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Sexual behaviour and its correlates among adolescents in Brunei Darussalam

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Abstract:
The aim of this study was to estimate the prevalence and correlates of having had sexual intercourse among adolescents in Brunei Darussalam. The sample included 2599 school-going adolescents that responded to the Global School-based Student Health Survey (GSHS) [mean age 14.7 years, standard deviation (SD) = 1.4]. Sexual behaviour with a range of other health behaviours and protective factors were assessed based on a self-report. The relationship between socio-demographic, substance use, psychosocial, protective factors and ever had sexual intercourse were assessed using logistic regression analyses. Results indicate that 11.3% ever had sexual intercourse and 2.1% had two or more sexual partners in their lifetime. Among the sexually active students, 50% had early sexual debut (<14 years), 38.3% had used a condom at last sex, and 31.8% had used other birth control at last sex. In adjusted analysis, older age [odds ratio (OR) = 1.58, confidence interval (CI) = 1.04, 2.42], current tobacco use (OR = 1.67, CI = 1.10, 2.52), current alcohol consumption (OR = 2.26, CI = 1.26, 4.93), history of attempted suicide (OR = 1.96, CI = 1.20, 3.19) and bullying victimisation (OR = 1.43, CI = 1.00, 2.05) were associated with ever having had sexual intercourse. Significant sexual risk behaviour was found and several risk factors identified for incorporation in comprehensive sex education.

Keywords: adolescents, Brunei Darussalam, health risk behaviour, sexual behaviour

DOI: 10.1515/ijamh-2018-0028

Received: January 27, 2018; **Accepted:** May 27, 2018

Introduction

Brunei Darussalam situated in the northwest of the island Borneo in Southeast Asia, has a total population of 420,000, life expectancy is 77 years, secondary school enrolment ratio is 96 and per capita GDP was 31,431 USD in 2016 [1]. In Brunei Darussalam, sexually transmitted infections (STIs) are becoming a public health issue, with the highest number of STIs being among 20–29 year olds, followed by 10–19 year olds [2]. There has also been an upward trend in HIV cases [3]. This shows that risky sexual behaviour practices exist resulting in STIs, including HIV, within the community in Brunei Darussalam.

Sexual activity may begin during the adolescent period and may be associated with sexual risk behaviour such as unprotected sex and lack of use of contraceptives [4]. In other Southeast Asian countries, among females aged 15–19 years, 10.8% ever had sex in Cambodia and 10.1% in the Philippines [5]. Among in-school adolescents in Malaysia, 8.3% ever had sex [6] and among middle school students in Thailand 18.7% ever had sex [7]. Among school students in South Korea 6.4% of males and 3.2% of females had sexual intercourse [8], and among school students in Australia 35% had had sexual intercourse, and among the sexually active, 35% had not used a condom and 63.2% had not used contraception at last sex [9]. In large study of 15-year-old school children across 30 countries in Europe, Israel and Canada, 27% had had sexual intercourse and 14% had not used the contraceptive pill or condoms at last sex [10].

Correlates of adolescent sexual intercourse onset have been identified, as reviewed in Ahmad et al. [6], Peltzer and Pengpid [11], [12] and Sharma et al. [13], including socio-demographic factors (male gender, older adolescents), substance use (alcohol use, tobacco use, drug use), psychosocial distress (depression symptoms, involved in a physical fight) and protective factors (school attendance, having close friends, positive peer support, parental or guardian supervision, connectedness and bonding). The World Health Organisation (WHO) propagates comprehensive sex education to prevent early pregnancy and STIs among adolescents [14].

There are limited data on young people and sexual behaviour in Brunei Darussalam [15]. In order to inform sexual and reproductive health interventions aimed at delaying sexual debut and promoting “safer sex”, there

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is a need to identify correlates that are associated with adolescent intercourse. Therefore, the aim of this study was to estimate the prevalence and correlates of having had sexual intercourse among in-school adolescents, using data from the Brunei Darussalam Global School-Based Health Survey (GSHS), 2014.

Methods

Sample and procedure

This study included a secondary analysis of data from the GSHS from Brunei Darussalam. "A two-stage cluster sample design was used to produce data representative of all students in Brunei Darussalam. At the first stage, schools were selected with probability proportional to enrollment size. At the second stage, classes were randomly selected and all students in selected classes were eligible to participate." [16] Details and data of the GSHS are available online [17]. Students completed the self-administered questionnaire under the supervision of trained research assistants [17].

The GSHS study protocol was approved by the WHO, as well as the Ministry of Health of Brunei Darussalam. The World Medical Association Declaration of Helsinki regarding ethical conduct of research involving human subjects was followed. Informed consents were obtained from all the participants and their parents.

Measures

The measurement variables utilised were from the GSHS [17] are shown in Table 1.

Table 1: Variable description.

Variables	Question	Response options
Socio-demographics		
Age	"How old are you?"	11 years old or younger to 16 years old or older
Sex	"What is your sex?"	Male, female
Hunger (proxy for SES)	"During the past 30 days, how often did you go hungry because there was not enough food in your home?"	1 = never to 5 = always
Sexual behaviour		
Ever had sex	"Have you ever had sexual intercourse?"	Yes, No (coded yes = 1, no = 0)
Age of sexual debut	"How old were you when you had sexual intercourse for the first time?"	I have never had sexual intercourse 11 years old or younger to 16 years old or older
Number of sex partners	"During your life, with how many people have you had sexual intercourse?"	I have never had sexual intercourse 1- person to 6 or more people
Condom use	"The last time you had sexual intercourse, did you or your partner use a condom?"	I have never had sexual intercourse, Yes, No, I do not know
Birth control use	"The last time you had sexual intercourse, did you or your partner use any method of birth control, such as withdrawal, rhythm (safe time), birth control pills, or any other method to prevent pregnancy?"	I have never had sexual intercourse, Yes, No, I do not know
Substance use		
Tobacco use	"During the past 30 days, on how many days did you smoke cigarettes (use other tobacco products)?"	1 = 0 days to 7 = All 30 days
Alcohol use	"During the past 30 days, on how many days did you have at least one drink containing alcohol?"	1 = 0 days to 7 = All 30 days
Drug use	"How old were you when you first used drugs?"	1 = I never used drugs to 8 = 18 years or older (coded 2–8 = 1, 1 = 0)
Psychosocial distress		
Loneliness	"During the past 12 months, how often have you felt lonely?"	1 = never to 5 = always (coded 4 or 5 = 1, 1–3 = 0)
Suicide attempt	"During the past 12 months, how many times did you actually attempt suicide?"	1 = 0 times to 5 = 6 or more times (coded 2–5 = 1, 1 = 0)

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In physical fight	"During the past 12 months, how many times were you in a physical fight?"	1 = 0 times to 8 = 12 or more times (coded 2–8 = 1, 1 = 0)
Bullying victimisation	"During the past 30 days, on how many days were you bullied?"	1 = 0 days to 7 = all 30 days (coded 2–7 = 1, 1 = 0)
Protective factors		
Close friends	"How many close friends do you have?"	1 = 0 to 4 = 3 or more (coded 1+ = 1, 0 = 0)
Peer support	"During the past 30 days, how often were most of the students in your school kind and helpful?"	1 = never to 5 = always (coded 4 or 5 = 1)
Parental or guardian supervision	"During the past 30 days, how often did your parents or guardians check to see if your homework was done?"	1 = never to 5 = always (coded 4 or 5 = 1)
Parental or guardian connectedness	"During the past 30 days, how often did your parents or guardians understand your problems and worries?"	1 = never to 5 = always (coded 4 or 5 = 1)
Parental or guardian bonding	"During the past 30 days, how often did your parents or guardians really know what you were doing with your free time?"	1 = never to 5 = always (coded 4 or 5 = 1)
School attendance	"During the past 30 days, on how many days did you miss classes or school without permission?"	1 = 0 days to 10 or more days (coded 1 = 1)

SES, socio-economic status.

Data analysis

Data analysis was performed using STATA software version 13.0 (Stata Corporation, College Station, TX, USA). Associations between sexual behaviour and socio-demographic, substance use, psychosocial distress variables, and protective factors were evaluated calculating odds ratios (ORs). Unconditional logistic regression was used for evaluation of the impact of explanatory variables on ever had sexual intercourse (binary-dependent variable). All variables statistically significant at the $p < 0.05$ level in bivariate analyses were subsequently included in the multivariable model. Both the reported 95% confidence intervals (CIs) and the p-value are adjusted for the multistage stratified cluster sample design of the study.

Results

Sample characteristics

The overall study response rate for the students was 65% [16]. The final sample included 2599 school-going adolescents, 51.1% male and 49.9% female, with a mean age 14.7 years [standard deviation (SD) = 1.4]. Table 2 provides the sample characteristics. A minority (6.7%) of the students had mostly or always experienced hunger in the past month, 12.1% were current tobacco users, 5.9% had consumed alcohol in the past month and 1.2% had taken drugs in their lifetime. Regarding psychosocial distress, 12.7% of the students reported to be mostly or always lonely in the past 12 months, 5.9% had attempted suicide in the past year, 23.6% had been in physical fight in the past 12 months and 21.2% had been bullied in the past month. Almost all students (97%) indicated that they have close friends, 55.3% had mostly or always peer support in the past month, only 15.1% had their homework checked by a parent or guardian, 28.5% and 40.9% had parental or guardian connectedness and bonding, respectively, while 63% had attended school in the past month. Among all students, 11.3% ever had sexual intercourse and 2.1% had two or more sexual partners in their lifetime. Among the sexually active students, 50% had early sexual debut (<14 years), 38.3% had used a condom at last sex and 31.8% had used other birth control at last sex. Male students were more likely than female students to ever had sexual intercourse, use tobacco, consume alcohol and had been in a physical fight, while female students were more often lonely and had attempted suicide than male students.

Table 2: Sample characteristics among adolescents in Brunei Darussalam, 2014.

Variable	Total n (%)	Males n (%)	Females n (%)	Statistic p-Value

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Socio-demographics				
Age in years				
13 or younger	640 (22.2)	306 (21.3)	331 (23.0)	0.315
14	617 (26.5)	293 (26.3)	324 (26.8)	
15	574 (22.4)	253 (20.7)	320 (24.1)	
16 or older	765 (28.9)	358 (31.6)	404 (26.1)	
Gender				
Female	1381 (49.9)			
Male	1210 (51.1)			
SES (went hungry)	170 (6.7)	74 (6.3)	92 (6.8)	0.707
Substance use				
Current tobacco use	279 (12.1)	210 (18.7)	68 (5.3)	<0.001
Current alcohol use	107 (5.9)	68 (5.9)	37 (2.9)	0.003
Drug use (life time)	29 (1.2)	18 (1.5)	9 (0.8)	0.127
Psychosocial distress				
Lonely	331 (12.7)	126 (10.2)	204 (15.2)	<0.001
Suicide attempt	107 (5.9)	53 (4.5)	99 (7.2)	0.012
In physical fight	582 (23.6)	363 (30.8)	215 (16.1)	<0.001
Bullying victimisation	524 (21.2)	262 (22.2)	260 (20.1)	0.281
Protective factors				
Has close friends	2506 (97.0)	1161 (96.5)	1340 (97.4)	0.271
Peer support	1439 (55.3)	619 (52.1)	618 (58.7)	0.010
Parental supervision	379 (15.1)	181 (15.2)	196 (14.9)	0.851
Parental connectedness	726 (28.5)	372 (31.3)	351 (25.7)	0.012
Parental bonding	1049 (40.9)	492 (41.6)	552 (40.0)	0.453
School attendance	1646 (63.0)	747 (62.1)	895 (64.1)	0.393
Sexual behaviour				
Ever had sexual intercourse	278 (11.3)	150 (13.2)	126 (9.4)	0.004
Sexual intercourse with two or more partners in lifetime	48 (2.1)	26 (2.5)	20 (1.4)	0.099
Among sexually active:				
Early sexual debut (<14 years)	47 (50.0)	26 (50.8)	19 (45.3)	0.078
Condom us at last intercourse	30 (38.3)	16 (38.5)	14 (39.0)	0.878
Other birth control at last sex	26 (31.8)	15 (35.7)	10 (24.8)	<0.001

SES, socio-economic status.

Associations with ever had sex

Results of the bivariate and multivariable logistic regression analyses are presented in Table 3. In adjusted analysis, older age (OR = 1.58, CI = 1.04, 2.42), current tobacco use (OR = 1.67, CI = 1.10, 2.52), current alcohol consumption (OR = 2.26, CI = 1.26, 4.93), history of attempted suicide (OR = 1.96, CI = 1.20, 3.19) and bullying victimisation (OR = 1.43, CI = 1.00, 2.05) were associated with ever having had sexual intercourse.

Table 3: Associations with ever had sex.

Variable	Unadjusted odds ratio (95% CI)	Adjusted odds ratio (95% CI)
Socio-demographics		
Age in years		
13 or younger	1 (Reference)	1 (Reference)
14	0.92 (0.63, 1.35)	0.83 (0.54, 1.27)
15	1.34 (0.89, 2.02)	1.33 (0.86, 2.06)
16 or older	1.66 (1.11, 2.50)[c]	1.58 (1.04, 2.42)[c]
Gender		
Female	1 (Reference)	1 (Reference)
Male	1.45 (1.13, 1.87)[b]	1.25 (0.96, 1.62)
SES (went hungry)	1.49 (0.93, 2.38)	–
Substance use		
Current tobacco use	2.59 (1.82, 3.69)[a]	1.67 (1.10, 2.52)[c]
Current alcohol use	1.97 (1.37, 2.85)[a]	2.26 (1.26, 4.03)[b]
Drug use (life time)	5.80 (2.71, 12.59)[a]	2.05 (0.92, 4.55)

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Psychosocial distress		
Lonely	0.98 (0.69, 1.40)	–
Suicide attempt	2.67 (1.64, 4.35)[a]	1.96 (1.20, 3.19)[b]
In physical fight	1.86 (1.33, 2.61)[a]	1.13 (0.76, 1.68)
Bullying victimisation	1.63 (1.17, 2.25)[b]	1.43 (1.00, 2.05)[c]
Protective factors		
Has close friends (base = none)	1.05 (0.51, 2.17)	–
Peer support	1.02 (0.79, 1.31)	–
Parental supervision	0.99 (0.68, 1.45)	–
Parental connectedness	0.93 (0.70, 1.25)	–
Parental bonding	0.76 (0.60, 0.98)[c]	0.92 (0.69, 1.23)
School attendance	0.70 (0.54, 0.91)[b]	0.92 (0.69, 1.22)

[a]$p < 0.001$; [b]$p < 0.01$; [c]$p < 0.05$; SES, socio-economic status; CI, confidence interval.

Discussion

The study found among a national sample of in-school adolescents in Brunei Darussalam an overall prevalence of ever having had sexual intercourse in the past 12 months of 11.3%, 13.2% among male, and 9.4% among female adolescents. This rate seems comparable with previous studies in Cambodia and the Philippines [5], but seems to be higher than in Malaysia [6] and South Korea [8] and much lower than in Thailand, Australia, Europe and Canada [7], [9], [10].

Among the students who ever had sex in this study, a high prevalence of sexual risk behaviours was found, including 50% who had early sexual debut (<14 years), 61.7% had not used a condom at last sex and 68.2% had not used other birth control at last sex. While among school-going adolescents in Australia and Europe much higher rates of condom and contraceptive use at last sex were observed [9], [10]. The unsafe sexual behaviour found in this study may be related to a lack of information about disease transmission or ignoring preventive behaviours [13]. Lim et al. [18] found in a survey among secondary school students in Brunei Darussalam poor awareness and knowledge about STIs. Although most students in secondary school received information about STIs from their teachers, they may not have been taught about the needed details [18]. This finding is of concern and puts the adolescents at risk for unintended pregnancy and STIs, including HIV.

Boys were more likely to have reported sexual intercourse and substance use (tobacco, alcohol, illicit drugs) than females. This predominance of boys in health risk behaviours has also been found in various other studies [6], [13], [19], [20]. Older adolescents in this study were more likely to have sexual intercourse than younger students, which conforms to other studies [11], [13], [21]. This finding is expected as it reflects the gradual sexual development among adolescents [13].

The study further showed that adolescents who engaged in sexual intercourse were also more likely to have used alcohol, tobacco and in bivariate analysis, drugs. These associations between substance use and ever having had sex have also been found in a number of previous studies in adolescents [12], [19], [22], [23], [24]. Several studies have described "clustering" of health risk behaviours such as alcohol, tobacco and drug use [9], [10], [13], [21].

The study found that psychosocial distress (have made a suicide attempt in the past 12 month, bullying victimisation and in bivariate analysis having been in a physical fight) was associated with ever had sexual intercourse. Crookston et al. [25] found in a cohort study among adolescents in Peru that those who were bullied during childhood were more likely to have initiated sexual relations during adolescents. Among US American high school students reporting recent fighting behaviour, were "1.6 times more likely to report sexual experience" [26]. Peltzer and Pengpid [12] found that mental distress (suicide plans, anxiety and loneliness) were associated with ever having had sex among adolescents in Pacific Island countries. Previous research among adolescents [12], [19], [24] has shown the interconnectedness between sexual behaviour, externalising factors such as alcohol and tobacco use and internalising factors such as having made a suicide attempt. Sexual and reproductive health strategies should incorporate substance use and psychosocial distress in their programmes [12], [19].

While previous studies [6], [11], [12], [22] found an association between a lack of positive peer relations, having no close friends and lack of parental support behaviour and adolescent sexual behaviour, this study only found in bivariate analysis that parental bonding was protective of having had sexual intercourse. School attendance was found to be protective from having had sexual intercourse in previous studies [26], while in this study was only found in bivariate analysis.

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Study limitations

The study only included adolescents who were attending school, which is not representative of adolescents in the whole country. The questionnaire was self-completed, and biased responses may have been possible, e.g. sexual behaviour may have been underreported, especially among females. As the data were based on a cross-sectional survey, no causality inferences can be made.

Conclusion

The study estimated the prevalence sexual behaviour among adolescents in Brunei Darussalam. We suggest that efforts to control adolescent alcohol and tobacco use and psychosocial distress may have an impact on adolescent sexuality.

Acknowledgements

We thank the World Health Organization and the Centers for Disease Control and Prevention for making the data publicly available. We are also grateful to the country coordinator Lubna binti Haji Abdul Razak, Ministry of Health, Bandar Seri Begawan, Negara Brunei Darussalam Sulueti Duvaga for collecting the GSHS data. The government of Brunei Darussalam and the World Health Organisation did not influence the analysis nor did they have an influence on the decision to publish these findings.

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