	19.6	8	5.4	3.4 (1.7-6.8)
Methadone	3	27.4	27	10.8	2.2 (0.8-5.9)
Amphetamines	6	13.8	24	11.1	1.1 (0.5-2.3)
Tranquillisers	10	19.3	20	9.6	1.7 (0.9-3.3)
Mushrooms	16	15.0	14	9.1	1.4 (0.7-2.7)
Codeine	5	30.0	25	10.4	2.4 (1.0-5.5)
Solvents	6	22.9	24	10.3	1.7 (0.8-4.0)
Use of drugs > 2 times/week (last month)	19	16.8	11	7.5	2.0 (1.0-3.9)
Use of at least 3 types of drugs	27	17.4	3	2.8	5.9 (2.1-16.3)

Injection drug use	13	22.3	17	8.4	2.4 (1.3-4.5)
Age 1st injection drug use \leq 16 years of age**	7	16.9	8	16.7	0.8 (0.4-2.0)

* Per 100 person-years

** Among persons reporting behaviour, reference category equal to older age group

Table 4: Crude rates and univariate Cox proportional hazards ratios: Sexual behaviour predictors of initiation into prostitution

	YES		NO		Hazard Ratio (90% CI)
	N	Rate*	N	Rate*	
Sexual activity	29	11.6	1	10.6	1.1 (0.2-5.7)
1st consensual sex \leq 14 years of age	21	13.2	9	8.9	1.4 (0.7-2.8)
Intra-familial sexual abuse	10	16.0	20	10.1	1.6 (0.9-3.1)
Extra-familial sexual abuse	15	14.2	15	9.7	1.4 (0.7-2.5)
Regular or casual homosexual partner	7	35.1	23	9.6	3.0 (1.4-6.4)
Steroid injecting partner	1	21.1	29	11.4	1.3 (0.2-7.3)
Partner using injection drugs	13	13.1	17	7.2	1.1 (0.6-2.0)
Homosexual male partner	4	16.3	26	11.0	1.2 (0.5-2.9)
Male partner involved in prostitution	4	24.3	26	10.7	1.9 (0.8-4.6)
Female partner involved in prostitution	3	71.9	27	10.5	5.8 (2.0-16.5)

* Per 100 person-years

SUMMARY AND CONCLUSION

Comparison of HIV risk behaviours for homeless girls involved and not involved in prostitution provides evidence for increased levels of HIV risk among girls involved in prostitution. Female street youth involved in prostitution were at increased risk of HIV infection due to their risky sexual behaviours and high levels of injection drug use. Girls involved in prostitution were found to be at increased risk of HIV infection through their sexual behaviour including their young age of initiation into sexual activity and the high proportions of girls who reported unprotected sexual intercourse. Further, girls involved in prostitution were more likely to have reported sexual partners such as injection drug users and men involved in prostitution that may increase their risk of infection with HIV. With respect to injection drug use, more girls involved in prostitution reported cocaine as the drug most often injected. This leads to particular concern about the risks associated with drug bingeing and needle sharing.

The identification of female street youth involved in prostitution as a population at risk for HIV infection leads to the question of why a segment of the street youth population initiate involvement in prostitution while others do not. Exploration of predictors of initiation into prostitution has shown that young age and substance use characterised by the daily use of alcohol and multi-drug use are important life events that precede entry into prostitution among female street youth. Entry into prostitution is a matter of survival for many female street youth. Young girls with limited marketable skills and little or no family support find themselves homeless and alone. They become entrenched in the street economy and often use drugs and alcohol. Both

prostitution and substance use are part of a larger cycle of victimisation experienced by young homeless women. The need for money and drugs may prompt the initial act of prostitution. However, substance use may subsequently become a source of relief for the negative feelings associated with prostitution, thereby perpetuating the cycle.

Strategies to reduce HIV risk among female street youth involved in prostitution must incorporate interventions aimed at the life circumstances that predict entry into prostitution. Individualised health care that includes condom education and provision, addiction services, and counselling is essential for the prevention of an increase in the rates of HIV infection among female street youth.

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