

## Article

# Multiple Sexual Partners and Its Associated Factors among Bhutanese Adolescents: Findings from 2016 Global School-Based Student Health Survey

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**Abstract:** Data on factors influencing multiple sexual partners that can inform cost-effective interventions are limited in Bhutan. This study examined factors associated with multiple sexual partners among adolescents. We analyzed the data of 7437 school-going adolescents from the 2016 Bhutan Global School-based Student Health Survey. Multivariable logistic regression stratified by sex was conducted. The prevalence of sex with multiple partners was 7.39%, with a much higher prevalence among males than females. In the overall sample, males, those >15 years of age, who smoked, consumed alcohol, used drugs, exhibited truancy, and were unmonitored by parents, had higher odds of having sex with multiple partners. In both males and females, being >15 years old, smoking, and drug use were associated with having multiple sexual partners. Alcohol use and truancy were significant only among males, whereas a lack of parental monitoring was significant only among females. The findings suggest that reducing substance use and enhancing parental support, and targeting males and older adolescents may yield larger gains.

**Keywords:** multiple partners; sexual intercourse; substance use; parental monitoring; adolescents



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## 1. Introduction

Multiple sexual partnerships are characterized by early sexual activities, a higher number of lifetime partners, frequent sexual intercourse, and unprotected sex, including low condom use. Multiple sexual relationships increase the risk of sexually transmitted infections (STIs) including HIV, unplanned pregnancies, and psychological and substance use disorders [1–5]. Young people are particularly vulnerable to STIs, and youths aged 15–25 years harbor 30% of new HIV infections worldwide [6]. The proportion of those with multiple sexual partners increases during the adolescent period and plateaus after the age of 20 years [7]. In some settings, adolescents may be more likely to engage in short-lived relationships, which increases the possibility of having multiple partners, which places them at a greater HIV risk. They may also engage in multiple sexual relationships to have more freedom in choosing whom to marry later. Additionally, those with multiple partners are less likely to use condoms [8,9].

Sexually transmitted infections, including HIV, are a growing public health issue in Bhutan. Although the estimated prevalence is <1% in the general population and <100 new annual cases among adolescents aged 15–19 years [10], suggesting a low HIV burden, the number of HIV cases is steadily increasing [11]. Youths (14–24 years old) accounted for around 20% of the total cases reported [12]. Most (>90%) of the infections were reported to

have been transmitted through heterosexual contacts [11,13], which depicts rampant unsafe and risky sexual behaviors, and a high level of multiple sexual relationships is portrayed as the main driver of the rising STIs and HIV epidemic [11,14]. Furthermore, about a fifth of Bhutanese women had their first pregnancy before the age of 18 years [15] and over 25% were married or in a union before the age of 18 years [16]. Likewise, about 20% of the adolescent girls were currently married or in a union [17]. These health and social problems can be also linked to risky sexual behaviors.

Studies reveal a high prevalence of multiple sexual partners (31%) among rural Bhutanese adults [18], and a much higher prevalence (54.9%) among individuals who visited public entertainment venues [19]. The 2016 Bhutan Global School-based Student Health Survey (BGSHS) showed that an alarming 49% of the adolescents reported having their first sexual intercourse before the age of 14 [20]. Similarly, other studies found that exposure to sexual intercourse occurred at an early age, and, for some students, it was as early as before commencing high school [18,21]. The 2016 BGSHS also reported that around 6% of the adolescents engaged in sexual intercourse with multiple partners, with a much higher proportion among males than females (10% vs. 1.6%), older than younger students (8% vs. 4%), and among boarding school students than day scholars (7% vs. 5%) [20]. These data suggest that young adolescents are at a higher risk of acquiring STIs.

In Bhutan, generally, such risky sexual activities, including early initiation of sex especially among males, are widely tolerated in society, and are associated with gender norms of being masculine if males have many partners. However, regardless of consensus, sexual intercourse against individuals below the age of 18 is considered sexual abuse and the defendant is rendered guilty of rape as per the Penal Code of Bhutan. Sexual violence against children can be reported to the National Commission for Women and Children and a non-governmental organization called RENEW (Respect, Educate, Nurture, and Empower Women) for support and services.

To address the health concerns and needs of adolescents, the Ministry of Health of Bhutan has developed the National Adolescent Strategic Plan of Action for the period 2019–2023 [16]. The plan points out the inadequate integration of an adolescent-friendly health service approach into the health system and links low coverage and utilization to inadequate awareness and capacity of health facilities. The strategy emphasizes the need for increased collaboration with the education sector and related agencies to implement comprehensive sex education and peer-based programs. The plan aims to increase access to adolescent-friendly health services, awareness of health and well-being issues, and implementation of comprehensive sex education by enhancing coordination among relevant health programs and external sectors.

Data on the factors influencing multiple sexual partners are limited in Bhutan. A study from Bhutan showed that being male and never married, and increasing age was associated with having multiple sexual partners [19]. However, this study focused on the at-risk population in only two commercial districts that prohibit generalizability [19]. Although casual intercourse, low condom usage, multiple sexual partners, high mobility, low HIV knowledge, and substance use are thought to contribute to the STI burden among adolescents [12,15,18,20,21], currently, there did not appear to be any studies examining the factors influencing multiple sexual partners among adolescents in Bhutan. A better understanding of the factors correlated with multiple sexual partners can inform policy interventions to reduce such risky sexual behaviors and prevent STIs among adolescents. Therefore, this study examines the factors associated with multiple sexual partners among school-going adolescents using the dataset of the BGSHS.

## 2. Materials and Methods

### 2.1. Study Data and Sample

This study used the cross-sectional data of the recent Bhutan Global School-based Student Health Survey (BGSHS) conducted in 2016 by the Ministry of Health of Bhutan in collaboration with the World Health Organization. This is the first survey conducted

via direct contact with school-going children aged 13–18 years on their school premises that aimed to assess the prevalence of key health behaviors and protective factors. A self-administered questionnaire collected information on demographic characteristics, diet, physical activity, injuries, mental health, substance use, sexual behavior, hygiene, and HIV&AIDS awareness. A total of 7990 students from 50 schools were selected using a two-stage clustering sampling approach, and the survey achieved a response rate of 95%. The data were collected from October to November 2016. The findings and details of the survey methods have been published previously [20]. After excluding 145 observations without information on engagement in sexual intercourse, the final sample for this study was 7431.

## 2.2. Study Variables

**Dependent variable:** Response to the question, “During your life, with how many people have you had sexual intercourse?” was used to determine multiple sexual partners. Those who reported having sexual intercourse with more than one person were categorized as having multiple sexual partners, following previous studies using GSHS data [22,23]. To enable regression analysis, those who had more than one sexual partner were coded “1”, and those who reported having one sexual partner or did not have sexual intercourse were coded “0”.

**Independent variables:** The questions from the 2016 BGSHS used to extract information on the independent variables for this study, along with their operational definitions, are provided in Table 1. Sex, age, student type, hunger (as a proxy for socioeconomic status), and place of residence were grouped as demographic variables, while smoking, alcohol and drug use, and truancy constituted the substance use and other behavior group. The mental health category included bullying experience, loneliness, anxiety, and suicidal behavior. Parental support and monitoring comprised the parental attachment group, while HIV&AIDS information and education were included under the HIV&AIDS awareness category. We followed previous studies in the selection of variables and grouping the response options [24–31].

**Table 1.** Questions used in the analysis of factors associated with multiple partners among Bhutanese adolescents.

Variables	Question/Description	Values
<b>Dependent variable</b>		
Multiple partners	“Had sexual intercourse with two or more persons during their life”	0 = no 1 = yes
<b>Independent variables</b>		
Demographic		
Sex	“What is your sex?”	0 = female 1 = male
Age	“How old are you?”	0 = ≤15 years old 1 = >15 years old
Type of student	“What type of student are you?”	0 = day student 1 = boarding student
Hunger (proxy of socio-economic status)	“Most of the time or always went hungry because there was not enough food in their home during the 30 days before the survey”	0 = no 1 = yes
Place of residence	“The place or residence was already categorized in the dataset provided”	0 = urban 1 = rural
Substance use and other behaviors		
Smoked cigarettes	“Currently smoked cigarettes on at least 1 day during the 30 days before the survey”	0 = no 1 = yes
Alcohol use	“Currently drank alcohol at least one drink of alcohol on at least 1 day during the 30 days before the survey”	0 = no 1 = yes

**Table 1.** *Cont.*

Variables	Question/Description	Values
Illicit drugs use	“Currently used drugs such as N10, RP, SP or dendrite one or more times during the 30 days before the survey”	0 = no 1 = yes
Truancy	“Missed classes or school without permission on one or more days during the 30 days before the survey”	0 = no 1 = yes
Mental health		
Bullying victimization	“Were bullied on one or more days during the 30 days before the survey”	0 = no 1 = yes
Feeling lonely	“Most of the time or always felt lonely during the 12 months before the survey”	0 = no 1 = yes
Feeling anxious	“Most of the time or always were so worried about something that they could not sleep at night during the 12 months before the survey”	0 = no 1 = yes
Suicidal behaviors	“Seriously considered attempting, made a plan, or attempted suicide during the 12 months before the survey”	0 = no 1 = yes
Parental attachment		
Parental support	“Parents or guardians most of the time or always understood their problems and worries during the 30 days before the survey”	0 = no 1 = yes
Parental monitoring	“Parents or guardians most of the time or always really knew what they were doing with their free time during the 30 days before the survey”	0 = no 1 = yes
HIV&AIDS awareness		
HIV&AIDS information	“Ever heard of HIV infection or AIDS”	0 = no 1 = yes
HIV&AIDS education	“Were taught in any of your classes about HIV infection or AIDS”	0 = no 1 = yes

### 2.3. Data Analysis

Frequencies and descriptive statistics were used to describe the characteristics of the study sample and the distribution of having multiple sexual partners. Chi-square test of significance examined the association between the dependent variables and the different categories of independent variables. Logistic regression analysis was performed to determine the association between multiple sexual partners and the independent variables. The factors found significant in the bivariate analysis at a 10% level were considered for further analysis in the multivariable logistic regression analysis, which was built using the backward elimination approach. The unadjusted and adjusted estimates, along with the 95% confidence interval (CI) were reported. Separate analyses were conducted for the full sample, as well as samples disaggregated by sex. The analysis accounted for the complex survey design, including clustering, stratification, and the sampling weights of the BGSHS. A  $p$ -value of  $<0.05$  was used to determine the statistical significance of the associations identified in the final model. The data analysis was conducted using the STATA statistical package version 14 (StatsCorp, Prosper, TX, USA).

### 3. Results

The weighted prevalence of having multiple sexual partners was 7.4%, with a higher prevalence among males than females (13.3% vs. 2.0%) (Table 2). In the full sample, the proportion of those who had multiple sexual partners was significantly higher among those >15 years of age (10.7%), boarding students (9.1%), and who reported that they smoked (17.5%), consumed alcohol (17.0%), used illicit drugs (24.7%), exhibited truancy (12.5%), felt anxious (10.1%), had suicidal behaviors (9.2%), and had poor parental support (8.3%) and monitoring (8.7%). In both males and females, those >15 years of age, who were boarding students, reported that they smoked, consumed alcohol, used illicit drugs, exhibited truancy, felt lonely, had suicidal behaviors, and were not monitored by their parents had a higher prevalence of having multiple sexual partners. In females' sample, the proportion of having multiple sexual partners was higher among those who reported that they were bullied

(3.0%), had poor parental support (2.8%), and never heard about HIV (2.5%), whereas the proportion was higher among males who reported feeling anxious (19.8%).

**Table 2.** Study sample characteristics and distribution of the multiple partners by demographic, substance use, mental health, parental attachment, and HIV&AIDS awareness disaggregated by sex.

Variables	n (% *)	All	Female		Male	
		MP, n (% *)	n	MP, n (% *)	n	MP, n (% *)
<b>Demographic</b>						
Sex		<b>&lt;0.001 #</b>				
Female	4059 (52.42)	79 (1.97)				
Male	3290 (47.58)	448 (13.33)				
missing	82	7				
Age		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>
≤15 years	3297 (45.27)	109 (3.38)	1903 (47.80)	13 (0.68)	1354 (42.18)	91 (6.45)
>15 years	4110 (54.73)	422 (10.67)	2150 (52.20)	66 (3.15)	1929 (57.82)	355 (18.28)
missing	24	3	6	0	7	2
Student type		<b>&lt;0.001 #</b>		0.219 #		<b>&lt;0.001 #</b>
Day student	3863 (55.99)	217 (5.77)	2118 (56.03)	36 (1.68)	1709 (55.95)	178 (10.24)
Boarding student	3350 (44.01)	292 (9.14)	1840 (43.97)	41 (2.33)	1479 (44.05)	248 (16.66)
missing	218	25	101	2 (1.94)	102	22 (21.59)
Hunger		0.360 #		0.208 #		0.180 #
No	7195 (96.96)	515 (7.33)	3929 (97.09)	78 (2.01)	3188 (96.83)	431 (13.18)
Yes	225 (3.04)	18 (9.10)	121 (2.91)	1 (0.60)	101 (3.17)	17 (17.93)
missing	11	1	9	0	1	0
Place of residence		0.451 #		0.543 #		0.340 #
Urban	3561 (57.97)	243 (7.00)	1918 (58.05)	42 (2.12)	1600 (57.76)	198 (12.40)
Rural	3870 (42.03)	291 (7.91)	2141 (41.95)	37 (1.75)	1690 (42.24)	250 (14.60)
missing						
<b>Substance use and other behaviors</b>						
Smoked cigarettes		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>
No	5574 (74.36)	204 (3.78)	3518 (86.44)	38 (1.10)	1996 (61.04)	161 (7.85)
Yes	1817 (25.64)	320 (17.49)	528 (13.56)	41 (7.53)	1268 (38.96)	277 (21.47)
missing	40	10	13	0	26	10
Alcohol use		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>
No	5486 (74.79)	216 (4.12)	3329 (83.47)	41 (1.28)	2094 (65.16)	171 (8.04)
Yes	1807 (25.21)	307 (17.02)	655 (16.53)	38 (5.65)	1135 (34.84)	267 (23.07)
missing	138	11	75	0	61	10
Illicit drugs use		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>
No	6905 (92.96)	402 (5.82)	3907 (96.53)	55 (1.43)	2926 (89.14)	342 (11.47)
Yes	490 (7.04)	126 (24.69)	133 (3.47)	22 (15.29)	348 (10.86)	102 (29.31)
missing	36	6	24	2 (12.93)	16	4
Truancy		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>		<b>&lt;0.001 #</b>
No	5568 (75.13)	303 (5.67)	3232 (80.06)	46 (1.47)	2282 (69.85)	254 (10.98)
Yes	1796 (24.87)	226 (12.54)	798 (19.94)	33 (4.02)	974 (30.15)	190 (18.79)
missing	67	5	29	0	34	4
<b>Mental health</b>						
Bullying victimization		0.112 #		<b>0.044 #</b>		0.390 #
No	5364 (74.37)	356 (6.91)	2941 (74.39)	48 (1.66)	2377 (74.68)	306 (12.77)
Yes	1822 (25.63)	154 (8.42)	1000 (25.61)	30 (2.97)	791 (25.32)	119 (14.23)
missing	245	24	118	1 (0.95)	122	23
Feeling lonely		0.056 #		<b>0.015 #</b>		<b>0.009 #</b>
No	6362 (87.06)	445 (7.19)	3379 (84.69)	60 (1.77)	2914 (89.64)	381 (12.82)
Yes	969 (12.94)	84 (8.93)	616 (15.31)	19 (3.27)	342 (10.36)	63 (17.86)
missing	100	5	64	0	34	4
Feeling anxiety		<b>0.008 #</b>		0.057 #		<b>0.002 #</b>
No	6814 (91.90)	474 (7.16)	3686 (90.95)	68 (1.85)	3058 (93.09)	401 (12.87)
Yes	606 (8.10)	60 (10.05)	367 (9.05)	11 (3.15)	227 (6.91)	47 (19.81)
missing	11	0	6	0	5	0

**Table 2.** Cont.

Variables	All		Female		Male	
	<i>n</i> (%) *	MP, <i>n</i> (%) *	<i>n</i>	MP, <i>n</i> (%) *	<i>n</i>	MP, <i>n</i> (%) *
Suicidal behaviors		<b>0.004 #</b>		<b>&lt;0.001 #</b>		<b>0.008 #</b>
No	5960 (80.53)	401 (6.95)	3197 (80.02)	48 (1.56)	2705 (83.34)	347 (12.58)
Yes	1344 (18.47)	123 (9.20)	791 (19.98)	30 (3.55)	534 (16.66)	93 (16.98)
Missing	127	10	71	1 (2.51)	51	8
<b>Parental attachment</b>						
Parental support		<b>0.002 #</b>		<b>&lt;0.001 #</b>		0.339 #
No	4075 (55.53)	329 (8.26)	2114 (52.70)	57 (2.76)	1916 (58.64)	270 (13.78)
Yes	3263 (44.47)	195 (6.23)	1895 (47.30)	20 (1.02)	1334 (41.36)	170 (12.57)
missing	93	10	50	2 (4.02)	40	8
Parental monitoring		<b>&lt;0.001 #</b>		<b>0.001 #</b>		<b>&lt;0.001 #</b>
No	4746 (63.44)	401 (8.69)	2538 (62.08)	62 (2.51)	2155 (64.88)	333 (15.14)
Yes	2666 (36.56)	131 (5.11)	1.514 (37.92)	17 (1.09)	1124 (35.12)	113 (9.95)
missing	19	2	7	0	11	2
<b>HIV&amp;AIDS awareness</b>						
HIV&AIDS information		0.858 #		<b>0.042 #</b>		0.166 #
No	945 (13.44)	72 (7.53)	459 (11.66)	16 (3.49)	471 (15.25)	56 (11.18)
Yes	6327 (86.5)	450 (7.35)	3528 (88.34)	63 (1.81)	2741 (84.75)	381 (13.69)
missing	159	12	72	0	78	11
HIV&AIDS education		0.057 #		0.113 #		0.139 #
No	2413 (32.65)	192 (8.32)	1306 (32.00)	31 (2.54)	1077 (33.21)	160 (14.58)
Yes	5001 (67.35)	340 (6.92)	2745 (68.00)	48 (1.70)	2206 (66.79)	287 (12.71)
missing	17	2	8	0	7	1

*n* = number; MP = multiple partners; \* weighted percentage calculated without missing values; # *p*-value of chi-square test estimated without missing values with typed in “bold” indicating statistically significant (*p* < 0.05).

The bivariate analysis (Table 3) showed that being >15 years of age, boarding schooling, substance use, truancy, anxiety, suicidal behaviors, and poor parental attachment were the factors associated with having multiple sexual partners in the full sample. When examined by sex, being >15 years of age, boarding schooling, substance use, truancy, suicidal behaviors, loneliness, and poor parental monitoring were the common factors in both males and females. Bullying victimization, poor parental support, and HIV awareness were the factors associated with multiple sexual partners among females, while anxiety was significant only among males.

**Table 3.** Unadjusted associations between demographic, substance use, mental health, parental attachment, and HIV&AIDS awareness with having multiple partners disaggregated by sex.

Variables	All COR (95% CI)	Female COR (95% CI)	Male COR (95% CI)
<b>Demographic</b>			
Sex (ref: female) Male	<b>7.67 (5.63–10.45)</b>		
Age (ref: ≤15 years) > 15 years	<b>3.42 (2.54–4.58)</b>	<b>4.74 (2.71–8.28)</b>	<b>3.24 (2.27–4.64)</b>
Student type (ref: day student) Boarding student	<b>1.64 (1.35–2.00)</b>	<b>1.39 (0.81–2.40)</b>	<b>1.75 (1.43–2.14)</b>
Hunger (ref: No) Yes	1.27 (0.75–2.13)	0.29 (0.04–2.34)	1.44 (0.83–2.49)
Place of residence (ref: Urban) Rural	1.14 (0.80–1.63)	0.82 (0.43–1.57)	1.21 (0.81–1.80)

Table 3. Cont.

Variables	All COR (95% CI)	Female COR (95% CI)	Male COR (95% CI)
<b>Substance use and other behaviors</b>			
Smoked cigarettes (ref: No) Yes	<b>5.39 (4.13–7.03)</b>	<b>7.34 (4.54–11.84)</b>	<b>3.21 (2.37–4.34)</b>
Alcohol use (ref: No) Yes	<b>4.77 (3.52–6.47)</b>	<b>4.61 (2.70–7.87)</b>	<b>3.43 (2.51–4.70)</b>
Illicit drugs use (ref: No) Yes	<b>5.12 (3.61–7.27)</b>	<b>12.42 (6.57–23.50)</b>	<b>3.02 (2.16–4.21)</b>
Truancy (ref: No) Yes	<b>2.39 (2.03–2.80)</b>	<b>2.80 (1.72–4.55)</b>	<b>1.88 (1.58–2.23)</b>
<b>Mental health</b>			
Bullying victimization (ref: No) Yes	1.24 (0.95–1.62)	<b>1.81 (1.01–3.25)</b>	1.13 (0.84–1.52)
Feeling lonely (ref: No) Yes	1.27 (0.99–1.61)	<b>1.88 (1.13–3.11)</b>	<b>1.48 (1.11–1.96)</b>
Feeling anxiety (ref: No) Yes	<b>1.45 (1.11–1.89)</b>	1.73 (0.97–3.05)	<b>1.67 (1.22–2.29)</b>
Suicidal behaviors (ref: No) Yes	<b>1.36 (1.11–1.66)</b>	<b>2.32 (1.45–3.71)</b>	<b>1.42 (1.10–1.82)</b>
<b>Parental attachment</b>			
Parental support (ref: Yes) No	<b>1.36 (1.13–1.63)</b>	<b>2.75 (1.57–4.82)</b>	1.11 (0.89–1.39)
Parental monitoring (ref: Yes) No	<b>1.77 (1.41–2.21)</b>	<b>2.34 (1.44–3.82)</b>	<b>1.61 (1.27–2.04)</b>
<b>HIV&amp;AIDS awareness</b>			
HIV&AIDS information (ref: Yes) No	1.03 (0.77–1.37)	<b>1.96 (1.01–3.81)</b>	0.79 (0.57–1.11)
HIV&AIDS education (ref: Yes) No	1.22 (0.99–1.50)	1.51 (0.90–2.54)	1.17 (0.95–1.45)

ref = reference group; COR = crude odds ratio; CI = confidence interval; bold =  $p < 0.05$ .

In the multivariable analysis, sex, age, student type, substance use, truancy, and parental monitoring were the factors associated with having multiple sexual partners in the full sample (Table 4). Specifically, being males (AOR: 4.90, 95% CI: 3.51–6.85), >15 years of age (AOR: 2.55, 95% CI: 1.84–3.54), and boarding schooling (AOR: 1.52, 95% CI: 1.20–1.92) were associated with having multiple sexual partners. The odds of having multiple sexual partners were also higher among those adolescents who reported that they smoked (AOR: 1.90, 95% CI: 1.43–2.53), consumed alcohol (AOR: 1.77, 95% CI: 1.26–2.49), used illicit drugs (AOR: 1.94, 95% CI: 1.36–2.76), and exhibited truancy (AOR: 1.53, 95% CI: 1.22–1.93). The likelihood of having multiple sexual partners was 1.31 (95% CI: 1.00–1.71) times greater among adolescents who reported that they were not monitored by their parents. Among females, those >15 years of age, who reported that they smoked, used illicit drugs, and were not monitored by their parents had higher odds of having multiple sexual partners. In addition to the common factors (age, smoking, and drug use), boarding schooling, alcohol use, and truancy were the significant factors among males. The association of the common factors was found to be larger among females.



**Table 4.** Adjusted association between demographic, substance use, and parental attachment, with having multiple partners disaggregated by sex.

Variables	All AOR (95% CI)	Female AOR (95% CI)	Male AOR (95% CI)
<b>Demographic</b>			
Sex (ref: female) Male	<b>4.90 (3.51–6.85)</b>		
Age (ref: ≤15 years) >15 years	<b>2.55 (1.84–3.54)</b>	<b>3.79 (2.23–6.43)</b>	<b>2.39 (1.64–3.47)</b>
Student type (ref: day student) Boarding student	<b>1.52 (1.20–1.92)</b>		<b>1.60 (1.24–2.07)</b>
<b>Substance use and other behaviors</b>			
Smoking cigarettes (ref: No) Yes	<b>1.90 (1.43–2.53)</b>	<b>3.44 (1.98–6.00)</b>	<b>1.76 (1.30–2.40)</b>
Alcohol use (ref: No) Yes	<b>1.77 (1.26–2.49)</b>		<b>1.79 (1.29–2.49)</b>
Illicit drugs use (ref: No) Yes	<b>1.94 (1.36–2.76)</b>	<b>5.43 (2.71–10.89)</b>	<b>1.71 (1.21–2.42)</b>
Truancy (ref: No) Yes	<b>1.53 (1.22–1.93)</b>		<b>1.53 (1.23–1.92)</b>
<b>Parental attachment</b>			
Parental monitoring (ref: Yes) No	<b>1.31 (1.00–1.71)</b>	<b>1.92 (1.13–3.27)</b>	

ref = reference group; AOR = adjusted odds ratio; CI = confidence interval; bold =  $p < 0.05$ .

#### 4. Discussion

Given the adverse outcomes associated with sex with multiple partners that include increased risk of STIs and unplanned pregnancies [1–5], understanding its determinants is essential to inform targeted policies aimed to minimize adolescents' vulnerability to sexual and reproductive health problems. Overall, this study found that being male, >15 years of age and substance use were associated with having multiple sexual partners irrespective of sex, and the associations appeared pronounced among females. Living in schools, alcohol use, and truancy were significantly associated with having multiple sexual partners among males, whereas a lack of parental monitoring was associated with having multiple sexual partners among females.

The prevalence of having multiple sexual partners in this study was much higher among male adolescents. They were nearly five times more likely to perform sexual intercourse with more than one partner, regardless of other variables. A study that analyzed data from multiple countries in sub-Saharan Africa also found a much greater prevalence of multiple sexual partners among males than females [32]. Like many African and Asian countries, Bhutan is also a male-dominated society, and stereotypical gender norms such as masculinity promote multiple sexual partners and greater acceptance for men to have more partners. In such settings, boys are stereotyped as being sexually active, whereas female sexuality is perceived to be passive. Girls' movements are also restricted, and they are expected to maintain their virginity until marriage [33,34]. Therefore, the social structure of Bhutan might have led to an unrestricted expression of sexual cognitions among males that eventually enables them to practice higher-risk sexual behaviors.

The results also showed that adolescents who were >15 years old had increased odds of having more than one sexual partner. Compared to younger adolescents, older ones might have an earlier onset of sexual intercourse, which can potentially increase their probability of frequent sex and having multiple partners [35,36]. A longitudinal study in the United States that observed sexual behavior from adolescence to adulthood also showed that the percentage of having multiple partners sharply increased through teens and reached steady rates after the age of 20 years [7].



Another interesting finding from this study is that male adolescents boarding in schools were more likely to have sexual intercourse with multiple partners, whereas this association was not evident among females. Almost all boarding schools in Bhutan have both girls and boys enrolled. Many boarding students usually come from rural areas where the tradition of night hunting still exists. Night-hunting is a rural type of urban dating where young couples would meet at night, and it usually leads to courtship [37]. In the context of Bhutan, generally, boarding school adolescents are less likely to receive adequate parental care [38]. This might bring more opportunities for male adolescents to engage in risky behavior, including sexual intercourse with multiple partners. Furthermore, given that the gender norms are internalized in Bhutanese society, including in schools, girls might receive more restrictions regarding their behavior, and they may be monitored more closely by the teachers to cover for parental roles in boarding schools. The finding that lack of parental monitoring was associated with an increased probability of having multiple partners among females also supports this explanation. Parental monitoring (knowing the adolescents' whereabouts and activities during free time) might play an important role in reducing adolescents' opportunities to engage in risky sexual behavior. Parental monitoring can limit adolescents' exposure to high-risk peers which, in turn, can influence their perceptions of normative peers [39]. Previous studies also suggest that parental monitoring was not only a protective factor against having multiple partners [40,41], but was also protective against an unprotected last sexual encounter [40,42].

Parental monitoring was not a significant factor among male adolescents in this study. This may be partly due to the influence of societal norms that seemingly is less binding for male behavior. Bhutanese parents generally are more protective of their daughters than sons as evident in the general view that a greater share of the inherited property should be given to daughters [43]. Therefore, parental monitoring may be more important in influencing risky sexual behaviors among females than male adolescents. However, the reduced parental monitoring and consequent increased odds of influence by high-risk peers that are attributable to societal norms may also enable male day students to engage in risky health and sexual behaviors.

Consistent with previous work [44,45], this study found that any substance use (smoking, alcohol, or illicit drugs) was associated with having multiple sexual partners. Clustering of health-risk behaviors such as substance use and risky sexual behaviors among adolescents has also been documented [32]. The adolescence period is characterized by curiosity in exploring, enthusiasm, sensation-seeking, and a high tolerance for the unknown that increases their vulnerability to high-risk-taking behaviors [46,47]. Adolescents who abuse substances might have a heightened sensation-seeking feeling for other risk behaviors, such as frequent sexual intercourse with different partners [32]. The co-occurrence of health-risk behaviors is shown to drive risky sexual behavior, including having multiple partners [48]. In the present study, the association between alcohol use and having multiple partners was not significant among females. The fact that, in Bhutan, drinking alcohol is traditionally less accepted among females than males may be a possible explanation for this finding. Although smoking and drug use were associated with having multiple partners among both genders, the associations were larger among females. Previous studies from sub-Saharan African countries [32] and Scotland, UK [48], also revealed similar findings. When sexual behavior is perceived as more normal for male than female adolescents [49], such as in Bhutan, it might be less tied with substance use behavior. Thus, the greater effect was among females than males.

The results also showed that being truant was associated with having multiple partners in the full as well as among male samples. As influenced by gender norms, truancy is more prevalent among male adolescents in Bhutan. Adolescents with a history of skipping schools were found to have a greater frequency of involvement in sexual behaviors and a less abstinence attitude [50]. Moreover, truancy may influence risky sexual behaviors by increasing the time spent on sensation-seeking risky behavior such as substance use. This aligns with previous studies that showed associations between truancy and substance use

such as smoking [51], alcohol [52], and drugs [53]. Interventions aimed at providing HIV information and risk reduction counseling, behavioral skills, and education programs, and reducing substance and alcohol use may help reduce multiple sexual partnerships [54].

The impact of health emergencies such as that of the current COVID-19 pandemic can potentially exacerbate adolescent health and promote the uptake of risky behaviors including alcohol and drug use [55–57]. In Bhutan, increased incidences of violence, mental health issues [58], and unwanted and teenage pregnancies, possibly attributable to reduced access to sexual and reproductive services [59], were also reported especially during the first year of the pandemic. Gender-based violence has been reported to have increased by 37% in 2020 compared to 2019 [60]. Bhutanese youths who may be fatigued by behavioral and movement restrictions might try to make up for the lost time given the high COVID-19 vaccine coverage [61].

In addition, the rise in unemployment, reduced income, and poor health triggered by the pandemic, and the associated competing priorities to obtain basic essential food and services can also lead to reduced parental monitoring. All these could result in increased risky behaviors among youths. Moreover, the recent lift of the ban on tobacco sales to counter illicit trade across the borders during the pandemic (Press Release on the Fifth Session of the Third Parliament) and the removal of the ban on the issuance of bar licenses (Press Release on the Sixth Session of the Third Parliament—both available at [https://www.nab.gov.bt/en/media/press\\_release](https://www.nab.gov.bt/en/media/press_release) (accessed on 23 February 2023) could potentially ease access to these harmful substances. Future youth and adolescent-orientated strategies should therefore also take issues and needs caused by such emergencies and disasters into account.

#### *Strengths and Limitations*

To our knowledge, this is the first study examining the factors associated with having multiple sexual partners among Bhutanese adolescents. This study used nationally representative survey data and accounted for the complex survey design of the BGSHS. Thus, the findings can be widely applicable in the Bhutanese setting. Moreover, analyses disaggregated by sex added new knowledge on the different factors influencing multiple sexual partners among male and female adolescents that are important for developing focused policies.

The main limitation of this study lies in the nature of cross-sectional design that prevents examining the direction and inferring the causality of the associations established. The association identified could be bidirectional. For example, substance use can promote multiple sexual partners, but such risky sexual behaviors could also influence substance use and mental health. Thus, the main findings must be interpreted with caution. In addition, all of the variables were derived from self-reported measures that are prone to social desirability and recall bias. However, the use of self-administrated and anonymized questionnaires for data collection might have potentially reduced the bias to some extent. Further similar studies with better data that also include those important variables not examined in this study are required to inform cost-effective interventions. Moreover, in our analyses, all participants with  $\geq 2$  partners were included in the same group, and hence, we did not investigate the factors associated with the increased number of sexual partners. Due to data limitations, we only used a single item to evaluate some psychological measures, such as parental support, and loneliness. Differences in the recall periods or time intervals between the measures of multiple sexual partners during “the lifetime” and independent variables, such as health-related behaviors in “last 30 days” and mental health in “last 12 months” might influence the associations to some extent. Therefore, better measures of the variables are required for future studies on this topic.

Furthermore, although seemingly not significant [62], the exclusion of 154 observations (~1.8%) due to the non-availability of information on engagement in sexual intercourse would have also affected the analysis. Finally, we used data collected in 2016; therefore, there have been changes since then. For example, social adjustments during and after the

COVID-19 pandemic might lead to changes in adolescents' psychosocial resources (e.g., social relationships, mental well-being) and health-related behaviors. Future studies taking into account the most current context is worth considering.

## 5. Conclusions

Using a recent nationally representative dataset, this study examined the factors associated with multiple sexual partners among school-going adolescents in Bhutan. The results revealed that male gender, older adolescents, living in the schools, truancy, lack of parental monitoring, and substance abuse were associated with having multiple sexual partners. The findings may be beneficial in informing policies to reduce risky sexual behaviors among adolescents and prevent the associated adverse outcomes. Interventions aimed at providing HIV information and risk reduction counseling, behavioral skills, and education programs, reducing substance use, and targeting males and boarding students might help prevent STIs and unintended pregnancies among adolescents. These can be implemented collaboratively by the health and education ministries in schools and educational institutions by engaging all stakeholders and embracing a whole-of-society approach. Prevention programs that seek collaboration with parents and schools may yield larger gains.

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