

11-1-2011

# Peer Influence: Use of Alcohol, Tobacco, and Prescription Medications

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## Abstract

**Objective:** Risk-taking behavior (e.g., alcohol abuse, tobacco usage, misuse of prescription medications) among college students is a widespread problem. Our study focused not only on the frequency of risky health behaviors in college students, but also the companions with whom they engaged in such behaviors.

**Methods:** Three hundred and twelve college students completed a survey examining the frequency with which they engaged in alcohol, tobacco, and improper prescription medication use, as well as with whom they were most likely to engage in these behaviors.

**Results:** Results indicated that participants were most likely to take health risks when accompanied by someone they consider a friend. Results also indicated gender differences in risk taking behaviors, as well as an interaction effect between companion and gender.

**Conclusions:** This information would be useful when developing preventive interventions for college students. Implementing interventions which are specific to certain populations might generate greater success in reducing risk-taking behavior.

**Keywords:** college students, gender, peer influence, health risk behaviors

Research suggests that stress has been increasing in college students over the past few decades. Social Cognitive Theory <sup>1</sup> suggests that students may learn to cope with stress by watching how those they closely interact with deal with stressors. According to Social Cognitive Theory, people learn through interaction with others in their environment. Individuals may be more likely to engage in risky health behaviors when around others also engaged in those behaviors. Peer influence in the university setting must be examined more closely to better understand why this occurs. In an environment where more risky behavior is taking place, it could be much easier for students to decide to experiment with drugs and alcohol for the first time or to increase their current usage. In addition, students are more likely to engage in risk-taking behavior in a group than when alone. <sup>2</sup> Thus, it appears that peers play an important role in risk-taking behavior. However, previous research suggests that specific peers might have an even greater influence in the decision to engage in these unhealthy behaviors. In one study, researchers <sup>3</sup> found that both romantic partners and close friends' risk-taking behavior (cigarette use) was influential on young adult cigarette smoking. While this study shows the influence of specific peers on risk-taking behavior, researchers argue that it is just one of a number of factors contributing to adolescent risky behavior. While the influence of peers has been largely studied <sup>4</sup>, it seems that this relationship is far more intricate and complex than once believed. More research is needed to understand this concept. Below we will discuss the health behaviors proposed to be influenced by peers.

## Alcohol use

Perhaps one of the most researched health risk behaviors; alcohol use is a common problem among college campuses nationwide that can have serious negative effects. National research studies <sup>5</sup> show that college students are more likely than their peers not enrolled full-time to have used alcohol in the past month, binge drink, and drink heavily. This same research study also indicates that nearly 60 percent of full-time students are current drinkers. As a result of the high drinking rate, college students face a higher risk of encountering problems associated with drinking, including: academic problems, unsafe sex, driving under the influence, injury, or even death. <sup>6</sup> For example, one study <sup>7</sup> reported that in one year over half a million students between the ages of 18 and 24 were unintentionally injured while under the influence of alcohol. Negative effects of alcohol consumption can impact more than the drinker (e.g., assault, vandalism, property damage, and so forth). Researchers <sup>7</sup> report that in one year, 696,000 students between the ages of 18 and 24 were assaulted by another student who had been drinking. In addition, over three million students between the ages of 18 and 24 drive under the influence of alcohol each year, with almost two thousand college students between the ages of 18 and 24 dying each year from alcohol-related unintentional injuries, including motor vehicle crashes.

## **Tobacco use**

Tobacco use is a precursor to grave problems such as: death, cardiovascular disease, cancer, and chronic obstructive pulmonary disease.<sup>8</sup> Although the majority of college students will likely not face these consequences during their college careers, the reality is that many people who use tobacco run the risk of becoming addicted to this drug. In fact, studies<sup>9</sup> report that college-age young adults (ages 18-25) still have one of the highest rates of tobacco use among all age groups. However, other research studies<sup>5, 10</sup> indicate that college students (27.2 percent) are less likely to use tobacco than their same-age peers (40.6 percent) who are not enrolled in college. This may be credited to the large amount of resources spent by universities in an effort to battle the tobacco companies' media efforts directed at college students. While it is rewarding to see that college student tobacco use is less compared to peers not enrolled in college, we must keep in mind that this is still a problem on university and college campuses. With nearly 17 million individuals currently enrolled in postsecondary institutions in the United States, this number can still be quite large.

## **Prescription medication use**

While it may not have been a problem in the recent past, prescription medication use among college students is a growing epidemic. The 2004 Monitoring the Future Study<sup>11</sup> reports, that for some classes of prescription medications, college student illicit use rates have reached their highest point in the last fifteen years. The National Survey on Drug Use and Health<sup>12</sup> also indicated that young adults age 18 to 25 (regardless of whether they were currently enrolled in college) reported the highest illicit use of prescription drugs, with nearly 15% using prescription medication in a manner other than prescribed within the past year. In some cases college students report higher levels of illicit use of prescription medications than their same-age peers not enrolled in college. The current study will assess how frequently college students use alcohol, tobacco, and prescription medications and with whom these risky behaviors are occurring. Both alcohol and tobacco are generally readily available and consumed in large amounts on college campuses.<sup>14</sup> It is important to understand in greater detail the reasons for engaging in these life-threatening behaviors. Prescription medication misuse and abuse has increased in the recent past. Previous studies<sup>15</sup> have examined the growing problem of opioid misuse to treat chronic pain, highlighting the need to consider misuse of prescription drugs as well as illegal use of recreational drugs among college students. Though not as heavily researched as alcohol and tobacco, prescription medications present devastating health problems as well. Furthermore, previous research indicates that risky health behaviors may vary by gender as well as with whom one associates (e.g., negative peer influence).

## **Gender**

The literature seems both agree and disagree in some instances concerning gender differences that exist in college students' use of alcohol, tobacco, and prescription medications. For example, studies<sup>13</sup> have reported that males were more like to drink and binge drink than females. In addition, college men reported higher rates of past-year illicit use of some prescription drugs than did college women. However, there seems to be inconsistent findings concerning college student tobacco use. The majority of studies seem to indicate that males are more likely to use smoke cigarettes than females; however, other studies suggest that females may be higher users than males. More research is needed in this area to address this disparity.

## **Present study**

The purpose of the present study was to examine factors influencing risk-taking behaviors among college students in order to examine the context in which college students engage in these behaviors. We were interested in examining the relationship between participants' risky behavior and with whom the participants in engaged in the particular behavior. We hypothesized that college students would be more likely to engage in risky health behaviors with others (significant other, friends, or family) than when alone. Based on previous literature, we also expected to see certain gender differences; men would be more likely to drink and binge drink than women.<sup>13</sup>

## Methods

### Participants

Participants consisted 312 students (154 males, 158 females) who were recruited from a population of students enrolled in general psychology at a large public university in the Rocky Mountain region. The university institutional review board approved all procedures before initiation of the research project. As the survey was anonymous, consent was implied with agreement to complete the survey.

Inclusion criteria: Inclusion criteria are as follows: A) students needed to be enrolled in a general psychology course; B) students needed to participate in research studies as part of an extra credit opportunity in their respective psychology course.

Recruitment: This survey was made available to all students enrolled in a general psychology course. Students had the option of selecting the research study they wanted to participate in.

Data collection: Data was collected online using Qualtrics. Researchers had no direct contact with participants in this study. If a participant had any question, he or she would contact the researchers via email.

### Materials

An original survey was created using the Youth Risk Behavior Survey (YRBS)<sup>16</sup> as a model. The YRBS assesses health behavior among adolescent populations. The YRBS was created in order to develop better health education for adolescent populations. We were interested in similar health behaviors among older adolescents (college students). Extensive research has been conducted on the reliability and validity of this survey. Questions were asked to further examine risk-taking behavior; with whom it is occurring and to what extent. Questions asked about three types of risky health behavior: alcohol consumption, tobacco use, and prescription drug abuse. As questions were analyzed individually, Chronbach's alphas were not assessed.

*Alcohol consumption.* Participants were also asked two questions about their alcohol usage with four subparts each. First, participants were asked about their frequency of consumption. *During the past 30 days, on how many days did you have at least one drink ("drink" being defined as 12 ounces of beer, 4 ounces of wine or 1 ounce of liquor) of alcohol while: a) by yourself, b) with your significant other, c) with friends, and d) with family members?* Next, participants were asked about their binge drinking frequency. *During the past 30 days, on how many days did you have 5 or more drinks ("drink" being defined as 12 ounces of beer, 4 ounces of wine or 1 ounce of liquor) of alcohol in a row, that is, within a couple of hours while: a) by yourself, b) with your significant other, c) with friends, and d) with family members?* Participants' responses to these questions varied from 0 days (did not drink alcohol) to all thirty days. Questions were analyzed individually. Thus, there were eight responses recorded for the alcohol portion of the survey. The Cronbach alpha for this sample was .85.

*Tobacco use.* Participants were asked two questions about their tobacco usage with four subparts each: 1) *During the past 30 days, on how many days did you smoke cigarettes or cloves while: a) by yourself, b) with your significant other, c) with friends, and d) with family members?* 2) *During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip, such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen while: a) by yourself, b) with your significant other, c) with friends, and d) with family members?* Participants' responses to these questions varied from 0 days (did not smoke) to all thirty days. Similar to the YRBS, questions were analyzed individually. Thus, there were eight responses recorded for the tobacco portion of the survey. The Cronbach alpha for this sample was .92.

*Prescription medications.* To assess use of prescription medications, participants answered two different questions with four subparts each. The first question pertained to medications prescribed to the participant. *During your life, how many times have you taken a higher dose than recommended of prescription medication prescribed to you while: a) by yourself, b) with your significant other, c) with friends, and d) with family members?* The second question pertained to medications prescribed to others. *During your life, how many times have you taken a prescription medication prescribed to someone else while: a) by yourself, b) with your significant other, c) with friends, and d) with family members?* Participants' responses to these questions varied from 0 times to 40 or more times. Questions

were analyzed individually. Thus, there were eight responses recorded for the prescription medication portion of the survey. The Cronbach alpha for this sample was .88.

## Procedure

Participants completed an online survey measuring risky behavior (use of alcohol, tobacco, and prescription medications) and with whom (self, significant other, friends, family) they would engage in negative behaviors with. The survey was made available to students using Qualtrics, an online survey tool. Participants were given access to the URL, and could complete the survey individually and at their convenience. Participants were given 30 minutes to complete the survey. After completion of the survey, participants were given credit by the researchers for their participation in the study. This credit was used towards meeting requirements of each participant's respective psychology course.

## Results

### Participants

Participants ranged in age from eighteen to fifty ( $M = 20.24$ ;  $SD = 4.27$ ). Caucasians made up the majority of participants ( $n = 274$ ; 88%); followed by Latinos ( $n = 22$ ; 7%); Asian American ( $n = 8$ ; 2%); American Indian or Alaska Native ( $n = 7$ ; 2%); Hawaiian or Pacific Islander ( $n = 6$ ; 2%) and finally African American ( $n = 5$ ; 1%).

### Data analysis

For each question, a repeated measures ANOVA was conducted using companion (by yourself, with your significant other, with friends, with family members) as the within subjects variable and gender (male, female) as the between subjects variable. Results of the multivariate analyses will be discussed below (see Table 1 for means and standard deviations). There were some gender differences in the variables of interest. For example, men were more likely than women to drink alcohol,  $F(1, 302) = 4.63$ ,  $p < .05$ , and more likely to use chewing tobacco than were women  $F(1, 300) = 12.40$ ,  $p < .01$  (see Table 1). There was a trend for men to binge drink more often than women,  $F(1, 296) = 3.72$ ,  $p = .06$ . There were no gender differences in cigarette use  $F(1, 305) = 1.99$ , misuse or abuse of one's own prescription medications  $F(1, 296) = .76$ , or misuse or abuse of other's prescription medications  $F(1, 297) = .98$ .

### Alcohol consumption

Participants were more likely to drink a single drink in the presence of someone else  $F(3, 302) = 70.45$ ,  $p < .01$ , specifically with their friends (see Table 1). We also found an interaction effect between companion and gender  $F(3, 302) = 3.71$ ,  $p < .05$ . Men were much more likely to drink alone than were women, whereas women were slightly more likely to drink with a significant other than were men (see Table 1).

Participants were more likely to drink multiple drinks in the presence of someone else  $F(3, 296) = 80.95$ ,  $p < .01$ , specifically with their friends (see Table 1). We saw a trend forming in the interaction results  $F(3, 296) = 2.19$ ,  $p = .09$ . Men were more likely than women to drink multiple drinks with their friends or by themselves.

### Tobacco use

Participants were more likely to smoke cigarettes in the presence of someone else  $F(3, 305) = 35.03$ ,  $p < .01$ , specifically with their friends (see Table 1). We did find an interaction effect between companion (person with whom participants engaged in risky behavior) and gender  $F(3, 305) = 3.82$ ,  $p = .01$ . Men were more likely than were women to smoke alone or with friends, but women were more likely than men to smoke with their family members (see Table 1).

There was a significant interaction of companion on chewing tobacco  $F(3, 300) = 8.27$ ,  $p < .01$ . We also found an interaction effect between companion and gender  $F(3, 300) = 7.87$ ,  $p < .01$ . Men were more likely to use chewing tobacco with their friends or by themselves, while use of chewing tobacco had very little variation across companion for women (see Table 1).

## Prescription medications

Participants were more likely to use misuse or abuse their own prescription medications by themselves  $F(3, 296) = 34.86, p < .01$  (see Table 1). Results were nonsignificant when examining the interaction of companion and gender  $F(3, 296) = 1.65$ .

Participants were more likely to misuse or abuse of others' prescription medications in the presence of others  $F(3, 297) = 9.95, p < .01$ , specifically their friends (see Table 1). Results were nonsignificant the interaction of companion and gender  $F(3,297) = .35$ .

## Comment

Our results are in line with Social Cognitive Theory and show that in most cases, college students engaged in risk-taking behaviors in the presence of someone else. It was expected that peers would have an influence on participant substance use and involvement in risky behaviors; though the pattern that developed was by no means predicted before the actual study was conducted. The different contexts (self, significant other, friends, or family) in which negative behaviors occur developed into an interesting pattern. We believed that in the company of peers, participants would be more likely to engage in risk-taking behavior due to their presence. For most risk-taking behaviors, the pattern was as follows: friends, self, significant other, and family members. Participants were in fact significantly more likely to engage in risk-taking behavior (smoking cigarettes or cloves; use of chewing tobacco; single and multiple drinks; and abuse or misuse their own and others' prescription medications) in the presence of others, specifically their friends.

One explanation could be that friends might be more likely to pressure each other into engaging in risk-taking behaviors, whereas this pressure might not be experienced coming from a significant other or family members. Future research might explore this idea in greater detail. Students might also place more value on the perceptions of their peers rather than a significant other or family member, due to the amount of interaction they have with peers. Social Cognitive Theory would tell us that students are more likely to follow the influence of peers due to increased interaction alone. We must also consider conformity in this situation. For example, students might find themselves in situations where risky behaviors are taking place (e.g. their dorm room), and might find it difficult to resist engaging in these behaviors. Though the interaction with friends has been examined to some extent, there is a need to observe it more closely. Participants did engage in risk-taking behaviors with a significant other or family member; however, this happened less frequently than risk-taking behaviors with someone considered to be a friend by the participant. The results of our study show the strong influence friends have on participants in decision making even into young adulthood; but even more specifically with risk-taking behavior.

Participants in our study (mostly in their late teens and early 20s) were more likely to engage in risk-taking behavior in the presence of their peers. It is crucial to discover what factors lead to the decline in risk-taking behavior for young adults in their middle to late twenties. Perhaps these same factors could be applied to younger populations in hopes of preventing or reducing risk-taking behavior. The next step might be to conduct a similar study with adolescents to see if in fact the risk-taking behavior has declined over time.

## Gender differences

Males were much more likely than females to use chewing tobacco. Chewing tobacco needs to be examined more closely as it seems that this risk-taking behavior is not as widespread as other behaviors. However, as is often the case with self-report, researchers may not have the full representation of this behavior. Males were also much more likely than females to drink alcohol, which is consistent with the literature on alcohol use among college students.<sup>9</sup>

Interestingly, we found an interaction effect on three different variables (smoking, chewing tobacco, and drinking a single drink) and saw a trend forming on one other variable (binge drinking). Males used chewing tobacco and drank multiple drinks more often than females in all contexts (self, significant other, friends, and family). Though male's use was typically higher in most situations, there were instances where female risky behavior was higher than males (e.g., smoking cigarettes with family members and drinking a single drink with a significant other). This information

would be important to include to successfully developing interventions in the future. Future research towards developing interventions might further examine these findings and incorporate them into the structural framework.

### **Limitations**

Participants were primarily Caucasian and enrolled in a general psychology course from a single university in the Rocky Mountain region. It is unclear whether factors such as race or ethnicity, course selection, or region of the country may influence these behaviors. Future research might conduct a similar study in a different part of the country encompassing these different factors (diversity, course selection, and geographic location) into the study. In addition, participants were all college students. Thus, it is unclear whether similarly-aged individuals who are not enrolled in college might have correlated behavior patterns. Future research might examine the behavior of college-age students not enrolled in college.

Future research should also examine if this pattern is consistent among different populations. This might assist researchers in addressing risk-taking behavior and the possibility of applying these results to the general population. Examining this pattern more closely might also tell researchers where interventions need to be reexamined or restructured to provide the most benefit for participants. Future research might also see if there is a difference among ethnicities with regard to peer influence. We would be interested to see if for example Latinos are more prone to peer influence than other groups and begin to examine why this might be. There is a need to also examine the effect of peer influence on a combination of risk-taking behaviors (e.g., drinking and driving). We must realize that the majority of these behaviors are not engaged in individually. For the most part these risk-taking behaviors occur simultaneously (smoking cigarettes and drinking alcohol). This factor could explain some of the risk-taking behavior occurring among college students.

### **Conclusions**

Our findings highlight the intricacy involved in peer influence and risk-taking. Behavior (alcohol, tobacco, or prescription medication use), companion (self, significant other, friends, and family members), and gender all play a significant role in attempting to explain risk-taking behavior. Though other studies have examined risky behavior among college students, our results add to the literature by providing some explanation of the different influences college students have to engage in these behaviors. From this study we can see that not all influences carry the same weight to engage in these acts. The keystone of our study is the interaction effects we found with risk-taking behavior. We have a better understanding that explaining risk-taking behavior may not be as simple as before. We see that addressing college student risky behavior may not be a one size fits all approach. We found that men engage in certain risk-taking behaviors more than women do, and vice-versa; while also discovering with whom this behavior is occurring. Our study adds a specific piece of information to the literature on risk-taking behavior. University health professionals and administrators may wish to keep this in mind when designing freshman orientations. The initial orientation could serve to facilitate in educating these students about potential risks involved in the transition to college life. Students need to understand that they are more at risk for engaging in specific risky (or illegal) health behaviors with their peers than they may be with others. Thus, campus orientation leaders could discuss ways to resist peer pressure during orientation sessions.

## References

1. Bandura A. Social foundations of thought and action: A socialcognitive theory. Englewood Cliffs, NJ: Prentice-Hall. (1986).
2. Monahan K, Steinberg L, Cauffman E. Affiliation with antisocial peers, susceptibility to peer influence, and antisocial behavior during the transition to adulthood. *Developmental Psychology* [serial online]. November 2009;45(6):1520-1530. Available from: PsycARTICLES, Ipswich, MA. Accessed October 21, 2010.
3. Etcheverry PE, Agnew CR. Romantic partner and friend influences on young adult cigarette smoking: Comparing close others' smoking and injunctive norms over time. *Psychol Addict Behav*. 2008;22:313-325.
4. Steinberg L, Monahan KC. Age differences in resistance to peer influence. *Dev Psychol*. 2007;43:1531-1543.
5. Substance Abuse and Mental Health Services Administration. (2009). *Results from the 2008 National Survey on Drug Use and Health: National Findings* (Office of Applied Studies, NSDUH Series H-36, HHS Publication No. SMA 09-4434). Rockville, MD.
6. National Institute on Alcohol Abuse and Alcoholism. A snapshot of annual high-risk college drinking consequences. <http://www.collegedrinkingprevention.gov/StatsSummaries/snapshot.aspx>. Updated July 1, 2010. Accessed July 22, 2010.
7. Hingson RW, Edwards EM, Heeren T, Rosenbloom D. Age of drinking onset and injuries, motor vehicle crashes, and physical fights after drinking and when not drinking. *Alcohol Clin Exp Res*. 2009 May;33(5):783-90. Epub 2009 Mar 6.
8. Centers for Disease Control and Prevention. Health, United States, 2008. Hyattsville (MD): Centers for Disease Control and Prevention, National Center for Health Statistics, 2009 [accessed 2010 Oct 15].
9. Centers for Disease Control and Prevention. Vital signs: Current cigarette smoking among adults aged  $\geq 18$  years—United States, 2009. *MMWRMorb Mortal WklyRep*. 2010;59:1135–1140.
10. Murphy-Hoefer R, Hyland A, Rivard C. The Influence of Tobacco Countermarketing Ads on College Students' Knowledge, Attitudes, and Beliefs. *Journal of American College Health* [serial online]. January 1, 2010;58(4):373-381. Available from: ERIC, Ipswich, MA. Accessed July 21, 2010.
11. Johnston LD, O'Malley PM, Bachman JG, & Schulenberg JE. *Monitoring the future national survey results on drug use, 1975–2008: Volume II, College students and adults ages 19–50*. Bethesda, MD: National Institute on Drug Abuse; 2009. NIH Publication No. 09-7403.
12. Substance Abuse and Mental Health Services Administration. *Results from the 2009 national survey on drug use and health: Detailed tables*. Rockville, MD: Office of Applied Studies; 2010.
13. Harrell Z, Karim N. Is gender relevant only for problem alcohol behaviors? An examination of correlates of alcohol use among college students. *Addictive Behaviors* [serial online]. February 2008;33(2):359-365. Available from: PsycINFO, Ipswich, MA. Accessed July 22, 2010.
14. Nigg C, Lee H, Hubbard A, Min-Sun K. Gateway Health Behaviors in College Students: Investigating Transfer and Compensation Effects. *J Am Coll Health*. 2009;58:39-44.
15. Denisco RA, Chandler RK, Compton WM. Addressing the intersecting problems of opioid misuse and chronic pain treatment. *Exp Clin Psychopharmacol*. 2008;16:417-428.
16. National Center for Chronic Disease Prevention and Health Promotion. Youth Risk Behavior Surveillance System (YRBSS). Available at: [http://www.cdc.gov/HealthyYouth/yrbs/questionnaire\\_rationale.htm](http://www.cdc.gov/HealthyYouth/yrbs/questionnaire_rationale.htm). Accessed December 7, 2008.



Table 1

*Means (and Standard Deviations) of Alcohol, Tobacco, and Prescription Medications by Companion and Gender*

	<i>Self</i>	<i>Significant other</i>	<i>Friends</i>	<i>Family</i>
<i>Male</i>				
One Drink	1.81 (1.27)	1.62 (1.09)	2.49 (1.43)	1.51 (.87)
Multiple Drinks	1.38 (.94)	1.42 (.92)	2.33 (1.53)	1.32 (.75)
Cigarettes	1.85(1.87)	1.35 (1.22)	1.92(1.71)	1.08 (.46)
Chewing Tobacco	1.42 (1.39)	1.19 (.91)	1.42 (1.30)	1.19 (.93)
Own Prescriptions	1.74 (1.25)	1.26 (.84)	1.52 (1.12)	1.23 (.78)
Others' Prescriptions	1.52 (1.08)	1.32 (.92)	1.55 (1.16)	1.29 (.78)
<i>Female</i>				
One Drink	1.39 (.89)	1.63 (1.06)	2.22 (1.30)	1.39 (.74)
Multiple Drinks	1.17 (.57)	1.41 (.98)	2.00 (1.38)	1.23 (.72)
Cigarettes	1.52 (1.48)	1.34 (1.13)	1.57 (1.46)	1.10 (.53)
Chewing Tobacco	1.01 (.08)	1.01 (.11)	1.01 (.11)	1.00 (.00)
Own Prescriptions	1.61 (1.14)	1.26 (.88)	1.33 (.99)	1.21 (.72)
Others' Prescriptions	1.43 (.94)	1.23 (.82)	1.42 (.99)	1.26 (.71)