

# Correlates of Sexual Activity and Inconsistent Condom Use Among High-school Girls in Dominica

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## ABSTRACT

**Objective:** To determine factors associated with sexual activity and inconsistent condom use among high-school girls in Dominica.

**Methods:** A cross-sectional study was conducted at five high-schools in Dominica in 2000 to assess behaviour that may put high-school girls at risk for HIV. The main outcome variable, sexual activity, was defined as vaginal or anal sex, and inconsistent condom use defined as none to infrequent condom use. The convenience sample consisted of 204 girls (median age 16 years).

**Results:** Forty-one per cent (41%) of girls reporting at least one episode of sexual activity. Sexual intercourse was associated with past sexual coercion (OR = 7.2, 95% CI 2.4, 21.8), oral sex (OR = 8.0, 95% CI 3.0, 21.0) and smoking marijuana (OR = 8.2, 95% CI 2.9, 23.0). Among sexually active girls, 59% were inconsistent condom users. Variables associated with inconsistent condom use were being coerced (OR 2.8, 95% CI 0.9, 8.2) and low socio-economic status (OR 3.3, 95% CI 1.1, 9.6).

**Conclusion:** Sexual activity and inconsistent condom use occur frequently among high-school girls in Dominica. Therefore, strategies directed at delaying the onset of sexual activities such as providing accurate and age-appropriate information on sexuality in the context of the economic and social conditions of their daily lives, and increasing condom use are important in HIV prevention in this population.

# Correlatos de la Actividad Sexual y el uso no Sistemático del Condón Entre las Jóvenes de la Escuela Secundaria en Dominica

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## RESUMEN

**Objetivo:** Determinar los factores asociados con la actividad sexual y el uso no sistemático del condón entre las estudiantes de Secundaria en Dominica.

**Métodos:** Se llevó a cabo un estudio transversal en cinco escuelas secundarias en Dominica en el año 2000 a fin de evaluar conductas que pueden poner a las estudiantes de Secundaria en riesgo de adquirir el VIH. La principal variable de resultado fue la actividad sexual definida como sexo vaginal o anal, y el uso no sistemático del condón fue definido como uso poco frecuente o no uso en lo absoluto del condón. La muestra de conveniencia consistió en 204 muchachas (16 años de edad mediana).

**Resultados:** El cuarenta y un por ciento (41%) de las estudiantes reportaron al menos un episodio de actividad sexual. La relación sexual estuvo asociada con coerción sexual en el pasado (OR = 7.2, 95% CI 2.4, 21.8), sexo oral (OR = 8.0, 95% CI 3.0, 21.0) y el fumar marihuana (OR = 8.2, 95% CI 2.9, 23.0). Entre las muchachas sexualmente activas, 59% no eran usuarias sistemáticas del condón. Las variables asociadas con el uso no sistemático del condón fueron el actuar bajo coacción (OR 2.8, 95% CI 0.9, 8.2) y el bajo nivel socio-económico (OR 3.3, 95% CI 1.1, 9.6).

**Conclusión:** La actividad sexual y el uso del condón no sistemático ocurren con frecuencia entre las estudiantes de secundaria en Dominica. Por lo tanto, las estrategias dirigidas a retardar el comienzo

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*de las actividades sexuales, tales como brindar información exacta y apropiada a la edad sobre la sexualidad en el contexto de las condiciones económicas y sociales de sus vidas diarias, y el uso creciente del condón, son importantes en la prevención del VIH en esta población.*

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## INTRODUCTION

The Caribbean region has the second highest prevalence of HIV in the world (1). In some islands, those aged 15–29 years make up as much as 41.8% of the total AIDS cases (2). In the region in 2000, young people represented 24% of all AIDS cases with those 15–19 years constituting 2%, those 20–24 years, 7% and those 25–29 years, 15% (2). In Dominica, of the 262 diagnosed AIDS cases up to June 2003, 26 were between the ages of 15–24 years and 96 were between 25–34 years (3). Given the relatively long incubation period for the disease and the low rate of intravenous drug use in the region (4), it is possible that many of these individuals were infected through sex during their high-school years.

Adolescents may be more vulnerable to HIV due to activities that characterize adolescence such as sexual exploration with multiple sexual partners and frequent new sex partners, and experimenting with drugs (5–7). Additionally, many people in the region have strong religious beliefs disapproving condom use and this may hamper sexual education programmes (8). Further, sexual coercion especially by older men is a risk factor for HIV for girls in the Caribbean (8). There are few empirical studies looking at the sexual activities of Caribbean youth, particularly among girls. There is a need to know their specific sexual practices and to find out what factors make them vulnerable to HIV.

## METHODS

Dominica is an English-speaking island in the Caribbean region. The majority of students can be found in the area including and surrounding the capital Roseau and the North-eastern district. As high-schools provide an accessible, literate population of youth, six high-schools within a geographically convenient location and large school catchment area, were invited to participate in the cross-sectional survey. Two classes from each school were selected for the survey but this criterion was modified when one school rejected the survey due to its content on sexuality and when fewer than the expected number of students were registered per class. The project was submitted to the Ministry of Education in Dominica for ethical approval and for permission to carry out the study. However, school participation was voluntary.

In November 2000, the short self-administered questionnaire was filled out in the classroom during regular school hours. Students were informed that the survey was not an examination and participation was voluntary. They were told that they could refuse to complete the questionnaire without any repercussion from the school authorities. Further, they were asked not to include any personal identifiers on the questionnaire, refrain from conversing with others and

to keep their response private. In addition, they were asked to skip any question that they did not understand or did not feel comfortable in answering. Teachers helped in collecting the survey but did not circulate while the survey was being conducted.

Most questions were of the “multiple choice” type, usually with a maximum of four possible responses but there were a few yes/no questions. Variables of interest collected and reported included demographics, condom knowledge, sexual practices, knowledge and perceptions of, and attitudes towards HIV/AIDS. Specific information on high-risk behaviour for HIV such as types of sexual practice, number of sexual partners and condom use, was requested. Information on previous sexually transmitted infections (STI), drug use and sexual coercion was solicited.

Sexual activity was defined as any anal or vaginal sexual intercourse. Consistent condom use was defined as reporting condom use “all the time” or “most of the times” during lifetime sex whereas inconsistent condom use was defined as never having used condoms or using them once or occasionally during penetrative sex. Using health promotion and harm reduction principles, it is unrealistic to define consistent condom use as 100% condom use for this group of young people who have just begun experimenting with sex. Further, in this group of young people, many individuals are vulnerable and less equipped to deal with sexual negotiations.

Data analyses were done with SAS® 8.0 for Windows and the frequency of sexual intercourse and consistent condom use were calculated. Chi-square or Fisher’s exact tests were conducted to test for the association of variables to sex and to condom use, respectively. As the sample size was small and the number of sexually active participants even smaller, sexual intercourse defined as “any sex while in high-school”, was tested rather than “sex before the age of 15 years” in logistic regression models. Significant variables in the bivariate analyses were entered into separate multivariate analyses, for each dependent variable, and age was kept in the models. To test for trends by age in sexual activity or condom use, we used the Cochran-Armitage test. Four age groups were formed as follows: 15 years old or younger; 16/17 years; 18 years and greater than 18 years.

## RESULTS

Ninety-five per cent (211/222) of the questionnaires were returned and seven questionnaires were discarded since they were incomplete leaving a total of 204 useful questionnaires. Table 1 shows the socio-demographic characteristics of the girls in the sample. The sample was comprised of mostly upper year (Form V) students (90%). Forty-one per cent

Table 1: Demographic and sexual characteristics of high-school girls in Dominica who took part in a cross sectional survey in 2000 (n = 204)

Participant characteristic	Girls n = 204 <sup>a</sup>	%
Age (years)		
13	2	1.0
14	3	1.6
15	34	17.6
16	61	31.6
17	56	29.0
18+	37	19.2
Grade		
< Grade 12 (< 5 <sup>th</sup> form)	20	9.8
Grade 12 (5 <sup>th</sup> form)	184	90.2
Residence		
Urban	96	50.5
Rural	94	49.5
Religion		
Catholic	89	44.9
Protestant	109	55.1
Ever had penetrative sex		
No	116	58.9
Yes	81	41.1
Condom use <sup>b</sup>		
Never	26	32.5
Few times	35	43.8
Often/Most times	19	23.8
Ever had anal sex		
No	168	94.6
Yes	5	2.9
Ever had same sex activities		
No	192	94.6
Yes	11	5.4
Ever had oral sex		
No	135	75.8
Yes	43	24.2
Age of 1 <sup>st</sup> sexual activity (years)		
12 or younger	3	3.8
13 to 15	28	35.9
Over 15	47	60.3
Number of sexual partners		
1	36	48.7
2 – 5	28	37.8
> 5	10	13.5
Marijuana smoking (lifetime)		
No	151	79.9
Yes	38	20.1
Coerced <sup>c</sup>		
No	148	76.3
Yes	46	23.7
Older partner <sup>d</sup>		
No	158	88.3
Yes	21	11.7
Unwanted touching (lifetime) <sup>b</sup>		
No	113	60.4
Yes	74	39.6
How often touched		
Once	29	39.2
2 or more times	45	60.8

<sup>a</sup> Numbers do not always add up to 204 due to missing data.

<sup>b</sup> This analysis was restricted to sexually active subjects.

<sup>c</sup> Coerced refers to the question: Were you ever forced or coerced into having sex?

<sup>d</sup> Sexual partner who was at least 5 years older

<sup>e</sup> Being touched in a sexual place or made to touch someone there when you did not want to.

(81/197) of the girls reported previous sex. Over half of the girls who had their sexual debut had experienced sex with more than one sexual partner and 12% had been with a partner who was at least five years older. With respect to condom use, 33% of those who were sexually experienced (n = 80, data missing for one girl) had never used a condom. Five (3%) girls had engaged in anal sex and 43 (24%) had experienced oral sex.

Table 2 compares the characteristics of girls who had experienced penetrative vaginal intercourse irrespective of

Table 2: Comparison of the characteristics of sexually experienced and inexperienced high school girls in Dominica in 2000 (n = 196)

Participant characteristic	Sexually inexperienced n = 116	%	Sexually experienced n = 80	%	p-value
Age (years)					
≤ 15	25	22.7	9	11.8	
16/17	74	67.3	43	56.6	
18	7	6.4	16	21.1	
Over 18	4	3.6	8	10.5	0.0019
Oral sex					
No	97	91.5	33	49.3	
Yes	9	8.5	34	50.5	< 0.0001
Grade					
Grade 12 (5 <sup>th</sup> form)	104	89.7	75	93.8	
< Grade 12 (< 5 <sup>th</sup> form)	12	10.3	5	6.2	0.32
Residence					
Urban	56	50.5	39	54.2	
Rural	55	49.5	33	45.3	0.62
Marijuana use (lifetime)					
No	102	92.7	42	58.3	
Yes	8	7.3	30	41.7	< 0.0001
Coerced <sup>a</sup>					
No	99	91.7	45	57.7	
Yes	9	8.3	33	42.3	< 0.001
Unwanted touching (lifetime) <sup>d</sup>					
No	80	74.8	29	39.2	
Yes	27	25.2	45	60.8	< 0.0001
Parent/Guardian abuse					
No	80	74.8	29	39.2	
Yes	39	35.5	46	59.0	0.002
Can prevent AIDS <sup>e</sup>					
No	11	9.7	15	19.0	
Yes	103	90.3	64	81.0	0.07

Note: Numbers do not always add up to 196 due to missing data.

<sup>a</sup> Coerced refers to the question: “Were you ever forced or coerced into having sex?”

<sup>b</sup> Being touched in a sexual place or made to touch someone there when you did not want to.

<sup>c</sup> Believe that one can prevent oneself from getting AIDS

current sexual activity to those who were inexperienced. Among those who had not had vaginal sex, nine (9%) had experienced oral sex. Sexual coercion, which could include oral sex, was more often experienced by those who had already experienced penetrative sex (42% vs 8%). Sexually active girls were more likely to have smoked marijuana ( $p < 0.0001$ ), been physically or sexually abused ( $p = 0.002$ ) and to have experienced unwanted sexual touching ( $p < 0.0001$ ). Girls' attitude towards HIV, grade or urban/rural residence

was not associated with sexual activity. A test for trend (using four age groups: 15 years old or younger; 16/17 years; 18 years and greater than 18 years) showed that with increasing age, girls were more likely to experience sex ( $p = 0.0002$ ). Although not statistically significant, a high proportion of girls believed that the pill could prevent HIV and that condoms may be reused.

Table 3 compares consistent condom users to inconsistent condom users. Consistent condom use is defined as

Table 3: Factors associated with condom use amongst high school girls involved in penetrative sexual activities in Dominica in 2000 (n = 73)

Participant characteristic	Inconsistent n = 40		Consistent n = 33		p-value
	n	%	n	%	
Age (years)					
# 15	6	16.2	3	9.4	
16/17	22	59.5	16	50.0	
18	7	18.9	8	25.0	
>18	2	5.4	5	15.6	0.40
Grade					
Grade 12 (5 <sup>th</sup> form)	36	90.0	32	97.0	
< Grade 12 (5 <sup>th</sup> form)	4	10.0	1	3.0	0.27
Residence					
Urban	19	52.8	19	61.3	
Rural	17	47.2	12	38.7	0.48
Physical abuse					
No	15	39.5	10	30.3	
Yes	23	60.5	23	69.7	0.42
Coerced <sup>a</sup>					
No	19	47.5	22	68.8	
Yes	21	52.5	10	31.3	0.07
Unwanted touching (lifetime) <sup>b</sup>					
No	12	31.6	13	43.3	
Yes	26	68.4	17	56.7	0.32
Believe in abstinence <sup>c</sup>					
No	27	71.0	15	50.0	
Yes	11	29.0	15	50.0	0.08
Low income (parents not owning a vehicle)					
No	24	60.0	13	39.4	
Yes	16	40.0	20	60.6	0.08
Know where to find condoms <sup>d</sup>					
No	10	27.8	2	6.5	
Yes	26	72.2	29	93.5	0.02
Believe condoms can be reused <sup>e</sup>					
No	37	92.5	29	90.6	
Yes	3	7.5	3	9.4	0.77

Note: Numbers do not always add up to 73 due to missing values.

Inconsistent condom use - never reported /never use or used once or a few times

Consistent condom use - often or always used condoms

<sup>a</sup>Coerced refers to the question: "Were you ever forced or coerced into having sex?"

<sup>b</sup>Being touched in a sexual place or made to touch someone there when you did not want to.

<sup>c</sup>The question was: Abstinence (not having sex) is the only way of not getting AIDS.

<sup>d</sup>Knowing at least one place where condoms can be procured.

<sup>e</sup>Once used for sex, condoms may be washed and reused.

condom use "all the time" or "most of the time" for sexual intercourse. Those who were aware of places where condoms could be procured ( $p = 0.02$ ) were more likely to use condoms. Conversely, having experienced sexual coercion and the fact that parents did not own a vehicle (a proxy measure for socio-economic status) had borderline association with inconsistent condom use. Grade, urban/rural residence and physical abuse were not associated with condom use. The test for trend showed that with increasing age, girls were more likely to use condoms ( $p = 0.05$ ).

### Multivariate analyses

The variables associated with penetrative sex among girls, controlling for age, were being coerced (OR 7.2; 95% CI 2.4, 21.8), smoking marijuana (OR 8.2; 95% CI 2.9, 23.3) and having had oral sex (OR 8; 95% CI 3.0, 21.0). In a separate logistic regression analysis controlling for age, variables associated with inconsistent condom use among girls were: being sexually coerced (OR 2.8, 95% CI 0.9, 8.2) and parents not owning a vehicle (OR 3.3, 95% CI 1.1, 9.6).

### DISCUSSION

High-school girls in Dominica, like their peers in other English-speaking Caribbean countries, experience sex at an early age, although doing so at a more advanced age than boys (9, 10). The Ministry of Health in Dominica reported that 20% of Dominicans had their first penetrative sex by the age of 12, increasing to 70% by age 15 (3). In an earlier survey done in Barbados, 19% of the high-school girls reported being sexually active (10). One study conducted among students 10–18 years old from nine English-speaking Caribbean countries reported a lower rate of sexual activity at 34% (4). The difference between that study compared to ours is due to the older age of the girls in the present sample.

Having 'ever smoked' marijuana was strongly associated with sexual intercourse in the present study. Waldron *et al* reported that 3.5% of their sample had used marijuana, cocaine or other substances (10). The higher rate of marijuana use in our study may be accounted for by the older age of the sample. Marijuana use may cause mental slowing and feelings of heightened sexual arousal (11). As youth often smoke with peers, their inhibitions may be compromised, leading to an increased possibility of sexual activities (12). Intravenous and/or crack/cocaine drug use were not practised among girls in this sample.

Sexual coercion had an important association to sexual intercourse. Coercion may be overt or covert from peer pressure to non-consensual sexual touching. The high percentage of non-consensual sexual touching found in this study is also reflected by other surveys and reports done in the Caribbean region (4, 8). In PAHO's survey, physical and sexual abuses were associated with adolescent's sexual initiation (4). As many Caribbean societies uphold machismo, partner

sexual abuse is often not taken seriously (8). Another significant factor that may help to explain coercion and sexual intercourse is girl's relationship with older men (8). This study did not show this relationship, which may have been due to the small sample size or because high-school girls may not experience the same coercion as their out-of-school peers.

Studies have linked childhood sexual abuse to poor health outcomes including an increased risk for negative social and behavioural patterns that increase individuals risk for HIV. For example, one study in the US showed that women abused during childhood were more likely to have a sexually transmitted infection and to be involved in high-risk sexual practices (13). O'Donnell showed that early sexual initiators (before the age of 15 years) had often been involved in forced sexual activities in US urban minority youth (14).

Oral sex in itself may not be a factor influencing early intercourse but it may be in conjunction with it (15). Sexually experienced girls may be more inclined to explore other alternatives to penetrative sex (16) thus making these two practices closely associated. Increased oral sex practices have also been found to be associated with abuse and may be a result of it (13).

It was not surprising that girls who were coerced into having sex were less likely to have sex with a condom since girls' lack of control over this activity may preclude condom use (8). Physical or sexual abuse and coercion are related to poor condom use. Elze *et al* showed that abuse was associated with reduced condom use by 15–19 year old adolescents (17). Women who were abused during childhood were also more likely to report that their partner was abusive when negotiating condom use (13). Many girls do not have the skills to negotiate safe sex, especially with an older boyfriend (18). In this study, those whose parents owned a vehicle and were presumably in a higher socio-economic level were less likely to be inconsistent condom users.

Although abstinence was not important in the multivariate analysis, there was a borderline association with condom use in bivariate analyses. Promotion of abstinence alone will not delay the onset of sexual activities (19) although this is often the educational focus of parochial schools. The present results showed that girls were misinformed about condom use and the role of the contraceptive pill. This is important since girls receive "Family Life Education" in high-school, which includes information on abstinence but contraception is often omitted or proscribed. As condoms are highly effective in reducing STIs and HIV (20), it is important that their use be emphasized among sexually active adolescents.

Lack of confidentiality is also important as in many communities condoms may not be readily available. Hence sexual encounters may be negotiated without condoms. This study did not explicitly test condom acquisition behaviour of adolescents but rather whether students knew where con-

doms could be found. Cost in condom acquisition may influence adolescent's decision to use condoms (21).

There are limitations to this study that reduce its generalizability to the general youth population. Ideally, random sampling of students should have been employed. However, due to structural constraints this was not possible and we opted to use a quasi-random sampling method. Missing responses to questions on sexuality and age indicate a need for innovative methods for soliciting such sensitive information. Generally, students responded well to the questionnaire as they were provided with a manilla envelope to guard the confidentiality of their response. This is attested by the high participation rate. As in any population, and because of cultural proscription, girls may underreport their sexual behaviour but condom use may go in either direction.

As many Dominican high-school girls are sexually active, activities that promote delaying sex are needed as it enables the development of sexual negotiating skills. Girls need accurate and age-appropriate information on sexuality and contraception before they become sexually active. Programmes must be youth-centred and focus on the reality of the economic and social conditions of their daily lives. For those who are already sexually active, sexual coercion and low socio-economic status must be addressed by the state and include adequate law enforcement and community sensitization on the factors that prevent girls from using condoms. As the first study focussing on sexual risk behaviour of high-school girls in Dominica, the findings can be used as a baseline for measuring trends in sexual behaviour among high-school girls in Dominica and as a springboard to support strategies aimed at improving the sexual health of girls in the region.

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