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Exchange Sex Among High School Students—Washington, DC, 2017

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Abstract

Purpose: Exchange sex, the exchange of money or nonmonetary items for sex, is associated with sexually transmitted diseases and HIV. We sought to identify prevalence and characteristics associated with exchange sex among District of Columbia (DC) high school students.

Methods: We used the 2017 DC Youth Risk Behavior Survey, a cross-sectional survey of students in grades 9–12 ($n = 8,578$). We performed multivariable logistic regression to examine associations between exchange sex and demographic, home environment, and substance use measures.

Results: In 2017, a total of 7.4% (95% confidence interval [CI]: 6.6–8.2) of students reported ever having engaged in exchange sex. Odds of exchange sex were higher among males (adjusted odds ratio [AOR]: 2.5; 95% CI: 1.6–4.0) and students who had sexual contact with partners of both sexes (AOR: 2.4; 95% CI: 1.2–4.9), compared with students having sexual contact with partners of opposite sex only. Exchange sex was also associated with having been kicked out, run away, or abandoned during the past 30 days (AOR: 10.7; 95% CI: 7.0–16.3); going hungry during the past 30 days (AOR: 2.2; 95% CI: 1.1–4.5); and ever using synthetic marijuana (AOR: 2.6; 95% CI: 1.3–5.0) or cocaine, heroin, methamphetamines, or ecstasy (AOR: 2.9; 95% CI: 1.6–5.3), compared with those who had not.

Conclusions: Approximately one in 14 DC high school students engaged in exchange sex. Programs providing services to youth with unstable housing, food insecurity, or who use drugs should incorporate sexual health services to address exchange sex practices.

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Keywords

Exchange sex; Youth; HIV; Sexually transmitted diseases; Risk behavior

In the United States, a disproportionate number of HIV infections and sexually transmitted diseases (STDs) occur among youth. Annually, youth aged from 13 to 24 years account for one in five new HIV infections [1] and youth aged from 15 to 24 years account for half of all STD diagnoses [2]. HIV and STDs are increasing among specific groups of youth, such as young women, youth of color, and young men who have sex with men [1,3]. Multiple behavioral factors increase youths' risk of acquiring HIV and STDs. One such behavioral risk factor is exchange sex, which is the exchange of money or nonmonetary items for sex [4-6]. However, limited information is available about this behavior among youth, because the majority of exchange sex research in the United States has focused on adult populations [7-9].

Among the studies that have focused on youth in the United States, nearly all rely on convenience samples of populations at high risk [10-13]. In these studies, set primarily in a limited number of large urban areas, prevalence of exchange sex ranged from 1% among youth who are newly experiencing homelessness [13] to 67% among young women who are transgender [12]. The only studies that have examined exchange sex in a nationally representative sample of youth used data from the National Longitudinal Study of Adolescent Health (Add Health), a school-based study that began data collection in 1994–1995 and revisited respondents at varying intervals or “waves” over time [14]. The prevalence of exchange sex ranged from 1% at wave 1 when respondents were in grades 7–12 [15] to 4.9% based on aggregated data from waves 2 (one year after wave 1) and 3 (five to six years after wave 1) [16]. Only two Add Health studies examined factors associated with ever having engaged in exchange sex using multivariate analyses. From the first study, researchers reported that respondents who reported a history of child abuse or ever running away at wave 1 were more likely to report ever having engaged in exchange sex at wave 3 and that high school connectedness at wave 1 was protective of ever having engaged in exchange sex at wave 3 [17]. Researchers from a second study of wave 1 data reported that a history of physical violence, alcohol use, and drug use was associated with ever having engaged in exchange sex [15].

In the District of Columbia (DC), the Department of Health has prioritized reducing HIV and STDs among youth [18]. Youth in DC are disproportionately represented among new HIV and STD diagnoses, and STD incidence has increased among youth aged from 15 to 29 years during 2014–2017 [19]. Researchers from previous studies have documented that DC youth are more likely to engage in behaviors that place them at risk for HIV and STDs, compared with their counterparts nationally, including early initiation of sex and having multiple sex partners [20]. However, prevalence of exchange sex among DC youth is unknown.

In 2017, DC added a question about exchange sex to their Youth Risk Behavior Survey (YRBS) questionnaire. We completed an exploratory analysis of 2017 DC YRBS data to describe prevalence of exchange sex and to identify associations of exchange sex with select

demographic and home environment characteristics and substance use behaviors. This is the first study to quantify the burden of exchange sex among DC youth.

Methods

Data and sample

The 2017 DC YRBS is a cross-sectional survey conducted biennially in public and public charter high schools in Washington, DC, by the Office of the State Superintendent of Education. The 2017 DC YRBS used a 2-stage, cluster sample design. The first sampling stage included a census of all DC public and public charter high schools (grades 9–12). In the second sampling stage, a census was taken of students in participating schools during either a specific class period (e.g., second period) or required subject (e.g., English) so that all students had only one chance of being selected. All students in these classes were eligible to participate. Survey participation was anonymous and voluntary; passive parental permission was obtained. The paper-and-pencil survey was completed by 8,578 students throughout participating high schools in DC.

The school response rate was 92%, student response rate was 67%, and overall response rate was 61%. Survey weights were applied to adjust for student nonresponse and the distribution of students by self-reported grade, sex, and race/ethnicity. The design and methods are described further in the DC 2017 YRBS report [21]. We conducted a secondary data analysis used existing, de-identified data. The Centers for Disease Control and Prevention (CDC) Human Research Protection Office determined the study did not require review by an Institutional Review Board.

Measures

Ever having engaged in exchange sex was assessed with the question, “Have you ever been given money, a place to stay, food, or something else of value in exchange for sex?” Response options were yes or no. Demographic characteristics included sex (male or female), race/ethnicity (white, black, Hispanic, and other or multiple race), and grade (ninth, 10th, 11th, and 12th). We also created a variable assessing sex of sexual contacts based on responses from the questions “What is your sex?” (response options: female or male) and “During your life, with whom have you had sexual contact?” (response options: I have never had sexual contact, females, males, females and males). Based on the sex of the student, sex of sexual contacts was categorized as contact with opposite-sex partners only, same-sex partners only, and both sex partners.

Two questions assessed students' home environment. First, “During the past 30 days, did you ever sleep away from your parents or guardians because you were kicked out, ran away, or were abandoned?”; response options were yes or no. Second, “During the past 30 days, how often did you go hungry because there was not enough food in your home?” Response options were combined into two categories never/rarely/sometimes and most of the time/always.

Multiple questions were used to assess whether students ever had engaged in substance use. Although the question format and response options varied, all substance use variables were

dichotomized to never and at least once. The full list of questions and their original response options are presented in Table 1.

Statistical analyses

We calculated weighted prevalence estimates for ever having engaged in exchange sex among all students and by demographic, home environment, and substance use categories. We used logistic regression to calculate unadjusted odds ratios (ORs) and 95% confidence intervals [CIs] to determine associations between ever having engaged in exchange sex and each of the independent variables. We then constructed a multivariate logistic regression model to estimate the adjusted associations between the independent variables and ever having engaged in exchange sex, adjusting for demographics and all independent variables simultaneously. Statistical significance was assessed using the 95% confidence interval of the odds ratio estimate; intervals excluding the value of 1 were deemed statistically significant. In preliminary analyses, we tested for, but found no consistent evidence of, multicollinearity or of effect modification by sex, race/ethnicity, or grade. After case-wise deletion, the analytic sample included 5,022 students with valid responses to all variables included in the model. Approximately 22% of students were excluded from the analytic sample due to a missing value for the exchange sex variable. Students excluded from the analytic sample did not differ from students by grade but were slightly more likely to be male, of nonwhite race, and sexually active. All analyses were performed using SAS software v9.4 (SAS Institute Inc., Cary, NC, USA) and the proc survey family of commands to account for the complex sampling design of the DC YRBS.

Results

Students' characteristics are presented in Table 2. Approximately half of students were female (50.3%; 95% CI: 48.9–51.8). The majority of students were black, non-Hispanic (72.3%; 95% CI: 71.0–73.6), followed by Hispanic (17.5%; 95% CI: 16.4–18.7), other, non-Hispanic (5.7%; 95% CI: 5.3–6.1), and white, non-Hispanic (4.5%; 95% CI: 4.0–4.9). Similar to the distribution observed across high schools in DC, there were fewer students in higher grades than lower grades: 20.0% in 12th grade (95% CI: 17.1–22.9), 22.8% in 11th grade (95% CI: 20.1–25.4), 25.8% in 10th grade (95% CI: 22.8–28.7), and 31.5% in ninth grade (95% CI: 28.0–34.9). Approximately half (45.8%; 95% CI: 44.1–47.4) of students had sexual contacts of the opposite sex only; 41.0% (95% CI: 39.4–42.6) never had engaged in sexual contact. Similar percentages of students had sexual contacts of both sexes (7.1%; 95% CI: 6.3–7.8) and of the same sex only (6.2%; 95% CI: 5.5–6.8). Overall, 7.4% (95% CI: 6.6–8.2) or approximately one in 14 DC high school students ever had engaged in exchange sex (Table 2).

For the measures of home environment, 11.3% (95% CI: 10.3–12.2) of students had been kicked out, ran away, or been abandoned; 5.1% (95% CI: 4.4–5.7) reported they had gone hungry. For the substance use measures, 11.1% (95% CI: 10.1–12.1) of students had used illicit drugs, and 7.0% (95% CI: 6.3–7.8) had used synthetic marijuana. Approximately half of students (49.4%; 95% CI: 47.9–50.9) reported having used marijuana, 21.8% (95% CI:

20.8–22.9) cigarettes, 29.3% (95% CI: 28.1–30.6) electronic cigarettes, and 49.6% (95% CI: 48.1–51.1) consumed alcohol at least once (Table 2).

The unadjusted and adjusted ORs on factors associated with exchange sex are presented in Table 3. There were significant associations with ever having engaged in exchange sex and each of the demographic, home environment, and substance use covariates except for certain grades (10th and 11th); associations for several factors remained significant in the multivariate model. The odds of ever having engaged in exchange sex were higher among male than female students (adjusted OR [AOR]: 2.5; 95% CI: 1.6–4.0) and among students who had sexual contacts of both sexes (AOR: 2.4; 95% CI: 1.2–4.9) than students who had sexual contacts of the opposite sex only. The odds of ever having engaged in exchange sex were also higher among students who had been kicked out, run away, or been abandoned (AOR: 10.7; 95% CI: 7.0–16.3), gone hungry (AOR: 2.2; 95% CI: 1.1–4.5), ever used synthetic marijuana (AOR: 2.6; 95% CI: 1.3–5.0), and ever used illicit drugs (AOR: 2.9; 95% CI: 1.6–5.3), compared with those who had not.

Discussion

This is the first study to quantify the burden of exchange sex among youth in DC and among the first to examine associations of demographic, home environment, and substance use with exchange sex using multivariate analysis among a general population of youth. We found 7.4% or approximately one in 14 DC high school students ever had engaged in exchange sex. This estimate is higher than previous estimates among youth nationally (range: 1% [15] to 4.9% [16]) and consistent with previously reported CDC surveillance data where higher percentages of DC youth engage in sexual risk behaviors, compared with their national counterparts [20]. The prevalence of exchange sex is concerning because it is a known risk factor for HIV and STDs [4-6] and youth represent a disproportionate and growing number of HIV and STD diagnoses in DC [19]. We also found ever having engaged in exchange sex was associated with a number of demographic and home environment characteristics and substance use behaviors.

Among the demographic characteristics examined, the odds of ever having engaged in exchange sex were higher among male, compared with female students. Similarly, analyses of the nationally representative Add Health data also found males were at higher risk [15-17,22] as did a study of youth aged 12–24 years recruited from 14 low-income, urban neighborhoods throughout the United States [23]. Our finding adds to a growing body of literature that challenges the historic framing of males as buyers and females as sellers of sex. Recent research cites the failure to recognize males as sellers as an impediment to the development and delivery of effective HIV and STD services, interventions, and surveillance to this population [24]. There is limited information available about male youth who ever have engaged in exchange sex. Researchers have reported that adult men engaging in exchange sex have higher rates of HIV than those reported among other at-risk populations including females who exchange sex, men who have sex with men, having large sexual networks, and unprotected anal intercourse [24]. Taken together, we believe male youth who ever have engaged in exchange sex might be especially vulnerable to HIV and STDs.

We also found an association between having had sexual contact with partners of both sexes and ever having engaged in exchange sex. Having had sexual contact with same-sex partners only was not associated with exchange sex after full statistical adjustment. Research that combines youth of different sexual identity (e.g. bisexual, gay) or behaviors (e.g. sexual contact with same or both sexes) shows that sexual minority youth are at greater risk for a number of negative health outcomes and behaviors [25]. However, there is less research that examines health risks for specific groups of sexual minorities and how these risks might be unique. Our finding contributes to the understanding of the different risks sexual minority populations might face and is in line with recent evidence that bisexual youth have unique health needs, compared with those of youth who identify as gay, lesbian, or heterosexual [26].

For measures of home environment, odds of ever having engaged in exchange sex were approximately 11 times higher for students who had been kicked out, run away, or been abandoned. A second measure, being hungry because of lack of food at home was also associated with ever having engaged in exchange sex. These results indicate students might engage in exchange sex for shelter or food. Although causal relationships cannot be determined by our cross-sectional study, these findings are consistent with other research. Youth who have runaway, been abandoned, or homeless in the United States and elsewhere have reported engaging in exchange sex for the purposes of obtaining shelter or food [10,11,27]. Studies demonstrating a link between hunger and engagement in exchange sex among youth in the United States are few. As part of qualitative study of youth who were food insecure in 10 urban U.S. sites, youth reported engaging in exchange sex as a means to meet subsistence needs [28]. Food insecurity has been reported to be a driver and a risk factor for engaging in exchange sex among adult women in low-income countries [29], people living with HIV/AIDS [30], and sexual minorities [27].

Unstable housing and food insecurity reflect structural and social influences on health. Researchers report that youth in impoverished communities, facing these economic challenges, are more vulnerable to sexual harassment and victimization, which could include exchange sex [31]. Housing is a concern in Washington, DC. In 2016, DC had the highest per capita rate of homelessness in the United States, and there has been a reported 34% increase since 2009 [32]. During the 2017–18 school year, 2,595 public school students were homeless [33]. Apart from housing, having been kicked out, run away, or been abandoned can reflect poor student-parent or family relationships. Family structure, cohesion, and parental monitoring and engagement positively affect adolescent sexual health. Youth who lack these protective factors are more likely to engage in sexual risk behaviors [34].

Finally, among the substance use behaviors considered, we found students who used illicit drugs and synthetic marijuana were more likely to ever have engaged in exchange sex. We did not find any association with use of marijuana, cigarettes, electronic vapor products, or alcohol. Substance use and sexual risk behaviors often cluster together [35] and contributing factors for each, including family conflict or abuse have also been linked to unstable housing [36]. Researchers from two of the Add Health studies found bivariate associations with marijuana and with cocaine and exchange sex [16,22]. Similar associations of substance use and exchange sex have also been found among adult populations; marijuana, cocaine, and

heroin use was associated with exchange sex among women living below the median household income in Northern California [37], as was recent marijuana and injection drug use among women in the southern United States [9]. There is no research specifically linking exchange sex with synthetic marijuana use as our study found; however, this could be attributable to the relative recency with which this substance has become popular and accessible. Synthetic marijuana use is associated with other health risk behaviors among youth, including sexual risks [38].

Limitations

This study has at least three limitations. Inferences cannot be made about the temporal or causal nature of the findings because the DC YRBS is a cross-sectional survey and we included both lifetime and past 30-day behaviors in our model. Data were collected through self-report, which can be subject to nonresponse as well as social desirability and recall bias. Approximately 40% of students were excluded from the regression model via case-wise deletion due to missing data. The unadjusted ORs were similar to the adjusted ORs estimated in the regression model. Since the strength of adjusted associations was attenuated compared to unadjusted, the high percentage of missing might have resulted in underestimate of associations. The DC YRBS uses the standardized sampling, questionnaires, and administration procedures established and tested by the CDC's Youth Risk Behavior Surveillance System which help avoid potential social and recall bias [39], and a reliability study conducted on Youth Risk Behavior Surveillance System questionnaires indicate students generally report consistent health behavior information in the survey [40]. Data are not available on the context or dynamics of the exchange sex interaction. Finally, the DC YRBS represents students in grades 9–12 in public and public charter schools. Although the representative nature of the study sample is a strength and a contribution to the extant literature examining exchange sex among youth in the United States, the sample is not fully representative of youth in DC. Students attending private or home schools and youth not attending school are not represented; students who are chronically absent might also be underrepresented.

Conclusion

Exchange sex occurs among 1 in 14 DC high school students and should be considered among the sexual risk behaviors targeted by HIV and STD prevention and sexual health promotion programs delivered to students. HIV and STD surveillance and case investigations in DC should consider collecting data on experience of exchange sex to more fully understand the role this behavior plays in transmission within the District. Male students and students who have sexual contact with partners of both sexes are at increased risk for ever having engaged in exchange sex and can be especially vulnerable to HIV and STDs. HIV and STD prevention and sexual health promotion efforts should be comprehensive to address the diverse health needs male youth and youth who engage in bisexual behavior might face. Unstable housing, food insecurity, and use of some types of substances were also associated with ever having engaged in exchange sex; services provided to students facing these challenges should incorporate HIV and STD testing and sexual health promotion. Across all characteristics and behaviors assessed in our analyses,

unstable housing had the strongest association with ever having engaged in exchange sex. Even after adjusting for other factors, having been kicked out, runaway, or abandoned was associated with a 10-fold increase in the likelihood of ever having engaged in exchange sex. Intervention to ensure youth are stably housed and not hungry might have substantial impact in preventing negative health outcomes given that access to housing and food is associated with numerous factors that protect against different risky behaviors. To further inform public health interventions, additional research that allows for causal interpretations and provides information on the context and dynamics of the exchange sex interaction is needed.

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IMPLICATIONS AND CONTRIBUTION

This study reports that one in 14 DC high school students have engaged in exchange sex. Specific groups, including students with unstable housing or food insecurity or those who use illicit drugs are at the greatest risk. These findings are crucial to guiding HIV and sexually transmitted disease prevention efforts among youth.

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Table 1

Substance use measures

Substance	Original response options	Recorded response options
Illicit drugs		
During your life, how many times have you used any form of cocaine, including powder, crack, or freebase?		
During your life, how many times have you used heroin (also called smack, junk, or China White)?		
During your life, how many times have you used methamphetamines (also called speed, crystal, crank, or ice)?		
During your life, how many times have you used ecstasy (also called MDMA)?		
	0 times	Never
	1 or 2 times	
	3 to 9 times	
	10 to 19 times	} At least once
	20 to 39 times	
	40 or more times	
Synthetic marijuana		
During your life, how many times have you used synthetic marijuana (also called K2, Spice, fake weed, King Kong, Yucatan Fire, Skunk, or Moon Rocks)?		
	0 times	Never
	1 or 2 times	
	3 to 9 times	
	10 to 19 times	} At least once
	20 to 39 times	
	40 or more times	
Marijuana		
How old were you when you tried marijuana for the first time?		
	I have never tried marijuana	Never
	8 years old or younger	
	9 or 10 years old	
	11 or 12 years old	} At least once
	15 or 16 years old	
	17 years old or older	
Cigarettes		

Substance	Original response options	Recoded response options
How old were you when you first tried cigarette smoking, even one or two puffs?	I have never tried cigarette smoking, not even one or two puffs	Never
8 years old or younger	9 or 10 years old	At least once
11 or 12 years old	13 or 14 years old	}
15 or 16 years old	17 years old or older	At least once
Electronic vapor products	Have you ever used an electronic vapor product?	Never
No	Yes	At least once
Alcohol	During your life, on how many days have you had at least one drink of alcohol?	Never
0 days	1 or 2 days	Never
3–9 days	10–19 days	}
20–39 days	40–99 days	At least once
100 or more days		

Table 2

Characteristics, sexual behavior, and substance use among high school students in Washington, DC, 2017 (n = 8,578)

Characteristic	n ^a	% ^b	(95% CI) ^b
Sex			
Female	4,504	50.3	(48.9–51.8)
Male	3,956	49.7	(48.2–51.1)
Race/ethnicity			
White, non-Hispanic	702	4.5	(4.0–4.9)
Black, non-Hispanic	5,203	72.3	(71.0–73.6)
Hispanic	1,481	17.5	(16.4–18.7)
Other, non-Hispanic ^c	859	5.7	(5.3–6.1)
Grade			
9th	2,371	31.5	(28.0–34.9)
10th	2,394	25.8	(22.8–28.7)
11th	2,124	22.8	(20.1–25.4)
12th	1,544	20.0	(17.1–22.9)
Type of sexual contact			
Opposite-sex partners only	3,050	45.8	(44.1–47.4)
Same-sex partners only	414	6.2	(5.5–6.8)
Both sex partners	501	7.1	(6.3–7.8)
No sexual contact	3,050	41.0	(39.4–42.6)
Ever engaged in exchange sex			
No	6,268	92.6	(91.8–93.4)
Yes	459	7.4	(6.6–8.2)
Kicked out, ran away, or abandoned during the past 30 days			
No	6,066	88.7	(87.8–89.7)
Yes	707	11.3	(10.3–12.2)
Hungry due to lack of food at home during the past 30 days			
Never/rarely/sometimes	6,791	94.9	(94.3–95.6)
Most of the time/always	335	5.1	(4.4–5.7)
Illicit drugs ^d			
Never	7,416	88.9	(87.9–89.9)
At least once	516	11.1	(10.1–12.1)
Synthetic marijuana			
Never	7,416	93.0	(92.2–93.7)
At least once	516	7.0	(6.3–7.8)
Marijuana			
Never	4,120	50.6	(49.1–52.1)
At least once	3,798	49.4	(47.9–50.9)
Cigarettes			

Characteristic	n ^a	% ^b	(95% CI) ^b
Never	6,375	78.2	(77.1–79.2)
At least once	1,750	21.8	(20.8–22.9)
Electronic vapor products			
Never	5,553	70.7	(69.4–71.9)
At least once	2,350	29.3	(28.1–30.6)
Alcohol			
Never	3,587	50.4	(48.9–51.9)
At least once	3,708	49.6	(48.1–51.1)

CI = confidence interval.

^aSample n are unweighted.

^bWeighted results are representative of all students in grades 9 to 12 attending public and public charter high schools in the District of Columbia.

^cIncludes multiple races, American Indian or Alaska Native, Asian, Native Hawaiian, or other Pacific Islander.

^dCocaine, heroin, methamphetamines, and/or ecstasy.

Table 3 Associations with having ever engaged in exchange sex among high school students in Washington, DC, 2017

Characteristic	Ever engaged in exchange sex, % (95% CI) ^a (n = 8,578)	Unadjusted OR (95% CI) (n = 8,578)	AOR (95% CI) (n = 5,022)
Demographics			
Sex			
Female	4.6 (3.8–5.3)	1 (reference)	1 (reference)
Male	10.0 (8.6–11.4)	2.3 (1.8–2.9)	2.5 (1.6–4.0)
Race/ethnicity			
White, non-Hispanic	3.1 (1.6–4.7)	1 (reference)	1 (reference)
Black, non-Hispanic	7.0 (6.0–7.9)	2.1 (1.1–3.9)	1.4 (.7–2.8)
Hispanic	8.9 (7.0–10.8)	3.0 (1.7–5.3)	2.2 (1.0–4.6)
Other, non-Hispanic ^b	6.3 (4.3–8.3)	2.3 (1.3–3.9)	1.0 (.4–2.8)
Grade			
9th	6.0 (4.6–7.3)	1 (reference)	1 (reference)
10th	6.7 (5.4–8.1)	1.1 (.8–1.6)	1.3 (.8–2.1)
11th	8.1 (6.4–9.7)	1.4 (1.0–1.9)	1.1 (.6–2.0)
12th	8.6 (6.8–10.5)	1.5 (1.1–2.1)	1.2 (.6–2.2)
Type of sexual contact			
Opposite-sex partners only	6.3 (5.2–7.4)	1 (reference)	1 (reference)
Same-sex partners only	11.7 (7.8–15.7)	2.0 (1.3–3.0)	1.8 (.8–3.9)
Both sex partners	11.8 (8.3–15.3)	2.0 (1.4–2.9)	2.4 (1.2–4.9)
Home environment			
Kicked out, ran away, or abandoned during the past 30 days			
No	3.1 (2.6–3.6)	1 (reference)	1 (reference)
Yes	37.2 (32.9–41.4)	18.4 (14.5–23.3)	10.7 (7.0–16.3)
Hungry due to lack of food at home during the past 30 days			
Never/rarely/sometimes	6.8 (6.0–7.6)	1 (reference)	1 (reference)
Most of the time/always	15.8 (10.9–20.6)	2.6 (1.7–3.8)	2.2 (1.1–4.5)
Substance use			

Characteristic	Ever engaged in exchange sex, % (95% CI) ^a (n = 8,578)	Unadjusted OR (95% CI) (n = 8,578)	AOR (95% CI) (n = 5,022)
Illicit drugs ^c			
Never	4.7 (4.1–5.3)	1 (reference)	1 (reference)
At least once	36.7 (31.5–41.8)	11.8 (9.1–15.3)	2.9 (1.6–5.3)
Synthetic marijuana			
Never	5.7 (5.0–6.4)	1 (reference)	1 (reference)
At least once	37.7 (31.2–44.3)	10.0 (7.4–13.6)	2.6 (1.3–5.0)
Marijuana			
Never	5.1 (4.2–6.0)	1 (reference)	1 (reference)
At least once	8.8 (7.6–10.0)	1.8 (1.4–2.3)	.9 (.6–1.5)
Cigarettes			
Never	5.2 (4.5–5.9)	1 (reference)	1 (reference)
At least once	12.9 (10.6–15.2)	2.7 (2.1–3.4)	1.0 (.6–1.7)
Electronic vapor products			
Never	4.2 (3.6–4.9)	1 (reference)	1 (reference)
At least once	12.1 (10.3–13.9)	3.1 (2.5–3.9)	1.5 (1.0–2.3)
Alcohol			
Never	5.0 (4.2–5.9)	1 (reference)	1 (reference)
At least once	7.1 (6.0–8.2)	1.4 (1.1–1.8)	.7 (.5–1.1)

AOR = adjusted odds ratios; CI = confidence interval; OR = odds ratio.

^aWeighted results are representative of all students in grades 9 to 12 attending public and public charter high schools in the District of Columbia.

^bIncludes multiple races, American Indian or Alaska Native, Asian, Native Hawaiian, or other Pacific Islander.

^cCocaine, heroin, methamphetamines, and/or ecstasy.