

ORIGINAL ARTICLE

# HIV-risk behaviours of American spring break vacationers: a case of situational disinhibition?

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**Summary:** Young adults are at high risk for acquiring STDs/HIV due primarily to multiple sex partners, unprotected sex, and substance use combined with sexual activity. Contranormative settings—such as the annual spring break vacation—provide ideal conditions for the potentially lethal interaction between alcohol, drugs, and sexual risk-taking. As a steadily growing form of youth travel and characterized by binge drinking, illicit drug use, and unsafe sexual practices, spring break has become a North American institution involving large numbers of travellers. In this study, the theory of interpersonal behaviour was used to explain college students' health-risk behaviours in the context of spring break and pre- and post-spring break surveys were used to examine casual sex and condom use behaviours. Multivariate analyses revealed peer influences, prior experiences with casual sex, alcohol consumption prior to sex, and impulsivity to be significant predictors of casual sex, while impulsivity and condom availability were significant predictors of students' use of condoms during casual sex.

**Keywords:** HIV-risk, casual sex, condom use, theory of interpersonal behaviour, spring break, American college students

## INTRODUCTION

Although, in the United States, STDs are tremendously widespread, severe and sometimes fatal, and cost the nation billions of dollars in healthcare annually, the majority of people are uninformed about their risks and ramifications—except for those involving HIV<sup>1,2</sup>. Yet, nearly five million Americans have sex and substance use habits that put them at high risk of contracting STDs as well as HIV/AIDS<sup>3-6</sup>. Paradoxically, while the majority of young heterosexual people do not believe they are personally at risk for HIV<sup>7</sup> teenagers and young adults are at high behavioural risk for acquiring most STDs and HIV/AIDS, primarily because they are more likely than other age groups to have multiple sex partners, to engage in unprotected sex, and to combine substance use with sexual activity<sup>5,6</sup>. Especially among youth, substance use has been linked with greater sexual risk-taking<sup>8-12</sup>. The magnitude of potential problems arising from the interaction of substance use and sexual activity

is quite alarming, particularly because these two behaviours peak at the same stage of life<sup>9,12,13</sup> and because psychoactive substances impede judgement and decisions involving sex and condom use<sup>14</sup>.

As risks specific to substance use and sexual behaviour—two of the most prevalent forms of health-risk behaviours among American youth<sup>15</sup>—reach epidemic proportions<sup>1,14,16</sup>, increased research attention has turned to young adults' health-risk behaviours and the contexts in which they occur. Substance use and sexual risk-taking often intersect in particular settings or situations. In fact, a great deal of substance use occurs in social contexts where sexual opportunity also exists<sup>9,17,18</sup>. Often, young people encounter unfamiliar peers at social gatherings and engage in unprotected sex while intoxicated<sup>5</sup>, putting themselves in grave danger for various health problems. Intoxication grants a period of 'time out' from social restraints<sup>9,18</sup> as well as an excuse for normally unacceptable behaviour. This condition is exacerbated by the interference of substances with young adults' judgement and the ability to foresee risks. Further, because individuals in general, and adolescents and young adults in particular, are not able to calculate risk very well, they

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underestimate their own vulnerability to risks. As a result, risky behaviours are likely to be clustered when their inherent risks are misperceived<sup>9</sup>.

When antinormative behaviours (i.e. binge drinking, drug use, casual sex) become the norm among participants, contexts that provide ideal conditions for the potentially lethal interaction between alcohol, drugs, and sex can be described as contranormative. These (contranormative) settings, which present opportunities for youth risk-taking and where similar behavioural patterns occur within normative frameworks that reject or contradict the dominant social and behavioural norms of day-to-day life, include raves/parties, fraternity/sorority gatherings, bars/pubs/clubs, carnivals, and various forms of pleasure travel—and, in particular, the North American spring break vacation<sup>19–22</sup>. In fact, in the case of pleasure travel participants view risky behaviours as the accepted norm and excuse various behaviours as being the result of the vacation experience<sup>23</sup>.

### Situational context for HIV-risk behaviours

Epidemiological studies have documented a strong relationship between travel and the spread of malaria, hepatitis, typhoid, and STDs<sup>24,25</sup>. While lifestyle influences the manifestation and upsurge of diseases through travel, it is the very space of the tourist resort that provides a conducive setting where personal and social codes are suspended, behavioural constraints are removed, inhibitions fade<sup>26</sup>, and subsequently travellers take extreme risks. Pleasure travel is even more likely to constitute the context for health-risk behaviours when travellers happen to be young adults who travel accompanied only by friends or other peers<sup>23</sup>. Considering that youth travel is the fastest growing component of leisure migration and that the prevalence of youth health risks (particularly related to substance use and sexual risk taking) constitutes a problem of pandemic dimensions<sup>27–29</sup> this tripartite relationship (youth, travel, risk-taking) has the potential to become an explosive public health hazard.

Recent studies<sup>30–32</sup> have found pronounced substance use and risky sexual practices among young adults, at rates considerably higher than in their home environments. Such high-risk behaviours were traced back to 'situational disinhibition' in settings that encourage 'sexual and emotional transience' as well as to 'liminality' (a sense of 'in-between-ness' involving a temporary loss of social bearings). Further, high-risk behaviours in these settings seemed to be strongly associated with situational factors, travellers' expectations of relevant experiences at the resort, social context, leisure lifestyles, as well as intentions for casual sex and excessive alcohol use while on vacation.

Spring break, as a steadily growing form of youth travel, has become a North American institution involving the annual movement of over two million young adults. Anecdotal impressions and journalistic reports, along with ethnographic and empirical studies reporting binge drinking, illicit drug use, unsafe sexual practices, fatal accidents, and even criminal violations, depict only the tip of the iceberg of spring-break hazards. Two small-scale studies, found incidence rates among Canadian and American beachfront spring breakers, for engaging in coitus with a new partner the day of meeting them ranging from 15% to 24% for men and from 13% to 21% for women, while 43% of those who had intercourse with a new partner did not always use condoms<sup>11,22</sup>. Further, intentions, prior experience with casual sex, peer influences, and situational conditions (a sexualized, rule-free, uninhibited spring-break environment)<sup>11,22,23</sup> were found to be the most critical factors in explaining risky behaviour for both sexes. Moreover, 51–75% of men and 39–57% of women reported either being drunk or engaging in binge-drinking contests while 16% of men and 8% of women reported using drugs<sup>22</sup>. Considering the magnitude of its health repercussions, spring break has inexplicably received scant attention by public-health researchers. The need for understanding the traditional spring-break vacation setting becomes even more imperative because similar phenomena are observed at other youth-dominated, contranormative, settings.

### CONCEPTUAL FRAMEWORK

In this broader framework, several theoretical perspectives (i.e. health belief, problem behaviour) have been instrumental in gaining insight into health-risk behaviours exhibited during spring break<sup>33–35</sup>. The theory of interpersonal behaviour (TIB), however, most efficiently encapsulates the variables of situational conditions and prior experience that are indispensable to understanding the spring-break context.

TIB suggests that intentions are influenced by cognition, affect, social determinants, and personal normative beliefs—each carrying a weight indicating its relative influence. Cognition represents the subjective analysis of the advantages and disadvantages of performing a particular behaviour. Affect is the emotional response of a spring breaker to the thought of demonstrating a certain behaviour. Social determinants, which include normative beliefs and beliefs in specific social roles, result from a subjective analysis of how others think about a certain behaviour or what is appropriate for a member of a group. Personal normative beliefs refer to one's personal standards or moral codes (Figure 1).

Situational conditions representing the 'disinhibiting nature' of the spring-break setting either facilitate or impede behaviours. Prior experience

denotes the strength of established behaviours. Spring-break expectations involve the anticipation for whether spring-break experiences or situations will facilitate or hinder certain behaviours. Peer influence encompasses pacts (conceptualized as agreements or promises between peers to get involved in or avoid certain activities) and role modelling (spring breakers' perceptions of their friends' engagement in certain activities). HIV-risk behaviour involves casual, unprotected sex, often while intoxicated in this study, casual sex refers to 'sex with someone new one meets while on spring break' and unprotected sex refers to casual sex during spring break without condom use (although substance use prior to sex is a component of HIV-risk behaviour, in this study, it was treated as a dimension of situational conditions). Within this framework, this paper presents findings from the first comprehensive study that focuses on health-risk behaviours of US spring breakers. At the same time, this study extends the works of Maticka-Tyndale and colleagues with Canadian spring breakers<sup>11,22</sup> and Australian 'schoolies' by examining the critical role of alcohol abuse in explaining other health-risk behaviours. In particular, this study (a) examines how cognitive and affective attitudes, personal normative beliefs, social determinants, spring-break expectations, peer influence, prior experience, behavioural intentions, and situational conditions predict HIV-risk behaviours involving casual and/or unprotected sex and (b) proposes preventive intervention strategies.

**METHODS**

**Design**

A cross-sectional survey of 534 undergraduates enrolled in randomly selected general education classes from two US universities was used to test the efficacy of the modified TIB. Students with plans for a spring-break vacation (at a destination rather than their home town) completed pre-break surveys that asked about their substance use and sexual histories, past spring break experiences, expectations for their upcoming trip, and intentions for substance use, sexual activity, and condom use. Upon their return, surveys were administered to the same students that asked about their actual spring break behaviours and activities, focusing in particular on substance use, sexual activity, and condom use.

In developing the survey, established instruments and relevant questionnaires on drug and alcohol use, sexual behaviour, condom use, and other health-risk behaviours<sup>22,36-38</sup> were consulted and portions were adopted in an expanded or modified manner. Although the two parts of the survey were primarily guided by TIB, which provides structure for each concept, numerous survey items were elicited from preliminary discussions with students. Elicitation research was conducted, as per TIB's guidelines, with students who had travelled to a spring-break destination within the past two years. Semi-structured, individual, and focus group interviews

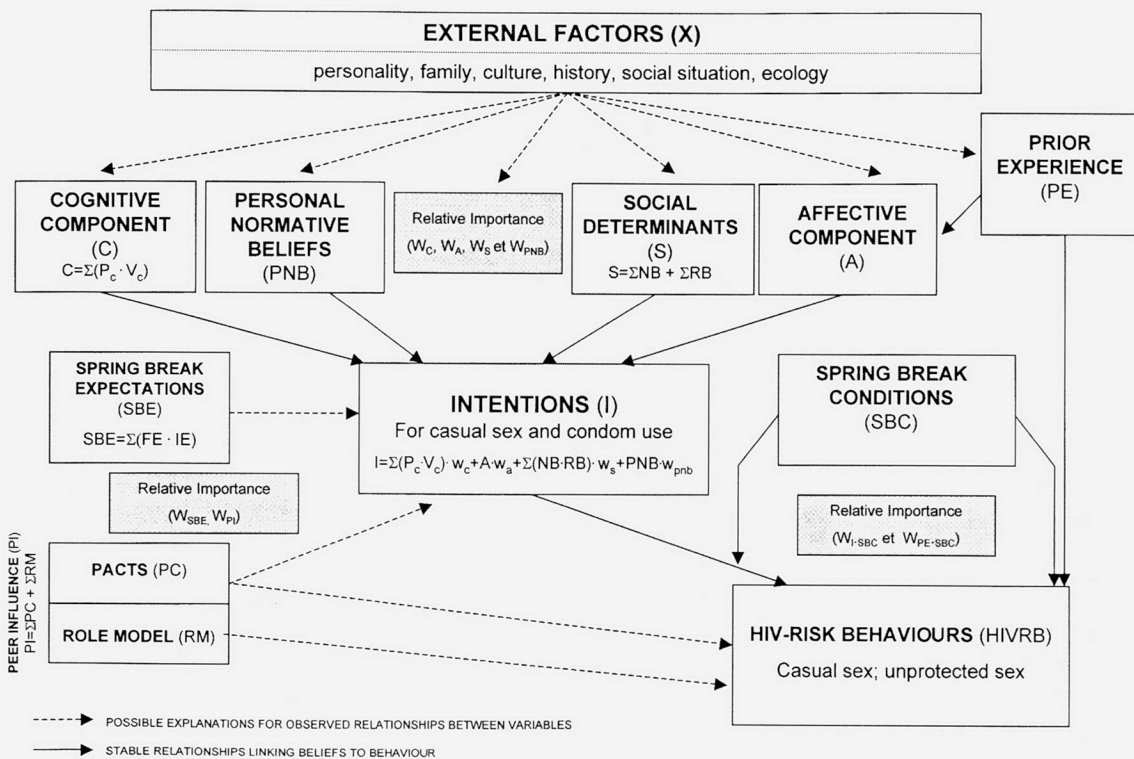


Figure 1. Conceptual model for HIV-risk behaviours on spring break

were used to elicit concepts and determine appropriate language.

Both surveys were refined in a two-week test-retest procedure with a sample of 15 male and 15 female undergraduates who had vacation plans for the upcoming spring break. Items that did not meet the established criteria for test-retest reliability (Pearson's  $r > 0.75$ ) or that had a weak correlation with other items measuring the same construct (evaluated using Cronbach's  $\alpha$ ) were excluded from the final version<sup>39</sup>. The specificity of items used in the scalar measures was tested using confirmatory-factor analysis to ensure that items loaded only on their designated constructs. Construct validity was assessed by examining correlation matrices to verify that scalar measures correlated with criterion factors (gender, age, prior coital experience, prior condom use) in a manner consistent with similar studies. Several clusters such as cognitive and affective attitudes showed high Cronbach  $\alpha$  and factor analysis clearly indicated that there were distinct dimensions.

### Constructs

Cognitive attitude was measured with semantic-differential scales as students rated their evaluation of the consequences of 'sex with someone they meet for the first time on spring break' or 'not using a condom when they have sex with someone they meet for the first time on spring break' (Cronbach's  $\alpha = 0.80$ ).

Affective attitude was measured by semantic-differential scales as spring breakers rated their feelings about casual sex and condom use (Cronbach's  $\alpha = 0.78$ ).

Social determinants represent a composite of normative and role beliefs. Normative beliefs were measured by Likert-type scales as spring breakers indicated the extent of their beliefs that each listed referent other would approve or disapprove of casual or unprotected sex (Cronbach's  $\alpha = 0.83$ ).

Role beliefs were measured by Likert-type scales with items like 'it's OK for someone young like me to have sex with someone I meet on spring break' as respondents were asked the extent of their beliefs that certain behaviours are appropriate for someone with their status or position (Cronbach's  $\alpha = 0.85$ ).

Personal normative beliefs were measured using Likert-type scales with items such as 'it would be against my values to have sex with someone I meet on spring break' or 'I will feel guilty if I don't use a condom' as students were asked about their moral obligation or responsibility to perform or avoid certain behaviours (Cronbach's  $\alpha = 0.79$ ).

Prior experience was measured with questions such as 'on your last spring-break vacation, did you have sex with someone you just met?' or 'the last time you had sex with someone you just met that same day/evening, did you use a condom?' (Cronbach's  $\alpha = 0.77$ ).

Spring-break expectations. The elicitation phase identified 10 situations and experiences that had occurred during past spring breaks that were believed to either facilitate or impede casual or unprotected sex (i.e. partying, being in a 'break-loose' mood, drinking alcohol, getting drunk, 'dirty-dancing,' binge drinking, picking up someone with the intention to have sex). The perceived degree of influence of each situation on respondents' participation in or avoidance of casual or unprotected sex was measured with Likert-type scales with items such as 'I would have sex with someone new I meet on spring break if it seemed like everyone was having sex.' In addition, the frequency with which students expected to be in certain situations was measured with items such as 'I will be pressured to have sex' or 'If I have sex, my sexual partner(s) will want to use a condom' (Cronbach's  $\alpha = 0.94$ ).

Peer influences represent a composite of pacts and role modelling. Pacts were measured with a series of questions (yes, no), about whether or not students made promises or agreements that they would/would not have sex with someone new (Cronbach's  $\alpha = 0.87$ ) and as an individual measure. Role modelling was measured using several multiple-response questions (none-almost all) as students were asked to report the proportion of their friends that had participated in sexual risk-taking while on spring break with questions such as 'among your closest friends, how many had sex with someone they just met on spring break?' or 'among your closest friends, how many used condoms when they have sex with a new partner?' and through Likert-type scales with items such as 'my friends used condoms' (Cronbach's  $\alpha = 0.81$ ).

Situational conditions represent the spring-break environment, its sexualized atmosphere, and associated elements that facilitate or impede HIV-risk behaviours. Facilitators of or barriers to casual sex were operationalized as students' level of participation in spring break activities (i.e. 'wet T-shirt' or binge-drinking contests) and perceptions that everyone was having sex/drinking, peer/social pressure to have sex, substance use (primarily alcohol consumption) prior to sex, impulsivity in decisions involving sex, and perceived health consequences. Facilitators of condom use were operationalized in terms of availability/accessibility of condoms, sex partner's request to use a condom, or having a new partner (which increases likelihood of using condoms). Barriers to condom use included substance use prior to sex, sexual arousal (or being in the 'heat of the moment'<sup>23</sup>), reliance on other risk-reduction strategies (i.e. learning about partner's sexual history, partner's physical appearance of health), and having unanticipated sex (operationalized as impulsivity in decisions involving casual sex). Situational conditions and associated facilitators and barriers of casual sex and condom use were measured using Likert-type scales with items such as 'I had sex

with someone I met on spring break because . . . it seemed like everyone was having sex/I was sexually aroused/I was drunk' or 'I used a condom with someone I met on spring break because . . . I had condoms with me/I was drunk/I was sexually aroused/my partner wanted me to use a condom/I was worried about STDs/HIV' (Cronbach's  $\alpha=0.72$ ). Further, impulsivity was measured with Likert-type scales using statements such as 'I behaved impulsively when it came to having sex with someone I just met on spring break.' Sexual partners were determined with a multiple item question with responses ranging from 'relationship partner, someone I knew before spring break, another student/another vacationer/a local resident I met during spring break.'

Intentions for casual sex and condom use were measured with Likert-type scales with items such as 'I will have sex with someone I meet on spring break,' 'I will experiment sexually,' and 'I will use a condom.' They were the composite of responses to a series of questions on intentions for potentially HIV-risk behaviours.

HIV-risk behaviours (actual on-site) involving casual sex and unprotected sex/condom use were measured using a Likert-type scale with items such as 'I had sex with someone new that I met on spring break,' 'I experimented sexually,' 'I had sex as a result of drinking/drugs,' and 'I used/did not use a condom.' In addition, multiple-item questions were asked regarding students' casual sex encounters, the number of partners they had, if they were intoxicated prior to sex, and how often they used condoms. Behaviour was a composite of responses to a series of questions on casual or unprotected sex.

### Data analysis

Items extracted from the surveys to answer our research questions were tested for reliability with Cronbach's  $\alpha$  and construct validity using factor analysis. Variables were not narrowly operationalized, instead, constructs were regarded as 'open' and triangulated by different observed variables<sup>40</sup>, which in turn were identified as indicators to the constructs, then added, deleted, and rewritten based upon their internal consistency and unidimensionality using Cronbach's  $\alpha$  and factor analysis. Since a factor model may be under-identified when there are too few observed items, some observed items were treated as separate independent variables instead of being collapsed into composite scores, yet these observed items represent abstract constructs. In this study, five clusters of indicators were found to have Cronbach's  $\alpha$  of 0.70 or above<sup>41</sup>. In addition, items in those clusters were loaded into single dimensions according to the rule of min-eigenvalue  $\geq 1$ , as well as the inflection point indicated in the scree plots. Within this framework, ordinary least squares (OLS) regressions were computed to

estimate the direct effect of other variables on the outcome variables. Regression assumptions such as the absence of multicollinearity, homogeneity of error variances, normality of residuals, and linearity were checked; no serious violations of assumptions were found. Items relating to latent constructs were combined as composite scores. Their reliability in terms of their internal consistency was evaluated by Cronbach's  $\alpha$  while their dimensionality was examined by factor analysis. Items with low alphas were used as individual predictors in the regression analysis. Factor analysis was applied to confirm the factor structure. Scales, which did not imply a single dimension, were separated as subscales.

## RESULTS

### Profile of spring breakers

Respondents comprised 321 females and 211 males; with 96% between the ages of 18–25 and over 83% of them, white. Nearly all (97%) identified themselves as heterosexuals and over 32% reported being in a steady relationship. More males (43%) compared with females (36%) went on their first spring break during the year of the study. Over 61% of males and 43% of females went on vacation with friends, while about 9% of males and 12% of females went with their relationship partners.

### Pre-spring break survey: past experiences and intentions

#### *Past substance use, sexual history, and condom use*

Over half of all spring breakers (64% males, 51% females) got drunk during their previous one-week break while about 30% of males and 19% of females reported experimenting with drugs (i.e. marijuana, cocaine, ecstasy as most often mentioned). Significantly more men (21%) than women (5%) reported having sex with someone new during their previous break on the day they met them; from these respondents, 12% of males and over 4% of females reported having two or more partners. However, 26% of males and nearly 35% of females failed to use a condom on their last sexual experience with someone they had just met on their previous spring break. Nearly 50% of the males and 41% of the females reported having consumed alcohol just prior to sex in the past while about 48% of all respondents reported regretting their sexual experiences immediately following alcohol consumption (Table 1).

#### *Spring break motives*

Opportunities for drinking (78% males, 46% females), sex (74% males, 31% females), and trying drugs (24% males, 9% females) emerged as significant motives for going on spring break. Among students' other motives were escape from stress and boredom (95% males, 97% females), finding adventure (91% males, 81% females),

Table 1. Past spring break experiences and intentions for upcoming spring break

Past experiences, motives, intentions, and situational expectations	Males (n=211)	Females (n=321)
Alcohol use		
‘I got drunk on my last spring break vacation’	64.0%*	50.9%
‘I drank until I passed out’	38.6%*	29.2%
‘I drank alcohol just prior to having sex on my last spring break vacation’	49.5%	41.2%
Casual sex and condom use		
‘I had sex with someone new on my last spring break vacation the day I met them’	21.1%***	4.9%
‘I used a condom during last sexual experience’	58.4%*	46.1%
‘I used a condom during last sexual experience with someone I just met’	73.8%	65.1%
‘I took condoms with me on my last spring break’	43.1%**	11.7%
Motives for going on spring break		
‘Sexual opportunities were important reasons for going on my last spring break vacation’	74.3%***	31.1%
‘Drinking opportunities were important reasons for going on my last spring break vacation’	78.2%***	46.2%
Intentions		
‘I will have sex with someone I meet on spring break’	28.0%***	2.8%
‘I will experiment sexually’	42.1%***	18.1%
‘I will use a condom’	71.6%***	52.2%
‘I will have condoms with me’	54.1%*	25.3%
‘I will use condoms if my partner wants me to’	70.8%	59.1%
‘I will (almost always or every time) drink alcohol before having sex’	72.0%	69.0%
‘I will (almost always or every time) use drugs before having sex’	25.5%	18.3%
Situational expectations		
‘I will be in a “break-loose,” “have fun” mood’	66.8%	61.5%
‘I will be pressured sexually’	24.8%*	23.3%
‘I would have sex with someone I meet on spring break if it seemed like everyone doing so’	33.2%***	9.3%
‘My judgement in using a condom might be influenced by alcohol’	45.6%	42.6%
‘My judgement in using a condom might be influenced by drugs’	25.4%	26.8%
‘Condoms will be available’	73.4%**	49.4%

\*Chi-square ( $P < 0.05$ ), \*\*Chi-square ( $P < 0.01$ ), \*\*\*Chi-square ( $P < 0.001$ )

finding a romantic relationship (37% males, 29% females), and ‘fitting in’ with their peers (26% males, 13% females). Further, spring-break destination choice was based on each destination’s potential for alcohol and sex—drinking opportunities (52%) followed by sexual opportunities (36%) afforded by the destination emerged as the most important factors in destination selection.

#### Spring break intentions and expectations

Students indicated their intentions to drink alcohol (68% males, 72% females), to get drunk (54% males, 51% females), expectations to drink to the point of passing out (22% males, 9% females), and intentions to experiment with drugs (19% males, 10% females) on their upcoming spring break. Further, students not only intended to experiment sexually (42% males, 18% females) and to have sex with someone new (28% males, 2.8% females), they also believed their sexual encounters would result from drinking (72% males, 69% females) or drugs (26% males, 18% females). Respondents stated that they would have sex with someone new (33% males, 9% females), or get drunk (54% males, 43% females) on spring break if everyone seemed to be doing the same.

Spring breakers anticipated being in a ‘break-loose,’ ‘have fun’ mood (67% males, 62% females)

but they also expected to be pressured sexually (25% males, 23% females). Nearly 72% of males and 52% of females intended to use a condom on their upcoming spring break, although smaller percentages intended to take condoms along (54% males, 25% females)—possibly because many (73% males, 50% females) expected condoms to be available at the destination. Students candidly expressed that they expected their judgement (involving condom use) to be impaired by alcohol (46% males, 43% females) or drugs (25% males, 29% females).

#### Post-spring break survey: sexual and substance use experiences

##### Drinking and sexual behaviour on spring break

Following spring break, students reported that they had ample opportunities for drinking (86% men, 79% women), sex (66% men, 63% women), and drug use (39% men, 27% women). Significantly more males (51%) than females (40%) reported they got drunk and reported they drank until they passed out (21% males, 7% females). Pre-vacation agreements (pacts) made with friends about substance use and casual sex emerged as strong indicators of risky vacation behaviour. Students reported having made pacts to get drunk (31%

males, 30% females), to have sex with someone new (15% males, 9% females), and to experiment with drugs (9% males, 4% females) on their vacation. About one-third of all students reported they had sex with someone they met on spring break. About 16% of males and 4% of females had two or more sexual partners they knew less than one week. Students reported that it seemed like everyone was drinking (50% males, 51% females) or that their friends were having sex (56% males, 59% females). Spring breakers also reported that often alcohol or drugs influenced their decisions involving sex. When asked about their alcohol use in connection with their sexual activities, 49% of men and 38% of women reported having sex as a direct result of drinking.

Even though large numbers of students reported either having condoms with them (41% males, 24% females) or the availability of condoms (63% males, 53% females), an alarming three-quarters of all

students reported never or rarely using a condom on spring break. In response to questions about situational influences on their decisions to use condoms during spring break, students reported their decisions were negatively influenced by alcohol (31% males, 32% females) or drug use (3% males, 5% females) just prior to sexual activity. Also worrisome is that 74% of males and nearly 88% of females reported never or rarely worrying about STDs/HIV. Finally, 68% reported regretting having sex after drinking and 10% following drug use (Table 2).

#### *Explaining casual sex*

Ordinary least squares was run with casual sex as the outcome variable. Predictors included intentions, prior experience, personal normative beliefs, affective and cognitive attitudes (including perceived health consequences), social determinants, situational expectations, situational conditions

Table 2. Sexual risk taking on spring break, facts and role modelling

Alcohol use, sexual activity, and condom use	Males (n=105)	Females (n=126)
Alcohol use		
'I had plenty of opportunities for drinking'	86.0%*	79.1%
'I got drunk'	51.3%***	39.7%
'I drank alcohol until I passed out'	21.4%**	7.3%
Amount of alcohol in one sitting		
None	23.9%	24.8%
1-2	20.6%	29.9%
3-4	13.0%	17.8%
5+ drinks	39.1%*	27.4%
Sexual activity		
'I had plenty of opportunities for sex'	65.8%	62.7%
'I experimented sexually'	74.0%**	23.0%
'I had sex with someone new I met on spring break'	29.7%	30.8%
'I behaved impulsively in having sex with someone new I met on spring break'	15.2%**	6.3%
'I had sex as a result of drinking'	49.3%	38.0%
Condom use		
'I never used a condom'	63.2%	67.5%
'I rarely used condoms'	12.0%	10.9%
'I sometimes used condoms'	3.4%	5.3%
'I often used condoms'	5.0%	8.2%
'I always used condoms'	16.0%**	8.0%
Influences on condom use		
'Condoms were available'	62.7%	53.2%
'I had condoms with me'	41.1%	23.9%
'My partner wanted to use a condom'	25.8%	22.5%
'I never/rarely worried about STDs/HIV'	74.0%	87.6%**
'I drank alcohol just before sex'	30.8%	32.1%
'I used drugs just before sex'	3.3%	5.1%
Number of intercourse partners student knew less than 1 week		
1	84.0%	95.7%
2-4	16.0%	4.3%
Pacts with friends		
'To have sex with someone new'	15.0%***	9.0%
'To get drunk'	30.8%	29.5%
Role modelling		
'Friends I went to spring break with were having sex with someone new'	56.0%	58.9%
'It seemed like everyone was having sex'	17.0%**	6%
'My friends were using condoms'	4.8%	7.3%

\*Chi-square ( $P < 0.05$ ), \*\*Chi-square ( $P < 0.01$ ), \*\*\*Chi-square ( $P < 0.001$ )

(impulsivity, substance use prior to sex, participation in spring break activities ['wet T-shirt' contests, binge drinking contests]), peer influences (pacts to have sex with someone new, role modelling for casual sex), and gender. Since there were many predictors in the model, multicollinearity was suspected and the variance inflation factor (VIF) was examined. Substance use showed a high VIF (7.54) relative to other regressors and was excluded from subsequent analysis. The maximum  $R^2$  (MAX  $R^2$ ) selection procedure was applied, following the deletion of eight outliers, in order to reduce the number of variables and obtain a parsimonious model. The MAX  $R^2$  procedure suggested an 8-variable model. The model ( $R^2=0.75$ ,  $F(8,26)=13.65$ ,  $P<0.0001$ ) indicated that drinking prior to sexual activity ( $P=0.0001$ ), impulsivity ( $P=0.0003$ ), peer influence ( $P=0.0054$ ), and prior experience ( $P=0.0241$ ) were significant predictors of casual sex. Another regression model was constructed using only these four significant predictors. In the second analysis ( $R^2=0.57$ ,  $F(4,123)=40.86$ ,  $P<0.0001$ ), only alcohol consumption prior to sex ( $P<0.00001$ ) and impulsivity ( $P<0.00001$ ) appeared to be significant predictors. Table 3 presents statistics from the restricted model, as a subset of variables selected by the MAX  $R^2$  procedure.

#### *Explaining unprotected sex/condom use*

A regression analysis was performed with unprotected sex/condom use as the dependent variable. Predictors included intentions for condom use, prior experience, cognitive and affective attitudes (including perceived health consequences), personal normative beliefs, social determinants, situational expectations, peer influences (pacts to have sex with someone new, role

modelling for sex/condom use), situational conditions (impulsivity, substance use prior to sexual activity, participation in spring break activities ['wet T-shirt' contests, binge drinking contests], availability of condoms, sex partners [relationship partner, new partner], pressure to use/avoid condoms by sex partner), and gender. No multicollinearity was detected and the MAX  $R^2$  procedure suggested a 2-variable model ( $R^2=0.69$ ,  $F(2,62)=71.18$ ,  $P<0.0001$ ). Condom availability (or lack of) ( $P<0.0001$ ) and impulsivity ( $P=0.0486$ ) emerged as significant predictors of unprotected sex/condom use, as seen in Table 4.

## DISCUSSION

This study examined young adults' propensity to engage in HIV-risk behaviours, such as casual and unprotected sex, within the under-investigated situational context of spring break. The incorporation of critical factors of substance abuse/use into the social context of health-risk behaviours extends studies of Canadian spring breakers' sexual risk-taking<sup>11,22,23</sup>.

Popular media images of the typical college spring-break vacation explicitly depict a permissive environment for heightened sexual activity and excessive drinking; nevertheless, the extent to which these behaviours actually occur is staggering. Study respondents' pre-vacation intentions, motives, and expectations revealed their anticipated involvement in drinking and sexual activity. Actual on-site behaviours and experiences, reported following spring break, were simply confirmations of students' intentions. The majority of our respondents were motivated to go on spring break by potential opportunities for drinking, sex, and trying drugs. In fact, many students selected

Table 3. Ordinary least squares results for casual sex

Explaining casual sex					
Variable	Beta	SE	Type II SS	F Value	Pr > F
Affective attitude toward casual sex	0.13	0.08	23.40	2.32	0.1366
Personal normative beliefs regarding casual sex	0.11	0.11	9.16	0.91	0.3469
Situational expectations regarding casual sex	-0.05	0.03	26.66	2.64	0.1128
Peer influence (pacts to have sex with someone new)	0.30	0.10	88.30	8.75	0.0054
Prior experience with casual sex	-2.81	1.19	56.00	5.55	0.0241
Situational conditions (participation in spring break activities)	-0.12	0.09	17.76	1.76	0.1930
Situational conditions (drinking prior to sexual activity)	1.40	0.32	190.62	18.89	0.0001
Situational conditions (impulsivity)	1.70	0.42	162.08	16.06	0.0003

Table 4. Ordinary least squares results for unprotected sex

Explaining unprotected sex					
Variable	Beta	SE	Type II SS	F Value	Pr > F
Situational conditions (impulsivity)	0.26224	0.13037	3.44165	4.05	0.0486
Situational conditions (condom un/availability)	0.27774	0.02628	95.04694	111.74	<0.0001



destinations based on their advertised promises of such opportunities. Not surprisingly, students under 21 reported a preference for Mexican destinations (i.e. Cancun, Rocky Point) over domestic spring break spots because the drinking age is not enforced in Mexico; those 21 or older prefer the less costly US destinations where they are free to drink. Before going on vacation, students expressed intentions to not only drink, but to get drunk and even pass out from drinking. Students are clearly aware of the effects of alcohol on their other behaviours. For example, many reported their intentions to experiment sexually and have sex with someone new while they also expressed their belief that such encounters would often occur as a result of drinking. Similarly, over half of the male and one-quarter of the female students intended to take condoms along with them, however, large numbers openly reported that they expected their judgement in using them to be impaired by drinking or drugs.

Upon returning from spring break, approximately half of all students reported getting drunk on their vacation and a third reported having sex with someone they met there, which is not surprising given their pre-vacation pacts to get drunk or to have sex with someone new. Many reported that their behaviours involving sexual risk taking were influenced by the spring break atmosphere, their perceptions of everyone around them drinking or having sex, and alcohol or drugs. While over half of all students reported either having condoms with them or having access to them, less than a quarter of students who had casual sex reported regular use. Ironically, students also reported that they rarely (or never) worried about STDs/HIV, even though they also reported regrets over having sex while intoxicated.

These findings confirm both anecdotal impressions and empirical findings of high levels of casual sex and alcohol abuse among young British and New Zealander vacationers, US and Canadian spring breakers, and Australian schoolies<sup>11,22,23,30-32</sup>. While all studies present alarming patterns of risk behaviours, discrepancies in the magnitudes reported is likely to be rooted in a combination of both theoretical and methodological factors. Differences are attributable to the lack of uniformity in theoretical approaches and probability sampling in survey studies, and inconsistencies in measures. As a result, it becomes even more imperative to develop a clear and consistent understanding of spring break's health ramifications.

By addressing parameters that influence various factors in addition to actual behaviours, our findings have the potential of contributing another piece to the puzzle of youth risk-taking. For example, multivariate analyses revealed alcohol consumption prior to sexual activity, impulsivity in decisions involving sex, peer influence—primarily pre-vacation pacts to have casual sex, and prior experience with casual sex during previous spring breaks to be the strongest predictors of casual sex

on spring break vacation. The strongest predictors of condom use/unprotected sex were the availability/unavailability of condoms and impulsivity in decisions involving sex. These results have relegated factors such as cognitive and affective attitudes, personal normative beliefs, social determinants, perceived health consequences, and even behavioural intentions to secondary positions in predicting HIV-risk behaviours. These results, though of utmost significance, also contrast the findings of other studies' in which TIB was used or vacation was the situational context. As previously mentioned, while these disparities might be the result of differences in design, methods, and theoretical perspectives, they underscore the need for comparative works with representative samples, diverse contextual settings, and valid and reliable measures of health-risk behaviours.

In view of the fact that excessive drinking has been consistently associated with a higher occurrence of unplanned sexual activity, unprotected sex, alcohol related driving injuries and fatalities, sexual and physical assaults, date rape, criminal mischief, and so forth<sup>42</sup>, the results of this study reiterate the damaging role alcohol plays in young adults' lives. Excessive alcohol consumption and illicit drugs, the cloak of anonymity that the spring-break vacation provides, and heightened social interaction in an environment of permissiveness, all facilitate risk-taking by students—which is further exacerbated by an extremely complex biochemical relationship between alcohol consumption and sexual behaviour. Although alcohol works as a physiological depressant on sexual behaviour—even at low concentration levels—changes in sexual behaviour are attributed to alcohol, regardless of alcohol-induced reduction in physiological arousal. Psychological experiments and cross-cultural anthropological analyses have stressed that alcohol's primary influence on sexual propensities is due to socially learned expectancies of its likely effects<sup>18</sup>. In light of the explosive interaction between high alcohol consumption levels, facilitating situational conditions, and individuals' expectations, the spring-break vacation becomes an incubator for young adults' HIV-risk behaviours.

Within this framework, we plan to enhance the methodological and theoretical facets of our research to foster a better understanding of the spring-break phenomenon. This involves an expansion of the theoretical model with the introduction of personality constructs such as sensation seeking and risk perception as well as the implementation of measures for biochemical processes of risk-taking and short- and long-term consequences (carryovers). Improvements are needed with regard to terms of reference—definitions of 'sex,' 'intercourse,' 'fooling around,' and more recently, 'oral sex' must be indubitable before any generalizations are to be made. In

addition, a more accurate understanding about young adults' self-perceptions and their views regarding casual sex, relationship commitments, benefits of condom use (*vs* birth control), and the spring-break setting is vital. For instance, a consistency between college students' views and their actual behaviours could be interpreted as evidence of the influence of general value systems on behaviours across settings rather than as evidence of casualness or permissiveness that is simply the function of a particular situation. A clear focus on context, rather than just behaviour, has the potential to contribute another piece to the puzzle of the aetiology of young adults' HIV-risk behaviours, which in turn can assist in developing more effective interventions—especially considering the challenges involved. Developing successful and timely prevention messages for safe sex and alcohol bingeing that will be relevant for spring breakers is likely to be particularly challenging. As if the process of influencing young adults' decisions and behaviour involving sex, alcohol, and drugs was not sufficiently complex, the pressures exerted on young adults by the spring-break setting (to 'fit in') and associated peer influences to participate in risk taking, further complicate matters. Particularly because spring breakers comprise a 'bridge population' linking extremely high and lower risk prevalence settings—the need for effective interventions cannot be overstated. Regardless of the difficulties, it is tremendously important to develop risk-reduction strategies and programmes that are relevant to college students and that engage their attention, particularly in critical social settings such as the spring-break resort.

Because spring-breakers' HIV-risk behaviours appear to be impulsive, influenced by substances impairing their judgement, influenced by peers, as well as the availability of condoms, their casual sexual encounters and condom use cannot be considered clearly planned. Therefore, it is imperative to stress meaningful contextual and environmental factors that can trigger previously learned habits, adherence to social norms and self-relevant emotions, and heightened perceptions of the health consequences of their behaviours, to serve as a cushion between their impulsivity, faulty judgement, and actual health-risk behaviours. The importance of understanding situational contexts for the development of effective interventions for youth has been underscored by a recent UNAIDS report that emphasizes the critical importance of sexual culture and especially the overlooked social/situational context (such as the spring break setting) within which different kinds of substance use and sexual conduct occur<sup>43</sup>.

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