

## A profile of high school students in rural Canada who exchange sex for substances

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### Abstract

The exchange of sexual activities for money, drugs, or other compensation is considered a form of sexual exploitation when it occurs among underage youth. Such practices have been associated with sexual behaviours that increase the risk of sexually transmitted infections. Much of the research on this issue has been conducted on homeless or street-involved youth while adolescents in regular schools have received less attention in this area. The present study examined the prevalence of and factors associated with the exchange of sex for drugs among substance-using students in rural western Canada. Our data source was the 2009 East Kootenay Adolescent Drug Use Survey, a census of students in grades 7–12, who had ever used alcohol, marijuana, or other illicit drugs. In the sample of 2,360 youth, 2% of boys and 3% of girls reported that they had ever exchanged sex for alcohol or drugs, i.e., “exploited” youth, the majority of whom (83% – 98%) were living with family members. The most frequent patterns of past-year substance use were “using alcohol only” for “non-exploited” youth, and using alcohol, marijuana, and other drugs for exploited youth. The exchange of sex was associated with the use of drugs other than alcohol in the past year and with a higher level of impulsivity. The odds of exchanging sex were lower among youth who reported positive family relationships. The findings suggest a need for in-school education about healthy relationships, sexual exploitation, substance use, and impulse control.

### Introduction

In conformity with Article 34 of the United Nations Convention of the Rights of the Child (United Nations Office of the High Commissioner for Human Rights [OHCHR], 1989) and the Optional Protocol on the Sale of Children, Child Prostitution and Child Pornography (OHCHR, 2000), children and adolescents must be protected from all forms of sexual exploitation. The protection of children and adolescents from sexual exploitation is both a human rights issue and a health issue. The exchange of sexual activities for money, drugs, or other goods, a form of sexual exploitation, has been associated with other risky sexual behaviours, such as earlier sexual debut (Pedersen & Hegna, 2003; Svedin & Priebe, 2007), a greater number of sexual partners (Edwards, Iritani, & Hallfors, 2006; Pedersen & Hegna; Svedin & Priebe), and involvement in casual sex (Lavoie, Thibodeau, Gagné, & Hébert,

2010). These behaviours are known to increase the risk of HIV and other sexually transmitted infections (STI); indeed, youth who had engaged in trading sex were found to be more likely than those who had not to report a history of HIV/STI diagnosis (Edwards et al.; Greene, Ennett, & Ringwalt, 1999; Roy et al., 2000). While girls and boys from a variety of circumstances may have experienced exploitation related to exchanging sex, most of the research has focused on runaway, homeless and street-involved youth. There have been fewer population-based studies of youth in school settings. The present investigation therefore focused on high school students in rural western Canada to determine the factors that differentiated youth who had exchanged sex for drugs from youth who had not.

### Prevalence of sexual exchange

Reported rates of the exchange of sex vary depending on sample characteristics, study sites, and sampling methods. In the United States (U.S.), 10% of a nationally representative sample of youth living in shelters and 28% of a multi-city sample of street-involved youth had ever engaged in trading sex (Greene et al., 1999). A history of sexual exchange was reported by 9% of homeless youth in 28 different U.S. states (Walls & Bell, 2011), by 21% of homeless and street youth in Minnesota (Halcón & Lifson, 2004), and 12% of incarcerated adolescents in North Carolina (Castrucci & Martin, 2002). Canadian researchers have also investigated the prevalence of trading sex among street-involved youth and youth in custody. In Montreal, the rates among street-involved youth (ages 13 – 25 years) were 21% for males and 38% for females (Roy et al., 2000). In British Columbia (BC), 33–34% of street-involved boys and 24–27% of street-involved girls (ages 12 – 19 years) indicated that they had ever exchanged sex for money or goods, as did 18–21% of youth in custody (ages 13 – 19 years) (Saewyc, MacKay, Anderson, & Drozda, 2008). Another BC study reported that among street-involved, drug-using youth (median age = 22 years) in Vancouver, 11% had traded sex for money, drugs, or other resources in the past 6 months (Chettiar, Shannon, Wood, Zhang, & Kerr, 2010).

Although a majority of the studies on this topic have targeted homeless and street youth, there are a few that have addressed the prevalence of exchanging sex in general adolescent populations. In a secondary analysis of the National Longitudinal Survey of Adolescent Health (Add Health) using a nationally representative U.S. sample of 7th to 12th graders, 3.5% reported having ever exchanged sex for drugs or money (Edwards et al., 2006). Another analysis of the Add Health data showed that among those who had not exchanged sex in Wave I, 2.3% reported having ever sold sex in Wave III (ages 18 to 26) (Kaestle, 2012). A Norwegian study found that 1.4% of students in grades 8 to 10 had ever given sexual favors for payment (Pedersen & Hegna, 2003). Likewise, 1.4% of 3rd-year high school students in Sweden reported having ever sold sexual services (Svedin & Priebe, 2007). The single Canadian study among students in grades 11 and 12 in Quebec City, found that 4% reported having ever received something (e.g., money, drugs, gifts) in exchange for sexual contact (Lavoie et al., 2010). These four studies of adolescents in school also showed gender differences. In three studies, boys were more likely than girls to report a history of sexual exchange; 4.8% versus 2.3% (Edwards et al.), 2.1% versus 0.6% (Pedersen & Hegna), and 1.8% versus 1.0% (Svedin & Priebe). In contrast, the prevalence findings among students in Quebec City were 2% for boys versus 6% for girls (Lavoie et al.).

## Factors associated with sexual exchange

The exchange of sex for money, goods, or other considerations among youth has been associated with substance use. Youth who had ever exchanged sex were more likely than those with no such history to report binge drinking (Edwards et al., 2006; Kaestle, 2012), earlier onset of alcohol use, regular alcohol use (Svedin & Priebe, 2007), and alcohol-related problems (Pedersen & Hegna, 2003). Marijuana use and other illicit drug use were also associated with a greater risk of involvement in the exchange of sex for money or drugs (Edwards et al.; Greene et al., 1999; Kaestle; Pedersen & Hegna; Svedin & Priebe; Tyler, 2009; van Gelder, Reefhuis, Herron, Williams, & Roeleveld, 2011). Most street-involved youth in BC reported that their first use of alcohol or marijuana occurred before they first engaged in trading sex (Saewyc et al., 2008). Another strong factor for exchanging sex is victimization experiences. Previous studies have shown a relationship between trading sex and being a victim of sexual abuse (Edwards et al.; Kaestle; Lavoie et al., 2010; Saewyc et al.; Stoltz et al., 2007; Svedin & Priebe), physical abuse (Kaestle; Saewyc et al.), threats of violence and/or physical violence (Pedersen & Hegna; Saewyc et al.), emotional abuse (Stoltz et al.), and neglect (Kaestle).

Psychosocial factors have been shown to distinguish youth who have exchanged sex for money or drugs and those who have not. Youth with higher levels of depression (Edwards et al., 2006; Kaestle, 2012; Pedersen & Hegna, 2003; Tyler, 2009) and loneliness (Pedersen & Hegna), those with a history of suicide attempt (Greene et al., 1999; Saewyc et al., 2008; Tyler), and those who experienced a greater number of stressful life events (Lavoie et al., 2010) have been shown to have greater risk of involvement in trading sex. Living situation and family environments are well-established factors. Youth who had exchanged sex were less likely to live with two parents (Kaestle) or either parent (Svedin & Priebe, 2007). Homelessness and being a runaway were associated with trading sex (Edwards et al.; Kaestle), although 20% of street-involved youth in BC were living with their families when they first exchanged sex for money or goods (Saewyc et al.). Youth with a higher level of alcohol exposure at home (Pedersen & Hegna) and those with a family history of substance abuse (Tyler) were more likely to have ever traded sex. Friends' behaviours may also be associated with greater risk of involvement in sexual exchange, e.g., some studies have reported this association with having friends with conduct problems (Pedersen & Hegna) or friends already involved in trading sex (Tyler).

While dysfunctional social relationships and environments are risk factors for exchanging sex, positive relationships with family and school may reduce the likelihood of this behaviour. Few studies have explored potential protective factors. In an analysis of longitudinal data (Add Health), feeling cared about by a parent, feeling happy at school, and feeling that teachers are fair were predictors of non-participation in trading sex in a bivariate model (Kaestle, 2012). A good relationship with mother had an inverse association with survival sex (trading sex for money, shelter, or other rewards, and/or participating in pornography) among homeless youth, whereas another study found no association between their paternal relationship and survival sex (Stein, Milburn, Zane, & Rotheram-Borus, 2009). A study of high school students in Quebec City showed a significant bivariate, but not

multivariate, association between perceived social support and involvement in sexual exchange (Lavoie et al., 2010).

### The present study

The literature reviewed above indicates that the self-reported prevalence of exchanging sex for money, drugs, or other goods among adolescents in regular schools ranged from 1% and 4%. Although a few researchers have investigated this problem, there has been insufficient study of exploitation based on sexual exchange in the general adolescent populations. In Canada, only one such study has been published (Lavoie et al., 2010). In order to better protect youth from this form of sexual exploitation and to promote their sexual health, the goal of the present study was to document the prevalence of trading sex for drugs in a large sample of school-attending youth and to more clearly document the factors associated with greater and lesser risk of involvement in sexual exchange. To that end, we examined substance use patterns among grade 7–12 students in a rural area of western Canada and identified demographic, social, and personality factors that distinguished between substance-using students who did or did not reported exchanging sex for drugs.

## Methods

### Dataset and sample

This study is based on a secondary analysis of data from the East Kootenay Adolescent Drug Use Survey of 2009, conducted by the East Kootenay Addiction Services Society. The survey was a biennial census designed to monitor trends in substance use patterns, related harms, and attitudes among adolescents in school. The target population included all grade 7 to 12 students in the East Kootenay region, a large rural area of southeastern BC. A total of 28 schools participated in the 2009 survey. Parents were provided with an information sheet describing the survey. Parental notification and student consent were required for student participation. In February 2009, the anonymous, paper-and-pencil survey was administered to students in all classrooms. Of 4,126 questionnaires returned, 4,031 were usable in data analysis, representing 77% of registered students in the East Kootenay area (Nicholson, 2009).

Our sample included only students who: (a) had ever used alcohol, marijuana, or other illicit drugs (e.g., mushrooms, inhalants, cocaine); and (b) provided valid responses to the question “If you have used alcohol and/or drugs, have you ever used sexual activities in exchange for or to pay for alcohol and/or drugs?” Of the original sample who reported their gender ( $N = 3,734$ ), 71% reported ever having use of one or more substances in their lifetime and less than 1% did not respond to any questions about lifetime substance use. Ten per cent of students who had used one or more substances in their lifetime did not answer the question on exchanging sex. The exclusion of these missing cases resulted in a final sample of 2,360 consisting of 1,154 boys and 1,206 girls.

### Measures

Our outcome variable was whether a participant had ever exchanged sexual activities for alcohol or drugs. In BC under the Criminal Code of Canada, the definition of sexual

exploitation includes situations in which children or adolescents under age 19 have exchange sex for money or other goods (e.g., drugs). Hence, in the present study, students who reported having ever exchanged sex are referred to as “exploited” with the understanding that this is sexual exploitation. Students who had never exchanged sex in this context are referred to as “non-exploited”.

The survey asked participants how many times in their lives, and in the past year, they had used the following substances: alcohol, marijuana, mushrooms, prescription drugs (for non-medical reasons), inhalants, LSD, cocaine/crack, ecstasy, crystal meth/speed/amphetamines, steroids, and heroin. Responses to each question were dichotomized into use (endorsed options indicating substance use) and no use. Additionally, students were asked about binge drinking. Weekly binge drinking was defined here as the consumption of five or more drinks on one occasion on one or more days a week.

### **Candidate factors associated with sexual exploitation in the context of sexual exchange**

The putative factors associated with sexual exchange for substances were selected based on literature review and data availability. The factors included: substance use patterns in the past year; living situation; social connectedness; social involvement; and personality risk for substance abuse.

**Substance use patterns in the past year**—Three groups of substance use patterns in the past year were created based on a typical sequence of substance use initiation (e.g., White, Jarrett, Valencia, Loeber, & Wei, 2007): These patterns were: a) using alcohol only in the past year or not using alcohol, marijuana, or other drugs in the past year; (b) using marijuana with or without alcohol (but not using other drugs): and (c) using other drugs with or without alcohol or marijuana.

**Living situation**—The participants’ living situations were dichotomized into a) living with family and b) living with friends, on their own, or homeless/couch surfing.

**Social connectedness**—Family connectedness, friend connectedness, and school connectedness were assessed each by one item (e.g., “How close do you feel you are with your family?”). The three items of social connectedness were scored on a 4-point scale, ranging from Not at all (= 0) to Very (= 1).

**Social involvement**—The survey also asked the level of involvement of youth with sports, clubs (e.g., drama, band, 4-H), and community groups or church. Each involvement item was assessed by one a similar question (e.g., “How involved are you in sports?”). The three items of social involvement were scored on a 4-point scale, ranging from Not at all (= 0) to Very (= 1).

**Personality risk for substance abuse**—The Substance Use Risk Profile Scale (SURPS) (Conrod, Pihl, Stewart, & Dongier, 2000; Woicik, Stewart, Pihl, & Conrod, 2009) was used to assess personality vulnerability to substance abuse. The SURPS consists of four subscales measuring levels of Anxiety Sensitivity (5 items), Hopelessness (7 items), Sensation Seeking (6 items), and Impulsivity (5 items). Responses were rated on a 4-point

scale, ranging from *Strongly disagree* to *Strongly agree* with a possible score of 0 to 1. An exploratory factor analysis in our study supported a four-factor solution. However, an intended Sensation Seeking item, “I am interested in experiences for its own sake even if it is illegal” loaded on the Impulsivity factor. This item was thus moved to the Impulsivity subscale. Cronbach’s alphas of the subscales among boys and girls, respectively were 0.68 and 0.66 for Anxiety Sensitivity, 0.85 and 0.86 for Hopelessness, 0.60 and 0.60 for Sensation Seeking, and 0.69 and 0.73 for Impulsivity.

## Analysis

We performed cross-tabulation analyses with chi-square tests or Fisher’s Exact Tests to compare sexually exploited youth and non-exploited youth on the prevalence of substance use in their lifetime and in the past year. To identify factors that differentiated exploited youth and non-exploited youth, we conducted logistic regression analyses. The multivariate regression models included variables that were significantly associated with exchanging sex in bivariate logistic regression analyses. All analyses were conducted separately by gender.

Missing response rates for each item or scale were less than 5%. Respondents with missing values were excluded from each analysis on an analysis-by-analysis basis.

## Results

### Sample characteristics

Among youth who have ever used alcohol, marijuana, or other drugs, 2.2% of boys and 3.2% of girls reported that they had ever exchanged sex for substances. The prevalence did not significantly differ by gender ( $p = 0.111$ ). There was no significant difference in the mean age between sexually exploited youth and their non-exploited peers (Table 1). The majority of the students were living with their family members, regardless of their histories of trading sex.

### Comparisons in the prevalence of substance use

Table 2 summarizes the prevalence of substance use between those who had ever traded sex for drugs and those who had not. All exploited students and almost all non-exploited students had ever had alcohol in their lifetime. No difference was found in the percentage of past-year alcohol use for either boys or girls. However, exploited boys and girls had higher proportions of weekly binge drinking.

Sexually exploited youth were more likely than non-exploited youth to have ever used marijuana and other illicit drugs in their lifetime and in the past year (Table 2). For example, 77% of exploited girls reported past-year marijuana use, compared to 43% of non-exploited girls. A higher proportion of exploited boys than non-exploited boys had used one or more drugs other than marijuana in the past year (68% vs. 23%).

All of the sexually exploited students and the overwhelming majority of the non-exploited students (92% of boys and 95% of girls) reported that they had used alcohol, marijuana, or other drugs in the past year. Most common patterns of past-year substance use were drinking alcohol only (no marijuana or other drug use) for non-exploited youth (43% of boys and

47% of girls) and using alcohol, marijuana, and one or more other drugs for exploited youth (52% of boys and 67% of girls).

**Factors associated with sexual exchange for boys**—Among boys, compared to those who used alcohol only or did not use alcohol or drugs in the past year, students who used drugs other than marijuana in the past year were more likely to have ever exchanged sex for alcohol or drugs (Table 3). Boys who did not live with family (i.e., living with friends, on their own, homeless, or couch surfing) were also more likely to report exchanging sex for alcohol or drugs. Boys with a higher level of hopelessness and boys with a higher level of impulsivity were more likely to be sexually exploited. Among the social connectedness variables, only family connectedness was associated with lower odds of exchanging sex. There was no significant relationship between any of the social involvement variables and sexual exchange for boys.

In the multivariate logistic regression model for boys, past-year use of drugs other than marijuana and not living with family were significantly linked to higher odds of exchanging sex. The odds of trading sex were 105 times greater for boys with the highest level of impulsivity than for boys with the lowest level of impulsivity. Family connectedness or hopelessness no longer had a significant independent relation to exchanging sex for drugs (Table 5).

**Factors associated with sexual exchange for girls**—As was the case with boys, girls who had used other drugs in the past year, those who had a higher level of hopelessness or a higher level of impulsivity were more likely to report a history of exchanging sex for alcohol or drugs (Table 4). Living situation was not a significant factor for girls. Girls who felt strongly connected to their family or reported a higher level of involvement in sports had lower odds of exchanging sex for drugs.

Table 5 presents the results of multivariate logistic regression analysis for girls. Girls who had used drugs other than marijuana in the past year were more likely to be sexually exploited. Compared to those with the lowest level of impulsivity, girls with the highest level of impulsivity had 25 times the odds of exchanging sex for substances. In the multivariate analyses for girls, neither family connectedness, involvement in sports, involvement with clubs, nor hopelessness was independently associated with the exchange of sex.

## Discussion

In a sample of adolescents in rural schools who reported ever using alcohol or other substances, between 2% and 3% had ever exchanged sex for alcohol or drugs. This rate is comparable to those reported previously (Edwards et al., 2006; Lavoie et al., 2010; Pedersen & Hegna, 2003; Svedin & Priebe, 2007). However, the survey asked about sexual exchange specifically to obtain alcohol or drugs, not for other purposes such as money. For this reason, our study sample was restricted to students who had ever used alcohol, marijuana, or other drugs. The prevalence of trading sex may have been higher if students had been asked whether or not they had ever exchanged sexual activities for money, shelter, food, or other goods. In addition, unlike the earlier studies, similar proportions of boys and girls reported

having ever traded sex. Our results might not be consistent with gendered beliefs about sexual exchange, i.e., where more boys engage in risky behaviours, or more girls are sexually exploited. We should recognize that the issue of sexual exploitation in the context of sexual exchange is not gender-specific.

Demographic characteristics of adolescents in this study who reported the exchange of sex may not match the stereotypical idea of sexually exploited youth. These youth were in school and most were living with their family members. Trading sex among youth in school appears to be much less common than among homeless or street-involved youth; however, a small proportion of students, even in regular schools in rural areas, appear to have been involved in sexual exchange that would be defined as sexual exploitation under BC law. These findings suggest the need for health education about sexual exploitation in middle schools and high schools.

Lifetime use of alcohol or alcohol use in the past year did not differentiate between sexually exploited youth and non-exploited youth, because the vast majority of the sample reported having done so. However, exploited boys and girls had higher rates of weekly binge drinking than their non-exploited peers. Similar results have been reported in other studies (Edwards et al., 2006; Kaestle, 2012; Svedin & Priebe, 2007). A Norwegian study identified alcohol-related problems (e.g., psychosocial problems, black-out reactions, dependence) as a strong factor associated with sexual exchange (Pedersen & Hegna, 2003). Alcohol-related problems are predicted by binge drinking and daily alcohol use (Poulin & Elliott, 2007; Read, Beattie, Chamberlain, & Merrill, 2008). Given that lifetime alcohol use, including experimental use, among adolescents is relatively common (Elgar, Phillips, & Hammond, 2011; Nicholson, 2009; Smith et al., 2009), regular or heavy alcohol consumption may better differentiate between exploited students and non-exploited students.

The use of illicit drugs other than marijuana appears to be strongly associated with exchanging sex for substances. Marijuana was the most widely used drug, with about 70% of exploited youth and nearly half of non-exploited youth indicating past-year use. On the other hand, the exploited group had a much higher proportion of past-year use than the non-exploited group. This disparity was also found in different past-year substance use patterns between the two groups. Most of the exploited youth in this study had used other drugs in addition to alcohol and marijuana. These poly-substance users may have a higher rate of substance dependence than those who use alcohol only, and may also be more desperate to obtain drugs. Illicit drugs other than marijuana are generally less available than alcohol or marijuana (Johnston, O'Malley, Bachman, & Schulenberg, 2012); thus, trading sex may be a means of accessing drugs for adolescents in school.

Hopelessness and impulsivity were two significant personality factors for the exchange of sex in bivariate models. Hopelessness is strongly correlated with depressive symptoms (Conrod et al., 2000; Woicik et al., 2009) and depression has been associated with sexual exchange (Edwards et al., 2006; Kaestle, 2012; Pedersen & Hegna, 2003). However, when other variables such as substance use were controlled for, hopelessness or depression was no longer a significant factor in this study and others (Kaestle; Pedersen & Hegna). This may be because of the mediating effect of substance use. Individuals with a higher level of



hopelessness (or depression) are assumed to use substances to reduce depressive symptoms (Woicik et al., 2009). That is, hopelessness increases the risk of substance abuse for self-medication of depressive symptoms, which in turn, may lead to using sexual activities in exchange for alcohol or drugs.

In contrast, impulsivity was still a significant risk factor when substance use in the past year was taken into account. Impulsivity measured by the SURPS specifically represents one's lack of ability to inhibit behaviour in the presence of immediate rewards (Conrod et al., 2000; Woicik et al., 2009). Highly impulsive people may engage in behaviours that can cause long-term negative consequences due to their inability to assess potential risks (Woicik et al.). This inability for planning risk differentiates impulsive people and sensation seekers (Woicik et al.). Thus, substance-using adolescents may be involved in the exchange of sex for immediate rewards such as alcohol or drugs, and sexual pleasure, rather than for sensation seeking, without thinking about potential negative consequences.

We did not find significant associations between exchanging sex and any factors of social connectedness or social involvement after adjusting for risk factors. Similar findings have been obtained by studies in the U.S. (Kaestle, 2012) and Quebec City (Lavoie et al., 2010). However, it may be too soon to draw a conclusion about the lack of protective factors from social relationships and activities. The social factors were measured by only one item each in this and the U.S. studies. These single-item measures may lack sufficient capability to assess complex or multidimensional constructs. Moreover, among school connectedness variables in the U.S. study, only one item, feeling happy at school, was uniquely associated with selling sex for compensation, whereas others (feeling safe at school, feeling part of school, or feeling school is fair) were not (Kaestle). Some dimensions of school connectedness may be protective while others may not. The Quebec study used a 4-item measure of perceived social support from family, friends, and others who one trusts. Support from different resources may play a different role in adolescents' involvement in trading sex. For example, support from friends may not prevent youth from sexual exchange when their friends engage in risky behaviours, as implied by earlier studies (Pedersen & Hegna, 2003; Tyler, 2009). On the other hand, family and school support is generally associated with positive outcomes (Parcel, Dufur, & Zito, 2010). Likewise, youth participation in extracurricular activities may or may not be protective, depending on characteristics of peers with whom they interact (Farb & Matjasko, 2012). The exploration of factors that reduce the odds of exchanging sex is still limited. We need further studies using more robust measures.

## Strengths and limitations of the study

There were several limitations in this study. First, the findings were based on self-report data; thus, some students may have underreported sensitive experiences such as trading sex and substance use. Compared to other questions, the missing response rate for the question on trading sex was higher. Some students may have hesitated to answer or may have been unsure about what was asked (e.g., the definition of "sexual activities"). Therefore, the estimated prevalence may be an underestimation of this activity. Second, the cross-sectional nature of the East Kootenay Adolescent Drug Use Survey did not allow us to make causal or temporal inferences between trading sex and various risk and protective factors. Third, the

survey asked about exchanging sex, specifically for substances, not for other types of consideration, such as money, food, or shelter. In addition, the survey did not ask with whom a respondent exchanged sex for alcohol or drugs. Such exchanges may be between peers. In fact, the majority of exploited students in Quebec City reported that partners were under the age of 19 (Lavoie et al., 2010). Fourth, coefficient alphas of the SURPS subscales, except Hopelessness, were below 0.80, a level that is typically interpreted as good consistency. Lower alpha values ( $< 0.80$ ) for some subscales were also reported in another study of high school students in Canada (Woicik et al., 2009). However, such lower values may be due in part to the small number of items in each subscale. Fifth, as noted above, social connectedness and social involvement were measured by a single item each, thereby limiting the ability to assess levels of complex constructs. Finally, due to secondary analysis of existing data, for the multivariate models we were limited to the variables available in the original survey. The East Kootenay Adolescent Drug Use Survey particularly focuses on adolescent substance use and did not ask about other risky behaviours or family socioeconomic status, which might be related to trading sex. Sexual abuse and other victimization experiences, which have been identified as key risk factors, were not included in our models because the 2009 survey did not ask those questions.

A strength of the current study is the use of census data collected from adolescents in school. In particular, our study added information on the exchange of sex among Canadian students in a large rural area. A novel finding of this study is that some personality characteristics may increase the risk of involvement in sexual exchange. Research studies on this topic have frequently examined behavioural (e.g., substance use), contextual (e.g., family environments), or mental health (e.g., depression) risk factors; but, to our knowledge, none have included personality factors.

### Conclusions and implications

In this secondary analysis using a census of student substance use, we found that a minority of substance-using adolescents in rural schools had ever exchanged sexual activities for alcohol or drugs, which is considered sexual exploitation. Most of those exploited youth were living with their family members. Students with a history of sexual exchange were more likely than their peers with no such history to use drugs other than marijuana and to have an impulsive personality trait.

Future research needs to explore factors that may decrease the likelihood of involvement in sexual exchange. In addition to risk-reduction approaches, strength-focused programs have successfully reduced substance use and risky sexual behaviours among at-risk adolescents (e.g., Saewyc & Edinburg, 2010). We should continue our efforts to prevent and reduce adolescent substance use and abuse. To reduce the likelihood that youth will trade sex for alcohol or drugs, it is particularly important to prevent the use of illicit drugs. Additionally, prevention efforts need to be monitored and evaluated by periodic surveys like the East Kootenay Adolescent Drug Use Survey. Besides substance use prevention interventions, in-school education about healthy relationships and sexual exploitation could help reduce the risk of involvement in sexual exchange. Skill-based programs may also help adolescents who are impulsive to control their impulsivity that can lead to sexual exploitation. In clinical

settings, healthcare practitioners should assess for sexual exploitation among youth who disclose substance use.

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**Table 1**

Sample Characteristics

	Male		Female		
	Exploited	Non-exploited	Exploited	Non-exploited	
N	25	1,129	39	1,167	
Mean age (SD), years	15.5 (1.8)	15.3 (1.6)	15.5 (1.5)	15.2 (1.6)	$p = 0.257$
Living with family, %	83.3	98.1	92.3	97.5	$p = 0.083$

*Note.* Data source: East Kootenay Adolescent Drug Use Survey of 2009. Exploited = Students who had ever exchanged sex for alcohol or drugs. Non-exploited = Students who had never exchanged sex for alcohol or drugs.

<sup>a</sup>The number of respondents varied due to missing data for the different items.

Table 2

Prevalence of Substance Use by a History of Exchanging Sex for Alcohol or Drugs

	Lifetime (%)				Past year (%)			
	Non-exploited	Exploited	<i>p</i>		Non-exploited	Exploited	<i>p</i>	
Boys (N <sup>a</sup> )	(1,129)	(25)		(1,129)	(25)		(25)	
Alcohol	99.0	100.0	ns	89.9	84.0	ns		
Weekly binge drinking <sup>b</sup>	18.1	57.1	< 0.001 <sup>c</sup>	...	...	...		
Marijuana	52.0	84.0	0.002	45.1	68.0	0.023		
Drugs other than marijuana	28.3	72.0	< 0.001	23.1	68.0	< 0.001		
Girls (N <sup>a</sup> )	(1,167)	(39)		(1,167)	(39)		(39)	
Alcohol	99.5	100.0	1.000	93.9	100.0	ns		
Weekly binge drinking <sup>b</sup>	15.2	39.5	< 0.001	...	...	...		
Marijuana	47.4	82.1	< 0.001	42.7	76.9	< 0.001		
Drugs other than marijuana	28.1	82.1	< 0.001	22.5	74.4	< 0.001		

Note. Data source: East Kootenay Adolescent Drug Use Survey of 2009. ns = non-significance (*p* > 0.05).

<sup>a</sup>The number of respondents varied due to missing data for the different items.

<sup>b</sup>Having 5 or more drinks on one occasion on one or more days a week

<sup>c</sup>Fisher's Exact Tests were used for group comparisons when at least 1 cell (25.0%) have expected count less than 5. If not indicated otherwise, Chi-square tests were used.

Table 3

## Bivariate Analyses of Potential Factors for Exchanging Sex Among Boys

(N <sup>a</sup> )	Non-exploited (1,129)	Exploited (25)	OR	95% CI	P
<b>Substance use patterns, past year</b>					
Alcohol only or no past-year use (%)	51.1	16.0	Ref		
Marijuana with or without alcohol (no other drug use) (%)	25.7	16.0	1.99	[0.49, 8.00]	ns
Other drugs with or without alcohol and/or marijuana (%)	23.2	68.0	9.38	[3.13, 28.16]	<0.001
<b>Living situation</b>					
Living with family (%)	98.1	83.3	Ref		
Living with friends, on their own, or homeless/couch surfing (%)	1.9	16.7	10.42	[3.28, 33.14]	<0.001
<b>Substance use risk profile</b>					
Anxiety Sensitivity <sup>b</sup> (mean)	0.36	0.33	0.29	[0.03, 3.13]	ns
Hopelessness <sup>b</sup> (mean)	0.28	0.39	16.52	[2.47, 110.60]	0.004
Sensation Seeking <sup>b</sup> (mean)	0.67	0.68	1.48	[0.14, 15.77]	ns
Impulsivity <sup>b</sup> (mean)	0.47	0.63	342.52	[25.54, 4593.20]	<0.001
<b>Social connectedness</b>					
Family connectedness <sup>b</sup> (mean)	0.83	0.71	0.15	[0.04, 0.64]	0.010
Friend connectedness <sup>ab</sup> (mean)	0.86	0.92	5.80	[0.46, 72.49]	ns
School connectedness (mean)	0.53	0.46	0.46	[0.12, 1.77]	ns
<b>Social involvement</b>					
Involvement in sports <sup>b</sup> (mean)	0.75	0.68	0.53	[0.16, 1.70]	ns
Involvement with clubs <sup>b</sup> (mean)	0.27	0.29	1.17	[0.35, 3.89]	ns
Involvement with community groups/church <sup>b</sup> (mean)	0.19	0.25	1.87	[0.53, 6.53]	ns

Note. Data source: East Kootenay Adolescent Drug Use Survey of 2009. OR = odds ratio. CI = confidence interval. Ref = reference group. ns = non-significance ( $p > 0.05$ ).

<sup>a</sup>The number of respondents varied due to missing data for the different items.

<sup>b</sup>Possible score range of 0 – 1

Table 4

## Bivariate Analyses of Potential Factors for Exchanging Sex Among Girls

(N <sup>a</sup> )	Non-exploited (1,167)	Exploited (39)	OR	95% CI	P
<b>Substance use patterns, past year</b>					
Alcohol only or no past-year use (%)	52.2	15.4	Ref		
Marijuana with or without alcohol (no other drug use) (%)	25.3	10.3	1.37	[0.38, 4.91]	ns
Other drugs with or without alcohol and/or marijuana	22.4	74.4	11.26	[4.62, 27.44]	< 0.001
<b>Living situation</b>					
Living with family (%)	97.5	92.3	Ref		
Living with friends, on their own, or homeless/couch surfing (%)	2.5	7.7	3.24	[0.94, 11.14]	ns
<b>Substance use risk profile</b>					
Anxiety Sensitivity <sup>b</sup> (mean)	0.46	0.45	0.60	[0.10, 3.67]	ns
Hopelessness <sup>b</sup> (mean)	0.29	0.38	12.90	[2.73, 60.89]	0.001
Sensation Seeking <sup>b</sup> (mean)	0.60	0.65	3.95	[0.64, 24.41]	ns
Impulsivity <sup>b</sup> (mean)	0.46	0.61	228.20	[32.50, 1602.44]	< 0.001
<b>Social connectedness</b>					
Family connectedness <sup>b</sup> (mean)	0.79	0.60	0.13	[0.05, 0.35]	< 0.001
Friend connectedness <sup>ab</sup> (mean)	0.90	0.84	0.27	[0.07, 1.07]	ns
School connectedness (mean)	0.55	0.48	0.44	[0.15, 1.32]	ns
<b>Social involvement</b>					
Involvement in sports <sup>b</sup> (mean)	0.61	0.49	0.40	[0.17, 0.93]	0.033
Involvement with clubs <sup>b</sup> (mean)	0.35	0.21	0.27	[0.09, 0.80]	0.018
Involvement with community groups/church <sup>b</sup> (mean)	0.26	0.24	0.76	[0.27, 2.14]	ns

Note. Data source: East Kootenay Adolescent Drug Use Survey of 2009. OR = odds ratio. CI = confidence interval. Ref = reference group. ns = non-significance ( $p > 0.05$ ).

<sup>a</sup>The number of respondents varied due to missing data for the different items.

<sup>b</sup>Possible score range of 0 – 1



**Table 5**

## Multivariate Analyses of Potential Factors for Exchanging Sex

	AOR	95% CI	<i>p</i>
<b>Boys</b>			
Substance use patterns, past year			
Alcohol only or no past-year use	Ref		
Marijuana with or without alcohol (no other drug use)	2.53	0.41, 15.44	ns
Other drugs with or without alcohol and/or marijuana	8.50	1.83, 39.49	0.006
Living situation			
Living with family	Ref		
Living with friends, on their own, or homeless/couch surfing	6.14	1.46, 25.78	0.013
Hopelessness <sup>a</sup>	3.17	0.25, 40.38	ns
Impulsivity <sup>a</sup>	105.13	5.04, 2194.01	0.003
Family connectedness <sup>a</sup>	1.38	0.20, 9.59	ns
<b>Girls</b>			
Substance use patterns, past year			
Alcohol only or no past-year use	Ref		
Marijuana with or without alcohol (no other drug use)	1.07	0.30, 3.89	ns
Other drugs with or without alcohol and/or marijuana	5.33	2.02, 14.07	0.001
Hopelessness <sup>a</sup>	0.87	0.11, 6.64	ns
Impulsivity <sup>a</sup>	24.94	2.88, 215.71	0.003
Family connectedness <sup>a</sup>	0.39	0.11, 1.38	ns
Involvement in sports <sup>a</sup>	0.94	0.34, 2.58	ns
Involvement with clubs <sup>a</sup>	0.65	0.20, 2.14	ns

Note. Data source: East Kootenay Adolescent Drug Use Survey of 2009. AOR = adjusted odds ratio. CI = confidence interval. Ref = reference group. ns = non-significance ( $p > 0.05$ ).

<sup>a</sup>Possible score range of 0 – 1