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# BINGE DRINKING AND CASUAL SEX ON SPRING BREAK

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**Abstract:** College students' health-risk behaviors on spring break were examined via pre- and post-surveys. Over one-half reported getting drunk on the previous vacation and stated intentions to do so again. Personal normative beliefs and situational expectations emerged as strong predictors of intentions to binge and pacts of actual bingeing. Intentions for casual sex were predicted by attitudes, personal normative beliefs, situational expectations, and pacts, whereas engagement in casual sex was predicted by intentions for and prior experience with it. The majority of students reported rarely/never using condoms during spring break. They appear to participate in riskier behaviors in the spring break environment than at home. **Keywords:** binge drinking, casual sex, spring break, theory of interpersonal behavior. © 2006 Elsevier Ltd. All rights reserved.

**Résumé:** Soûlerie et rapports sexuels occasionnels pendant les vacances de printemps. On a examiné les comportements à risque pour la santé des étudiants universitaires pendant les vacances de printemps par moyen d'enquêtes antérieures et postérieures. Plus de la moitié des étudiants ont signalé qu'ils s'étaient enivrés pendant les vacances de l'année précédente et ont indiqué l'intention de le faire encore. Les croyances normatives personnelles et les attentes situationnelles ont surgi comme de forts indices des intentions de se soûler ainsi que de vrais pactes de beuverie. Les intentions de rapports sexuels occasionnels ont été prédites par des attitudes, des croyances normatives personnelles, des attentes situationnelles et des pactes, tandis que la participation aux rapports sexuels occasionnels a été prédite par les intentions et l'expérience antérieure. La majorité des étudiants ont signalé qu'ils utilisaient rarement des préservatifs ou pas du tout pendant les vacances de printemps. Ils semblent participer à des comportements plus risqués dans l'environnement des vacances de printemps que chez eux. **Mots-clés:** soûlerie, rapports sexuels occasionnels, vacances de printemps, théorie de comportement interpersonnel. © 2006 Elsevier Ltd. All rights reserved.

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## INTRODUCTION

Tourism reduces differences in infectious disease epidemiology between regions by facilitating the intermingling of diverse genetic pools and cultures through intimate contact outside ordinary settings (Apostolopoulos and Sönmez 2001). Epidemiological studies have documented a strong relationship between population movement and the spread of malaria, hepatitis, typhoid, and sexually transmitted infections (STIs)/HIV (Steffen 1997). While lifestyle influences the manifestation and upsurge of diseases through tourism, it is the very space of resorts that provide conducive settings where personal and social codes are temporarily suspended, behavioral constraints are removed, inhibitions fade (Clift and Carter 2000), and consequently risks are taken which are avoided at home. Tourism is even more likely to constitute the context in which risk behaviors occur when its consumers happen to be young adults, accompanied only by friends or other peers (Mewhinney, Herold and Maticka-Tyndale 1995). Considering that youth tourism is a growing component of the industry as a whole and that the prevalence of their health risks (particularly related to substance use and risky sexual activity) constitutes a problem of pandemic dimensions (Douglas, Collins, Warren, Kann, Gold, Clayton, Ross and Kolbe 1997; Johnston, O'Malley and Bachman 1999, 2000; Lenton, Boys and Norcross 1997; O'malley, Johnston and Bachman 1998; Wechsler 1999; Wechsler, Lee, Kuo and Lee 1999), the tripartite relationship among youth, tourism, and risktaking has the potential to constitute a serious public-health hazard.

### *The "Disinhibiting" Effect of Traditional Spring Break*

Recent studies in diverse geographic milieux have highlighted unprecedented health risks of young tourists at seaside resorts (Clark and Clift 1996; Eiser and Ford 1995; Hennink, Cooper and Diamond 2000; Ryan and Robertson 1997). Pronounced substance abuse and risky sexual practices were found among vacationing young adults at rates considerably higher than in their home environments. Such high-risk behaviors were traced back to situational disinhibition in settings encouraging sexual and emotional transience and to liminality (a sense of inbetweenness involving a temporary loss of social bearings). Further, high-risk behaviors in these settings seemed to be strongly associated with situational factors (the resort and what it entails), tourists' expectations of relevant experiences, social context (including peer group and social rewards), and risky leisure lifestyles (casual sex and excessive drinking), as well as behavioral intentions for casual sex and excessive drinking.

Spring break (SB) has become a North American institution involving the annual movement of over two million college students and several hundred thousand high-school students. Anecdotal impressions, ethnographies, and surveys reporting binge drinking, illicit drug use, unsafe sexual practices, fatal accidents, and even criminal violations, depict only the tip of the iceberg (Apostolopoulos, Sönmez

and Mattila 2000). Two studies, one with Canadian and another with American beachfront spring breakers, have reported incidence rates for engaging in sex with a new partner the day of meeting, ranging from 15% to 24% for males and from 13% to 21% for females, while 43% of those who had intercourse with a new partner did not always use condoms (Josiam, Hobson, Dietrich and Smeaton 1998; Maticka-Tyndale, Herold and Mewhinney 1998). Further, intentions, prior casual sex experience, peer influences, and situational conditions were found to be critical factors in explaining risky sexual behavior for both genders (Maticka-Tyndale et al 1998; Maticka-Tyndale and Herold 1997, 1999). Moreover, in the same studies, 51–75% of males and 39–57% of females reported either being drunk or engaging in binge drinking contests while 16% of males and 8% of females reported using drugs.

### *Theoretical Framework*

This study aims to forge the conceptual and empirical tools necessary to assess the prevalence of health-risk behaviors exhibited on SB, as well as to identify risk and protective factors and ultimately develop interventions. Several theoretical perspectives (planned behavior, reasoned action, health belief, problem behavior, and interpersonal behavior) have been instrumental in understanding health-risk behaviors exhibited during SB (Ajzen and Fishbein 1980; Akers 1985; Becker, Maiman, Kirscht, Haefner and Drachman 1977; Gottfredson and Hirschi 1990; Jessor 1977; Triandis 1980). It is the theory of interpersonal behavior (TIB), however, that most efficiently encapsulates the variables of situational conditions and prior experience, which are indispensable to understanding the SB context. This theory not only goes beyond other approaches by examining how mediating variables (other than intentions) influence behavioral outcomes, but it also specifies more fully those variables that influence behavioral intentions (pacts, situational expectations). Further, TIB explicitly focuses on factors that may facilitate, impede, or even replace intentions as determinants of substance abuse or risky sexual practices.

The theory of interpersonal behavior suggests that intentions are influenced by cognition, affect, social determinants, and personal normative beliefs, with each carrying a weight indicating its relative influence. Cognition represents the subjective analysis of the advantages and disadvantages of a particular behavior. Affect is conceptualized as the emotional response to the thought of demonstrating a certain behavior (often the result of past experiences). Social determinants (which include normative beliefs and those in specific social roles) result from subjective analysis of how others think about a certain behavior or what is appropriate for a member of a group. Personal normative beliefs refer to the evaluation of a behavior's significance for oneself (internalized personal standards or moral codes). Figure 1 illustrates the modified TIB model for binge drinking and casual sex on SB.

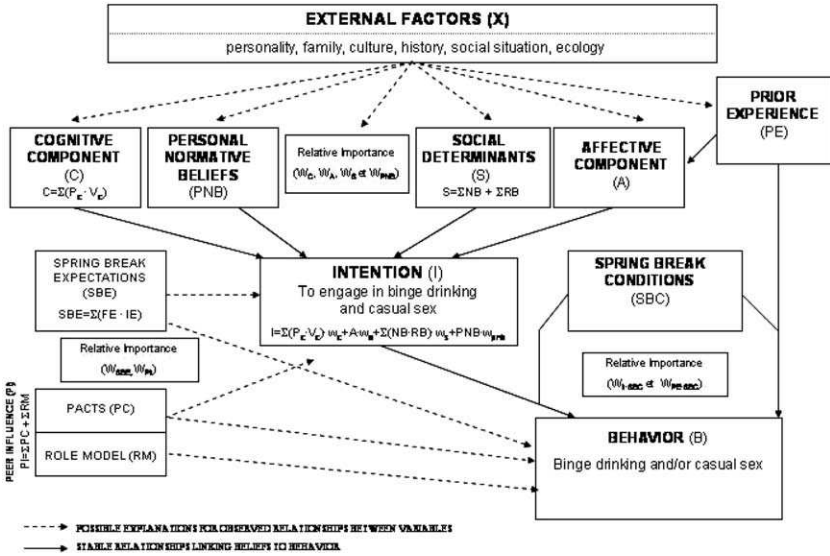


Figure 1. Structural Model for Binge Drinking and Casual Sex on SB

Situational conditions involve characteristics associated with the disinhibiting nature of SB and act as mediators that facilitate or impede behaviors. TIB models participation in SB activities as directly influencing behavior. Prior experience denotes the strength of established behaviors. SB expectations involve the anticipation of whether experiences or situations will facilitate or hinder certain behaviors or activities. Peer influence encompasses pacts and role modeling: the former is conceptualized as agreements or promises among peers to get involved in or avoid certain activities, while the latter involves spring breakers' perceptions of their friends' engagement in certain activities. While situational expectations and peer influences are not part of the original TIB model, new variables were tested, which originated from pilot work and works of Maticka-Tyndale and associates (Apostolopoulos et al 2000; Apostolopoulos and Sönmez 1998, 1999, 2000; Apostolopoulos, Sönmez, Sasiddharan and Jovicich 1999; Clark and Clift 1996; Herold, Maticka-Tyndale and Mewhinney 1998; Maticka-Tyndale and Herold 1997,1999; Maticka-Tyndale et al 1998; Ryan and Roberston 1997) and which showed potential to strengthen the model's explanatory power.

Within this theoretical framework, findings are presented here from research focusing on US spring breakers' health-risk behaviors. The study purpose was to explore how cognitive and affective attitudes, personal normative beliefs, social determinants, expectations, and pacts influence intentions of young men and women to engage in excessive alcohol consumption and casual sex; to assess the predictive power of intentions, situational conditions, prior experience, and peer influence in explaining alcohol abuse and casual sex; and to initiate a

discussion on preventive intervention strategies. Based on TIB, which posits that external factors, cognitive and affective attitudes, social determinants, personal normative beliefs, prior experience, situational conditions, expectations, peer influence, and intentions can explain negative outcomes (binge drinking and engagement in casual sex), the following two hypotheses were tested:

- H<sub>1</sub>: *Intention to binge drink on spring break is a significant and positive predictor of engagement in binge drinking behaviors during spring break.*
- H<sub>2</sub>: *Intention to engage in casual sex during spring break is a significant and positive predictor of engagement in casual sex during spring break.*

## BINGE DRINKING AND CASUAL SEX

Undergraduates at one northeastern and one southwestern university participated in a pre- and post-spring break self-administered survey designed to test the efficacy of the modified TIB. The selection of two universities was guided by data supporting that students converge at a variety of SB destinations depending on their school's location. For example, students in the southwest often travel to Mexico because it is less expensive (due to proximity) and because the drinking age is rarely enforced, whereas students from the northeast tend to travel more to the southeast. Students in both regions were surveyed in order to represent diverse destinations through varying experiences.

Pre-break questionnaires, which included questions about substance use and sexual histories, past SB experiences, expectations for the upcoming trip, and intentions for drinking and sexual activity were distributed to students two weeks before SB. After their return, another set of questionnaires were administered to the same students, which asked about their actual behaviors and activities, focusing in particular on alcohol use and sexual activity.

### *Instrument Development*

In developing the survey instruments (pre- and post-break), established instruments and relevant questionnaires on drug and alcohol use, sexual behavior, and other health risk behaviors were consulted and portions were adopted in an expanded or modified manner (Adlaf, Ivis and Smart 1997; Annis 1984; Clark and Clift 1994; Herold, Maticka-Tyndale and Mewhinney 1998; Johnston et al 1999, 2000; Maticka-Tyndale et al 1998; Wechsler et al 1999). Although both parts of a survey were primarily guided by TIB, which provides structure for each concept, several questions were elicited from preliminary discussions with students. As per TIB guidelines, elicitation research was conducted with students who had traveled to a SB destination within the previous two years. Semistructured, individual, and focus group interviews were used to elicit concepts and determine appropriate language. A total of eight students (four male and four female) were included in

two focus groups separated by gender. Participants were recruited by asking for volunteers who had gone to a traditional SB destination. Content analysis of focus group discussions helped to define concepts that proved very similar to findings of earlier studies.

Both the pre- and post-SB questionnaires were refined in a two week test-retest procedure, with a sample of 15 male and 15 female undergraduates planning for their upcoming vacation at a traditional SB locale. They were recruited from several classes taught by colleagues who permitted the research team to discuss the study within classes and recruit volunteers to participate by completing the two questionnaires. Items that did not meet the established criteria for test-retest reliability (Pearson's  $r > .75$ ) or that had a weak correlation with other items measuring the same construct (evaluated using Cronbach's alpha) were excluded (Apostolopoulos and Sönmez 1998, 1999, 2000). The specificity of items used in the scalar measures was tested using confirmatory factor analysis to ensure that items loaded only on designated constructs. Construct validity was assessed by examining correlation matrices to verify that scalar measures correlated with criterion factors (gender, age, prior bingeing, and prior coital experience) in a manner consistent with similar studies. Several clusters such as cognitive and affective attitudes showed high Cronbach alphas, and factor analysis clearly indicated that there were distinct dimensions.

### *Sampling*

The sample consisted of a cross section of undergraduates enrolled in randomly selected general education classes with large enrollments from one northeastern and one southwestern university. At each campus, research assistants visited classes and after obtaining instructor permission, asked those students with plans to go to a traditional SB destination (these individuals are referred to as "spring breakers" in this paper)—rather than home to their families or to alternative SB vacations (volunteering on Habitat for Humanity projects)—to raise their hands.

Six hundred pre-break questionnaires (Part I), with questions on substance use and sexual histories, past SB experiences, expectations for the upcoming trip, and intentions for drinking and sex were distributed to those who raised their hands. Questionnaires were left with them because their length was unsuitable for immediate (in class) completion and required at least a half hour to complete. During the following two weeks, several visits were paid to the classes to collect completed instruments, which represented 89% ( $N = 534$ ) of the sampled students. Participants provided the last four digits of their social security/student identification numbers, which allowed the matching of the pre- and post-break surveys and also enrolled all participants in a lottery drawing to win \$100 as an incentive for participation. Upon returning from SB, post-break instruments (Part II) were distributed to the same 534 students with questions about actual vacation behaviors and activities, focusing in particular on alcohol use and sexual activity.

The post-break survey achieved only a 47% response rate ( $N=251$ ). The discrepancy in response rates between the pre and post attempts can be explained by three possible factors. First, only 85% of the students who indicated in their pre-break questionnaire that they would go to a “typical SB destination” actually did (it is likely that the remaining 15% either did not travel at all or changed their destinations to home or elsewhere). Second, their return from vacation coincided with midterms, drawing their attention away from participation. Further, post-break questions were more pointed and personal (sexual behavior, drug use, drinking) than pre-break ones and might have caused some to shy away from responding.

### *Constructs*

Cognitive attitude was measured by several 7-point semantic-differential scales with bipolar adjectives (such as safe/risky, good/bad, responsible/irresponsible) as students rated their evaluation of the consequences of “sex with someone they meet for the first time on SB” or “passing out due to binge drinking.” A composite of mean scores of adjective pairs represent respondents’ cognitive evaluation of specific health risk behaviors ( $\alpha = .80$ ). Affective attitude was measured by a series of 7-point semantic-differential scales with bipolar adjectives (fun-loving/serious, exciting/dull, pleasant/unpleasant) as spring breakers rated their feelings about casual sex and excessive drinking. The construct represents a composite score from the mean scores of the adjective-pairs ( $\alpha = .78$ ).

Social determinants represent a composite of normative and role beliefs. Normative beliefs were measured by the mean score of a 7-point Likert-type scale (extremely likely–extremely unlikely) as students indicated the extent of their beliefs that each listed referent other (such as travel companion) would approve or disapprove of binge drinking and casual sex. This construct was a composite of all normative beliefs ( $\alpha = .83$ ). Role beliefs were measured by the mean score of a 7-point Likert-type scale (strongly agree–strongly disagree, doesn’t apply) with items like “it’s OK for someone young like me to participate in a drinking contest on SB” as respondents were asked the extent of their beliefs that certain behaviors are appropriate for someone with their status or position. The composite of all role beliefs constituted this construct ( $\alpha = .85$ ). Personal normative beliefs were measured by 7-point Likert-type scales (strongly agree–strongly disagree, doesn’t apply) with items such as “it would be against my values to have sex with someone I meet on SB” as students were asked about their moral obligation or responsibility to perform or avoid risky behaviors. The final measure was a composite of responses to a series of similar questions ( $\alpha = .79$ ).

Situational conditions represent the SB environment and associated behaviors (watching/participating in “wet T-shirt” or binge drinking contests). They were measured with items such as “I got drunk on SB because it seemed like everyone was doing it” through 7-point



Likert-type scales (strongly agree–strongly disagree, doesn't apply). A composite of the mean score of responses to a series of questions and scales was used ( $\alpha = .72$ ). Prior experience was measured with (yes, no) questions, such as "On your last SB, did you binge drink?" or "...did you have sex with someone you just met?" The composite score for prior experience was calculated from the mean of responses ( $\alpha = .77$ ). For expectations, the elicitation phase identified 10 situations and experiences that had occurred during past breaks believed to either facilitate or impede excessive drinking or sex with a new partner. These are partying, being in a "break-loose" mood, drinking alcohol, getting drunk, "dirty-dancing," watching/participating in contests such as "hot body" or "wet T-shirt," binge drinking, picking up someone with the intention to have sex, perception of everyone having sex, and perception of everyone getting drunk. The perceived degree of influence of each situation on respondents' participation in or avoidance of casual sex or binge drinking was measured with a 7-point Likert-type scale (strongly agree–strongly disagree, doesn't apply) with items such as "I would have sex with someone new I meet on SB if it seemed like everyone was having sex" or "I would get drunk if it seemed like everyone was drinking." In addition, the frequency with which students expected to be in certain situations was measured with a 5-point Likert-type scale (never–always) with items such as "I will be pressured to get drunk." SB expectations were quantified as the summed product of both scales ( $\alpha = .94$ ).

Peer influences represent a composite of pacts and role modeling. Pacts were measured with a series of (yes, no) questions about whether or not students made promises or agreements that they would/would not get drunk or have sex with someone new. The construct of "peer influence" was analyzed both as a composite score ( $\alpha = 0.87$ ) (combining pacts and role modeling) and separately as individual measures of "pacts" and "role modeling." Role modeling 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 health risk behaviors while on break with questions such as "Among your closest friends, how many actually got drunk" or "How many had sex with someone they just met on SB?" The construct was a composite of all role modeling components ( $\alpha = .81$ ). Intention for casual sex (defined as having vaginal intercourse with someone new), and for binge drinking (having 5 or more drinks at one sitting for males and 4 or more for females) were measured with a 5-point Likert-type scale (never–always). Intention (serving as both a predictor and outcome variable) was a composite of responses to a series of questions on health risk behaviors. Behaviors (actual onsite) involving excessive drinking and casual sex were measured with a 5-point Likert-type scale (never–always). In addition, multiple-item questions were asked regarding the number of drinks the students had at one sitting and the number of their casual sex encounters. Behavior (as the other outcome variable) was a composite of responses to a series of questions on excessive alcohol use and casual sex.

### *Data Analysis*

Items extracted from the surveys to answer the research questions were tested for reliability with Cronbach's alpha and for construct validity using factor analysis. Responses of "none", "never", and "doesn't apply" were excluded from the analysis. Variables were not narrowly operationalized; instead, constructs were regarded as open concepts and triangulated by different observed variables (Salvucci, Walter, Conley, Fink and Saba 1977). Observed variables were identified as indicators to the constructs, which were then added, deleted, and rewritten based upon their internal consistency and unidimensionality using the 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 represent abstract constructs. In this study, five clusters of indicators were found to have Cronbach's alpha of .70 or above (Nunnally 1978). 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 homogeneity of error variances, normality of residuals, and linearity were checked; no serious violations of assumptions were found.

### *Study Results*

Respondents (those planning to go to a traditional SB destination) were comprised of 321 females and 211 males. Of these, 96% were between the ages of 18–25, and over 83% were white. Nearly 97% identified themselves as heterosexuals and over 32% reported they were in a steady relationship. A significantly higher percentage of males (43%) compared with females (36%) went on their first SB during the year of the study (hereafter, percentages for males are followed by those for females). Over 61% and 43% went on vacation with friends, while about 9% and 12% went with their relationship partners. See Table 1.

*Past Substance Use and Sexual History.* Over half of all spring breakers (64%, 51%) got drunk during their previous break; over 57% and 53% got drunk more than three times during their one-week vacation. About 30% and 19% reported having experimented with drugs (primarily marijuana and cocaine). Over 21% and nearly 5% reported having sex with someone new during their previous break on the day they met them; from these respondents, 12% and over 4% reported having two or more partners. Nearly 50% and 41% reported having consumed alcohol just prior to sex in the past and about 48% of all reported regretting their sexual experiences immediately following alcohol consumption.

**Table 1. Profile of Spring Breakers**

Sociodemographic Characteristics	Males (N = 211)		Females (N = 321)	
<b>Age</b>				
18–20	75	36%	160	50%
21–23	114	54%	141	44%
24–26	14	7%	12	6%
27+	7	3%	8	4%
<b>Race/Ethnicity</b>				
White	184	87%	261	81%
African American	4	2%	12	4%
Hispanic/Latino	9	4%	15	5%
Asian	7	3%	12	4%
Multiethnic/Multiracial	2	1%	15	5%
Other	3	1%	12	4%
<b>Religion</b>				
Catholic	66	31%	131	41%
Protestant	31	15%	40	12%
Other Christian	49	23%	60	19%
Jewish	13	6%	12	4%
Muslim	2	1%	–	–
No religious affiliation	42	20%	51	16%
Other	6	3%	27	8%
<b>Current Dating Status</b>				
Not dating or seeing anyone	92	44%	110	34%
Casually dating or seeing one person	33	16%	42	13%
Dating or seeing more than one person	17	8%	22	7%
Steady relationship with one person	57	27%	114	36%
Engaged or living with partner	6	3%	24	7%
Married	6	3%	7	2%
Other	0	–	2	1%
<b>Sexual Orientation</b>				
Heterosexual	206	98%	309	96%
Bisexual	1	–	9	3%
Homosexual	2	1%	–	–
Undecided/unsure	–	–	2	1%
Other	1	–	–	–

*Spring Break Motives.* Opportunities for drinking (78%, 46%), for sex (74%, 31%), and for trying drugs (24%, 9%) emerged as significant motives for going on SB. Among students' other motives were escape from stress and boredom (95%, 97%), finding adventure (91%, 81%), meeting new people (65%, 55%), finding romance (37%, 29%), and "fitting in" (26%, 13%). Further, SB destination choice was based on its potential for alcohol and sex: drinking opportunities (78%, 46%) followed by sexual opportunities (74%, 31%) afforded by the destination emerged as the most important factors in destination selection.

*Spring Break Intentions and Expectations.* Of the prospective spring breakers, nearly 68% and 72% indicated their intentions to drink, 54% and 51% to get drunk, 22% and 9% expected to drink to the point of passing out, and over 19% and 10% intended to experiment with drugs. Over 42% and 18% intended to experiment sexually, 28% and 2.8% intended to have sex with someone new, while over 42% and about 16% believed their sexual encounters would result from drinking or drugs. Spring breakers revealed their expectations to be in a “break-loose,” “have fun” mood (67%, 62%), to be pressured sexually (25%, 23%), and to get drunk (33%, 22%). Further, students expected to have sex with someone new (33%, 9%), or to get drunk (54%, 43%) on SB if the situational conditions encouraged the behavior (Table 2).

**Table 2. Past SB Experiences and Intentions for Upcoming SB**

Past Experiences and Intentions for Upcoming Spring Break	Males (N = 211)	Females (N = 321)
<b>Alcohol Use</b>		
“I got drunk on my last spring break vacation”	64.0% <sup>a</sup>	50.9%
“I drank until I passed out”	38.6% <sup>a</sup>	29.2%
“I drank alcohol just prior to having sex on my last spring break vacation”	49.5%	41.2%
<b>Sexual Activity</b>		
“I had sex with someone new on my last spring break vacation the day I met them”	21.1% <sup>c</sup>	4.9%
<b>Motives for Going on Spring Break</b>		
“Drinking opportunities were important reasons for going on my last spring break vacation”	78.2% <sup>c</sup>	46.2%
“Sexual opportunities were important reasons for going on my last spring break vacation”	74.3% <sup>c</sup>	31.1%
<b>Intentions for Drinking and Sex</b>		
“I will drink”	67.8%	71.9% <sup>a</sup>
“I will get drunk”	54.2% <sup>c</sup>	50.9%
“I will drink till I pass out”	21.7% <sup>b</sup>	9.2%
“I will have sex as a result of drinking”	42.3% <sup>c</sup>	15.8%
“I will have sex with someone I meet on spring break”	28.0% <sup>c</sup>	2.8%
“I will experiment sexually”	42.1% <sup>c</sup>	18.1%
<b>Situational Expectations</b>		
“I will be in a ‘break-loose,’ ‘have fun’ mood”	66.8%	61.5%
“I will be pressured sexually”	24.8% <sup>a</sup>	23.3%
“I would have sex with someone I meet on spring break if it seemed like everyone was having sex”	33.2% <sup>c</sup>	9.3%
“I will be pressured to get drunk”	33.1%	21.7%
“I would get drunk if it seemed like everyone was drinking”	53.9% <sup>a</sup>	43.2%

<sup>a</sup> Chi-square ( $p < .05$ ); <sup>b</sup> Chi-square ( $p < .01$ ); <sup>c</sup> Chi-square ( $p < .001$ ).

*Explaining Intentions for Binge Drinking.* OLS analysis was used to examine the predictive power of cognitive and affective attitudes, personal normative beliefs, social determinants, pacts, and situational expectations for intentions to binge on alcohol. Despite a large number of predictors, low variation inflation factors eliminated the possibility of multicollinearity. All variables were examined in the maximum  $R^2$  procedure. From the five variable model obtained ( $R^2 = .51$ ,  $p < .00001$ ,  $F(5,496) = 104.02$ ), cognitive attitude ( $\beta = -.084$ ,  $p = .0158$ ), personal normative beliefs ( $\beta = .15$ ,  $p < .0001$ ), and two separate items of situational expectations, "being in a 'break-loose,' 'have fun' mood" ( $\beta = -.37$ ,  $p < .00001$ ) and expecting that "everyone will be drinking" ( $\beta = -.31$ ,  $p < .0001$ ) emerged as significant predictors of intentions for bingeing. Affective attitude toward drinking ( $\beta = -.054$ ,  $p = .0603$ ) approached significance (Table 3).

*Explaining Intentions for Casual Sex.* Cognitive and affective attitudes, personal normative beliefs, social determinants, situational expectations and pacts were included in an OLS regression model to predict intentions for casual sex on SB. While no multicollinearity was detected, the normality Q-Q plot clearly showed that five multivariate outliers were present in the dataset. Once these five subjects were excluded from the subsequent analysis, maximum  $R^2$  procedure suggested a four variable regression model ( $R^2 = .61$ ,  $F(4, 495) = 101.24$ ,  $p < .0001$ ). Cognitive attitude ( $\beta = -.15$ ,  $p < .0001$ ), personal normative

**Table 3. OLS Results for Intentions to Engage in Binge Drinking and Casual Sex**

Explaining Intentions	Variables				
	Beta	SE	Type II SS	F Value	Pr > F
<b>Explaining Intentions for Binge Drinking</b>					
Cognitive attitude toward excessive drinking	-.08407	.03472	40.39258	5.86	.0158
Affective attitude toward excessive drinking	-.05380	.02857	24.42597	3.55	.0603
Personal normative beliefs regarding excessive drinking	.15096	.02441	263.45185	38.25	<.0001
Situational expectations ("being in a 'break-loose,' 'have fun' mood")	-.37449	.08487	134.09053	19.47	<.0001
Situational expectations ("everyone will be drinking")	-.31326	.08116	102.59593	14.90	.0001
<b>Explaining Intentions for Casual Sex</b>					
Cognitive attitude toward casual sex	-.15344	.03113	226.10132	24.30	<.0001
Personal normative beliefs regarding casual sex	.18289	.02478	506.93902	54.47	<.0001
Situational expectations involving casual sex	-.29525	.02445	1356.80726	145.80	<.0001
Pacts involving casual sex	-3.16067	.75968	161.08914	17.31	<.0001

beliefs ( $\beta = .18$ ,  $p < .0001$ ), situational expectations ( $\beta = -.29$ ,  $p < .0001$ ), and pacts ( $\beta = -3.2$ ,  $p < .0001$ ) were found to be significant predictors of intentions for casual sex on the upcoming vacation (Table 3).

*Drinking and Sexual Behavior on Spring Break.* Upon their return, students reported ample opportunities for drinking (86%, 79%), sex (66%, 63%), and drug use (39%, 27%). Significantly more males (51%) than females (40%) reported getting drunk, with 21% of the former and 7% of the latter having drunk until they passed out. Over 68% of all reported drinking more alcohol during break and 14% using more drugs than at home. Social determinants emerged as significant facilitating factors of students' substance use; in fact, about 50% and 51% reported drinking alcohol because "everyone around them was drinking," 16% reported using drugs for the same reason, and 19% indicated they drank alcohol or used drugs in order to "fit in." While there are certainly other explanations for drinking and drug use, perceptions that "everyone is drinking or using drugs" have the potential to explain some of the respondents' risk behaviors, which may have significant implications for prevention measures. It is evident that those drink for the aforementioned reasons require education and intervention efforts that address their substance use behaviors. Pre-vacation agreements (pacts) made with friends about substance use and casual sex emerged as strong indicators of risky vacation behavior. Students reported making pacts to get drunk (31%, 30%), to have sex with someone new (15%, 9%), and to experiment with drugs (9%, 4%) while away. Although 33% and 45% reported being in a committed relationship (whether it was dating someone, being engaged or living with someone, or being married), nearly 30% and 31% reported they had sex with someone they met on SB. About 16% and 4% had two or more sexual partners they knew less than one week. About 41% said they met someone on SB who wanted to have sex with them and 37% reported they met someone they wanted to have sex with (Table 4).

When asked about their alcohol use in connection with their sexual activities, 49% and 38% reported having sex as a direct result of drinking. Spring breakers also reported that often their decisions involving sex were influenced by alcohol (53%), drugs (13%), or pacts they made with friends (29%). In response to questions about situational influences on their decisions to use condoms during SB, students reported their decisions were negatively influenced by drinking (36%), because they were drunk (23%), or because they were under the influence of drugs (8%). Over 50% of males and 51% of females reported that it seemed like everyone was drinking or having sex (17%, 6%). Finally, 68% reported regretting having sex after drinking and 10% following drug use (Table 4).

*Explaining Binge Drinking.* Binge drinking was used as the outcome variable while independent variables included intentions to drink,

**Table 4. Alcohol Use and Sexual Behavior on SB, Pacts and Role Modeling**

Alcohol Use and Sexual Behavior	Males ( <i>N</i> = 105)	Females ( <i>N</i> = 126)
<b>Alcohol Use</b>		
“I had plenty of opportunities for drinking”	86.0% <sup>a</sup>	79.10%
“I got drunk”	51.3% <sup>c</sup>	39.70%
“I drank alcohol until I passed out”	21.4% <sup>b</sup>	7.30%
<b>Amount Of Alcohol In One Sitting</b>		
None	23.90%	24.80%
1–2	20.60%	29.90%
3–4	13.00%	17.80%
5 + drinks	39.1% <sup>a</sup>	27.40%
<b>Sexual Activity</b>		
“I had plenty of opportunities for sex”	65.80%	62.70%
“I experimented sexually”	74.00% <sup>c</sup>	23.00%
“I had sex with someone new I met on spring break”	29.70%	30.80%
“I had sex as a result of drinking”	49.30%	38.00%
“I never/rarely worried about STIs/HIV”	74.20%	87.0% <sup>b</sup>
<b>Condom Use</b>		
“I never used a condom”	63.20%	67.50%
“I rarely used condoms”	12.00%	10.90%
“I sometimes used condoms”	3.40%	5.30%
“I often used condoms”	5.00%	8.20%
“I always used condoms”	16.0% <sup>b</sup>	8.00%
<b>Number of Intercourse Partners Student Knew Less Than 1 Week</b>		
1	84.00%	95.70%
2–4	16.00%	4.30%
<b>Pacts with Friends</b>		
“To have sex with someone new”	15.0% <sup>c</sup>	9.00%
“To get drunk”	30.80%	29.50%
<b>Role Modeling</b>		
“Friends I went to spring break with were drinking”	28.80%	20.10%
“Friends I went to spring break with were having sex with someone new”	56.00%	58.90%
“It seemed like everyone was drinking”	50.40%	51.10%
“It seemed like everyone was having sex”	17.0% <sup>b</sup>	6%

<sup>a</sup> Chi-square ( $p < .05$ ); <sup>b</sup> Chi-square ( $p < .01$ ); <sup>c</sup> Chi-square ( $p < .001$ ).

prior experiences with binge drinking, situational conditions conducive to excessive drinking, situational expectations regarding drinking, and pacts to get drunk. Because two separate items represented situational expectations and there were seven regressors in the model, the presence of collinearity was expected to inflate its variance. As a remedy, a variance inflation factor was computed, but no collinearity was detected among predictors. Nevertheless, a 7-predictor model may be too complicated to be useful, thus, the maximum  $R^2$  method was used to reduce the model to a 2-variable model,  $R^2 = .4066$ ,  $F(2, 74) =$

**Table 5. Hierarchical Logistic Regression Results for Drinking and Sex**

Explaining Behaviors	Variables				
	Beta	SE	Type II SS	F Value	Pr > F
<b>Explaining Binge Drinking</b>					
Situational expectations (involving excessive drinking)	-.44765	.08242	57.46979	29.50	<.0001
Pacts involving excessive drinking	.93339	.35131	13.75316	7.06	.0097
<b>Explaining Casual Sex</b>					
Intentions for casual sex	.21712	.07932	33.98502	7.49	.0078
Prior experience with casual sex	1.27197	.56877	22.68531	5.00	.0285

25.36,  $p < .0001$ . Situational expectations involving excessive drinking ( $\beta = -.4476$ ,  $p < .0001$ ) and pacts to get drunk ( $\beta = .9334$ ,  $p = .0097$ ) were found to be significant predictors. Regression assumptions such as normality of residual, random error, and homogeneity of variance were examined and no serious assumption violations were found. No significant differences were found when separate analyses were run for men and women (Table 5). The first hypothesis ( $H_1$ ) was rejected because situational expectations and pacts to get drunk, rather than intentions to binge drink, emerged as significant predictors of binge drinking.

*Explaining Casual Sex.* A hierarchical logistic regression was run with casual sex as the outcome variable and intentions for casual sex, prior experience with casual sex, situational conditions, situational expectations, and pacts to have sex with someone new as predictors. Because situational expectations were represented by more than one item, there were eight predictors; hence the presence of collinearity was again considered. Variance inflation factors were examined but no collinearity was found among the variables. Nonetheless, a variable selection procedure was used to simplify the model. Based on what the maximum  $R^2$  procedure suggests, only two significant predictors were retained ( $R^2 = .2291$ ,  $F(2,70) = 10.40$ ,  $p < .0001$ ): intention to engage in casual sex ( $\beta = .2171$ ,  $p = .0078$ ) and prior experience with casual sex ( $\beta = 1.2720$ ,  $p = .0285$ ). Again, no significant differences were found when separate analyses were run for men and women (Table 5). The second hypothesis ( $H_2$ ) was supported by the results.

Although several significant predictors were found in the preceding regression models, over- and under-powering may threaten the stability and validity of these regression models. Post-hoc power analysis was conducted to ensure that the power level for each model was within the range of .7 to .9, which is a reasonably high probability of correctly rejecting the null hypothesis. Resampling was also conducted to examine the stability of the parameter estimation. The bootstrapped results concurred with the parametric test results.



## CONCLUSION

The overall picture of both intentions and actual behaviors involving alcohol and sex during SB is indeed worrisome—even when keeping in mind the smaller sample of respondents ( $N = 251$ ) to the post-break compared with the pre-break survey ( $N = 534$ ). With regard to binge drinking, high percentages of students (64% males, 51% females) reported getting drunk on their previous vacations while over half of all students (54%, 51%) clearly expressed their intentions to get drunk on their upcoming vacations. Following SB, many reported actually getting drunk (52%, 40%) and bingeing (40%, 28%), while some reported passing out from drinking (22%, 8%). Certainly, some of the OLS regression findings that are counter intuitive are surprising. For example, one would expect more positive (or lenient) cognitive and affective attitudes regarding binge drinking to predict intentions to binge. It is possible that the measures for attitudes were not adequate or that they influenced other factors, which altered the direction of relationships between attitudes and intentions.

As for situational expectations related to drinking, significant percentages of both males and females reported expectations consistent with the negative and risky elements of the traditional SB vacation. They expected to be in a “break-loose” mood, to be pressured to drink, to get drunk if everyone around seemed to be drinking, and to have sex with someone new if everyone seemed to be doing so. It is tempting to interpret this inverse relationship as somewhat of a self fulfilling prophecy: students’ expectations to find an atmosphere characterized by excessive drinking and casual sex were significant predictors of their intentions to participate in the same behaviors themselves. As for actual bingeing behaviors, pacts made with friends to get drunk emerged as the strongest predictor of binge drinking. This is not surprising, considering that a third of all students (31%, 30%) had made pacts to get drunk. Similar to intentions for binge drinking, more negative situational expectations for excessive drinking again emerged as a significant predictor of actual bingeing behaviors, which was demonstrated in an inverse relationship.

As for sexual behaviors, smaller percentages reported casual sex on past breaks (21%, 5%), intentions to have sex with someone new on their upcoming vacations (28%, 3%), or pacts to have sex with someone new on the upcoming break (15%, 9%), while many more (42%, 16%) thought that they would have sex as a result of drinking. OLS regression results revealed cognitive attitudes, personal normative beliefs, situational expectations, and pacts to be significant predictors of intentions to engage in casual sex; however, results indicate inverse relationships between intentions and three of these predictor variables (cognitive attitudes, pacts, situational expectations). It may be possible to interpret these inverse relationships as respondents’ discomfort in expressing a premeditation for those behaviors, which may be easier to explain after they occur and as a result of drinking because it may help students to distance themselves from behaviors that can be deemed reckless. Upon returning home, about one third of respon-

dents reported actually having had casual sex (30%, 31%), with a particularly worrisome majority reporting irregular condom use—never, rarely, or sometimes using condoms (79%, 84%).

Upon closer examination of post break responses, it is apparent that substantial numbers of spring breakers got drunk (51%, 40%), had three or more drinks in one sitting (52%, 45%), had sex as a result of drinking (49%, 38%), and had sex with a partner that they knew less than one week (84%, 96%), while most “rarely or never used a condom” (75%, 78%), because they “never or rarely worried about STIs/HIV” (74%, 87%). In light of these responses, it is impossible to divorce casual sex behaviors from the influence of excessive drinking, which can distort judgment and lead to behaviors that students have not contemplated or planned. Regression results revealed that intentions to engage in casual sex and prior experience with it (exerting a particularly strong influence) are significant predictors of actual engagement in the behavior. Considering that relatively small percentages of study respondents (21%, 5%) accepted prior SB experience with casual sex, while it emerged as a significant and very strong predictor of actual engagement in it—the possibility that respondents were not completely candid about their prior SB experience with casual sex should not be ruled out. Nevertheless, given that the traditional SB environment facilitates bingeing and casual sex, young adults may participate in activities and behaviors that they may not otherwise engage in—which may make it easier to engage in such risk behaviors in subsequent vacations when opportunities present themselves.

The inverse relationships that emerged from analyses cannot be attributed to outliers that may drag down or reverse the regression line because the data were plotted during the analysis to visually inspect the patterns and remove outliers. Nor can they be attributed to the instrument’s failure to measure the variables due to vague or misleading wording regarding constructs because both Cronbach’s alpha and factor analyses were used to detect strange response patterns. The most likely explanation may be that some of the measured variables (such as attitudes) might have influenced something else in the model (and the actual experience), which might have inverted the relationships. It was not the purpose of this study to validate the TIB, but rather to use it as the conceptual foundation for the design and analysis.

However, the results imply that the predictive power of some of TIB’s main constructs (attitudes, situational expectations) and their possible interaction with other variables need closer examination—because other variables may have influenced both intentions and behaviors that neither the TIB nor this study identified or measured, which might have been revealed in follow-up interviews with respondents. Finally, the results may have been influenced by the fact that the regression and OLS regression analyses did not separate males and females, but rather treated them as one group. Particularly when it comes to efforts to understand sexual behavior, men and women need to be separated due to the different influences exerted by societal norms and

expectations, peers, and personal attitudes and beliefs. This brings up some of the study's limitations; it is possible that questions used to elicit responses did not permit respondents to fully reveal explanations for their behaviors and hence limited the findings. Personal (socio-demographic) factors measured in this study may not have fully represented all influences on students' intentions for and actual engagement in the risk behaviors. Findings may also be limited by the nature of the sampling frame and might not be generalizable to the general population of college students since only two US universities were sampled and only those students with plans to attend a traditional SB (as opposed to an alternative SB) were sampled.

Overall, this study highlights the under-investigated situational context of SB and its impact on young adults' propensity to engage in risky behaviors. While it builds on earlier studies (Maticka-Tyndale et al 1998; Maticka-Tyndale and Herold 1999; Mewhinney et al 1995) that focused on the formation of casual coital relationships among vacationing Canadian college students, this investigation goes further by incorporating such critical factors as substance abuse into the SB setting where a gamut of health risks occur. Findings presented here have the potential to contribute to the puzzle of youth risk taking by addressing parameters that can influence behavioral intentions as well as actual behaviors. These results also contrast with findings of other studies in which TIB was used or the tourism setting represented the situational context—particularly in light of some of the inverse relationships found.

In general, findings confirm both anecdotal impressions and empirical findings of high levels of casual sex and alcohol abuse among young Britton and New Zealander vacationers, United States and Canadian spring breakers, and Australian schoolies (Clark and Clift 1996; Eiser and Ford 1995; Hennink et al 2000; Josiam et al 1998; Maticka-Tyndale et al 1998; Ryan and Robertson 1997). Nevertheless, discrepancies exist in the magnitudes reported and the directions of relationships. While all studies present alarming patterns of risk behaviors, these differences are likely to be rooted in a combination of both theoretical and methodological approaches, probability sampling in survey studies, and inconsistencies in measures. The discrepancies also confirm the need for comparative works with representative samples, diverse cultural settings, and valid and reliable risk taking measures. As a result, it becomes even more imperative to develop a clear and consistent understanding of SB's health ramifications. In addition to future research, this study has implications for education and preventive interventions by universities as well as the tourism industry.

### *Future Research*

Results reported here become more illuminating in view of the fact that binge drinking has been consistently associated with a higher occurrence of unplanned sex, alcohol related driving injuries and

fatalities, sexual and physical assaults, date rape, physical injury, criminal mischief, property damage, and trouble with law enforcement (Presley, Meilman and Lyerla 1993; Wechsler 1999). In addition to excessive alcohol consumption, the cloak of anonymity that being a tourist provides, substantial levels of social interaction, and an environment of permissiveness (by both peers and the destination community), all facilitate students' risk taking, which is further exacerbated by a complex biochemical relationship between alcohol consumption and sexual behavior. Even at low concentration levels, alcohol works as a physiological depressant on sexual behavior; however, changes in sexual behavior 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 related to socially learned expectancies of its likely effects (MacAndrew 1969). Considering the explosive interaction between high alcohol consumption levels and facilitating situational conditions, SB becomes an incubator for extreme risk taking by young adults through the convergence of binge drinking, drug use, casual sex, and irregular condom use.

Within this framework, the authors plan to enhance the methodological and theoretical facets of this investigation to foster a better understanding of the SB phenomenon. While this small-scale pilot study of this phenomenon yielded the data for this paper, a more comprehensive investigation into the topic is clearly warranted. These data are useful in planning a future study involving the expansion of the theoretical model with the introduction of personality constructs (e.g., sensation seeking, impulsivity, risk perceptions) as potential other predictors. It is important to also implement measures for biochemical processes of risk taking and short and long term consequences (carryovers) of SB indulgences, ranging from ongoing drinking problems to STIs acquired during break. Improvements to the instrument are clearly needed to more accurately measure constructs—particularly in light of the results presented here. A combination of qualitative and quantitative methods (via surveys and interviews) is expected to improve student feedback regarding behaviors. Improvements are also needed with regard to terms of reference, for example the definitions of “sex,” “intercourse,” “fooling around,” and more recently, “oral sex” must be indubitable before making generalizations.

In addition, a more accurate understanding about young adults' perceptions of self and their views regarding the appropriateness of casual sex, commitment to relationships, and the SB setting is vital. For instance, a consistency between students' views and their actual behaviors could be interpreted as evidence of the influence of general value systems 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 behavior, has the potential to contribute more to the puzzle of the etiology of young adults' health risk behaviors, which in turn can assist in developing more effective interventions, especially considering the challenges involved.

### *Implications and Management Recommendations*

Developing successful and timely education and prevention messages for bingeing and safe sex relevant for college students is particularly challenging. As if the process of influencing young adults' alcohol and sex decisions and behavior was not sufficiently complex, the pressures exerted on young adults to "fit in" during SB and associated peer influences to participate in risk taking further complicate matters. While a number of creative ideas can be put forth in order to educate college students about the potential health risks of careless behaviors and sway them away from reckless activities, it would be naive to think that college students can be easily influenced.

Several recommendations are presented in Table 6, which involve education and preventive interventions. For such efforts to be effective, they need to be multipronged and to be rooted in multiple sources,

**Table 6. Recommendations for Education and Preventive Interventions**

University Efforts	Tourism Industry	Popular Media	Researchers
Coordinated efforts by student health services prior to SB to increase student awareness of SB risks:	SB destinations and their health departments can help to protect students by:	The impact of MTV's annual coverage of the traditional SB on college students' perceptions is undeniable.	For more innovative interventions, Holmes (2002) suggests conducting studies to:
Informational pamphlets	Distributing condoms at hotels, local bars, and nightclubs	The 2-week coverage of that year's most popular SB spot repeatedly airs a variety of suggestive contests (often partially blurring the screen to hide nudity), excessive drinking, and other dimensions of the atmosphere described in this paper. In this case, the power of the popular media becomes detrimental to college students because MTV presents such SB activities not only as acceptable but desirable.	Gain additional insight into the interaction between individual behaviors, behaviors of sex partners, characteristics of sexual partnerships, and social and sexual networks
Free condoms	Providing shuttle services for intoxicated spring breakers unable to drive. Assuring stronger enforcement of local substance laws	Although ratings determine programming decisions, the media's impact can be used to convey healthier messages to students through:	Target patterns of sexual mixing among college students at highest risk (who drink excessively and participate in casual sex during SB) for acquiring and transmitting infections
Targeted education on risks of bingeing and casual sex in various formats:	Practicing more socially responsible marketing efforts to promote healthier SB activities to attract students and discounts for alcohol-free events vs. incentives to binge with ads for drink specials and other promotions (e.g., "all-you-can-drink," "twofers," "coin nights," "ladies nights," "bladder busts," "bar crawls," "keg parties")	Socially responsible advertising to communicate the often irreversible risks of bingeing and casual sex with slogans that can sway youth away from their dangers (by making it "cool" to do so)	It is also recommended that researchers pursue explanations of SB health-risk behaviors through the use of psychosocial theories.
SB specific workshops prior to departure (voluntary attendance) with testimonials from peers to increase credibility of information and emotional impact on students	Cooperative marketing efforts between SB destinations, SB travel organizers, and colleges	[The possibility of lobbying for such cooperation should be actively explored by the Association of American Colleges and Universities.]	
A required 1-credit course for freshmen with focus on risks of bingeing, drug experimentation, casual sex, and STIs/HIV	[Travel organizers soften conduct intensive marketing efforts to students on campuses after obtaining university permission. Universities need to place responsible marketing conditions on such promotions (i.e., not offering hard-to-resist drink discounts, enforcing the legal drinking age).]		
Systematic promotion of alternative SB vacations (e.g., public service, outdoor recreational activities, non-alcoholic MTV-like SB activities) via professionally produced video presentations to demonstrate the fun and benefits of alternative SBs			

such as universities, the tourism industry specializing in SB vacations, and the popular media, while researchers continue to increase their understanding of factors that lead to problems college students face. **A**

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