Alcohol Consumption, Risky Behaviors, and Perceptions of Alcohol- Related Social Norms

among First-Year College Students at the

University of Wisconsin-Stout

by

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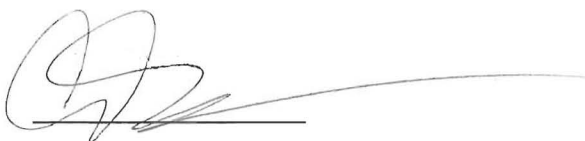Requirements for the Master of Science Degree
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Abstract

The purpose of this study was to investigate first-year students' alcohol consumption, risky

behaviors, and their perceptions of the average UW-Stout student's alcohol related behaviors.

Participants were 1033 incoming college students at a small, public university in the Midwest

who completed a self-report survey. Participants were classified as either heavy or non-heavy

episodic drinkers as defined by the DSM-IV criteria. Participants classified as heavy episodic

drinkers reported being more likely than non-heavy drinkers to engage in risky behaviors

themselves and to perceive that engaging in risky behaviors was the norm. There was also a

positive relationship between self-reported alcohol consumption and perceptions of the average

student's alcohol consumption. Results provide support for the social norms theory and suggest

the social norms interventions at UW-Stout targeting high-risk groups such as first-year students

may be effective.

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Chapter I: Introduction

Statement of the Problem

Excessive alcohol consumption among college students is a prevalent and on-going health concern for universities across the nation. First-year college students consume substantially higher quantities of alcohol relative to subsequent class years and non-college students. Furthermore, first-year college students participate in heavy episodic drinking more frequently than any other college students (Borsari, 2007). Heavy episodic drinking is defined by the *Diagnostic and Statistical Manual of Mental Disorders,* as five or more drinks per occasion in the past two weeks for men and four or more drinks for women (4th ed.; DSM-IV; American Psychiatric Association, 2000). Several factors have been empirically researched and determined to be associated with excessive alcohol consumption among the general college population and first-year student subpopulations.

The factors that are associated with excessive alcohol consumption among first-year students fall into two categories. The first category is defined by six factors that preceed college enrollment and help identify and predict risk for elevated alcohol consumption during the first-year. The second category includes six factors that define how and why entering college affects first-year alcohol use. Research indicates that social norms are potentially the strongest predictor of alcohol consumption during the first year (Kraemer, 2001). Students misperceive and overestimate the amount of alcohol the average student at their university consumes and attempt to compensate by consuming excessive quantities of alcohol. Excessive alcohol consumption among first-year students has been linked to extensive negative consequences.

The potential negative consequences specific to first-year students are increased risk of bodily injuries, sexual assault, and death. Over the course of the last two years there have been

seven alcohol related deaths within the general student population at UW-Stout (Giffey, 2010).
None of the seven alcohol related deaths have included first-year students, but as research
conducted by Borsari (2007) indicates first-year students consume substantially greater quantities
of alcohol compared to subsequent years. Furthermore, first-year students are at an even higher
risk to experience negative consequences resulting from excessive alcohol consumption. These
negative consequences are at their highest level during the first year of college compared to
subsequent college years (Perkins, 2002). Attempts to provide accurate information concerning
the amount of alcohol the average college student consumes have been initiated across college
campuses nationwide. Moreover, initiatives have targeted specifically first-year students as an
attempt to reduce excessive alcohol consumption among this population (Berkley-Patton, 2003).
Similar initiatives have been implemented at the University of Wisconsin-Stout, these initiatives
focus on the general student population and not the at-risk subpopulation of first-year students.

Purpose of the Study

The purpose of this study is to investigate social norms and the role they play in first-year
student alcohol consumption behaviors. First-year students' alcohol consumption per occasion
and per week was investigated. Furthermore, the prevalence of heavy episodic drinking among
first-year students was determined. Social norms were examined by determining students'
perceptions of the average students' alcohol consumption per occasion and per week.
Additionally, associations between student and perceived peer alcohol consumption were
examined.

Results of this study could extend intervention strategies that are currently aimed at the general student population. Extensions include targeting the at-risk subpopulation of first-year students. First-year students could be provided with current and accurate information concerning the alcohol consumption behaviors of the average first-year student. Current and accurate information is necessary to correct peer misperceptions and consequently reduce first-year student alcohol consumption (Perkins, 1996; Wechsler, 2003; Berkley-Patton, 2003). The reduction of alcohol consumption among first-year students could reduce alcohol-related negative consequences experienced by first-year students at UW-Stout.

Hypotheses of the Study

H_1: First-year UW-Stout students will report consuming significantly less alcohol per occasion and per week than they perceive the average UW-Stout student consumes.

H_2: First-year students at UW-Stout will participate in heavy episodic drinking at a level comparable to first-year students at other UW-System schools.

H_3: First-year UW-Stout students will perceive that the average UW-Stout student participates in heavy episodic drinking more than the first-year students do.

H_4: First-year students who meet the criteria for heavy episodic drinking will report consuming more alcohol per week, driving under the influence of alcohol, not counting their drinks, using tobacco, and having more sex partners during the past year compared to students who do not meet the criteria.

H_5 First-year students who meet the criteria for heavy episodic drinking will report that they think their grade-point average (GPA) in the upcoming semester will be lower than students who do not report engaging in heavy drinking.

H_6: First-year students who meet the criteria for heavy episodic drinking will perceive that their peers consume more alcohol per week, drive under the influence of alcohol, use tobacco, and have more sex partners per year compared to students who do not meet the criteria.

H_7: First-year students who meet the criteria for heavy episodic drinking will perceive that a smaller proportion of their peers receive a GPA of 3.0 or higher than students who do not meet the criteria.

H_8: First-year students who meet the criteria for heavy episodic drinking will perceive that a smaller proportion of their peers count their drinks than students who do not meet the criteria.

H_9: First-year UW-Stout students' own estimations of alcohol consumption will be associated

with their estimations of the average UW-Stout students' alcohol consumption.

Limitations of the Study

      The results described in this study are from only one university regarding first-year

students' alcohol use and perceived peer alcohol use. Thus, these findings may not generalize to

other universities and other first-year students. This research is based on self-report data, which

is vulnerable to the error of memory loss, inaccurate memories, and students' falsifying

information due to the nature and sensitivity of the questions. Furthermore, students' perceptions

of their drinking behaviors, GPA, sexual behaviors, tobacco use, and driving under the influence

of alcohol may be unreliable measures of the students' actual behaviors and outcomes.

Furthermore, the study's cross-sectional, correlational nature limits causal inference.

Chapter II: Literature Review

Alcohol misuse among college students is a prevalent and an ongoing health concern. Each year approximately 70% of all college students report consuming alcohol in the past 30 days. Furthermore, an estimated 31% of all students engage in heavy episodic drinking compared too, 54% of Wisconsin students (University of Wisconsin System, 2007). Heavy episodic drinking is defined as five or more drinks per occasion in the past two weeks for men and four or more drinks for women (Tremblay, 2010). Furthermore, 12% to 31% of students qualify for a clinical diagnosis of alcohol abuse, and 6% for a diagnosis of alcohol dependence (Knight, 2002). The criteria for diagnosis are defined by the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; DSM-IV; American Psychiatric Association, 2000).

There are several factors associated with excessive alcohol consumption that may provide an understanding why it is prevalent among college students, including family history, genetics, psychological processes such as the perceived effects of alcohol, motivation to drink, interpersonal (e.g., social and peer) relations, and social norms. Furthermore, college-specific social contexts and activities that the student selects (e.g., athletics or fraternities) are also important factors (Baer, 2002). A critically important factor appears to be year in school, as research suggest that first-year students consume alcohol at substantially greater levels than other college students (Montemayor, 1991; Baer, 1995; Perkins, 1996).

The first year in college for students is an important transitional stage defined by increased personal independence, reduced parental control, and new social contexual factors (e.g., new friends and living arrangments; Perkins,1996). The transitional period is also distinguished by elevated risk-taking behaviors that include excessive alcohol consumption. Nationally, 46% of first-year students have reported one or more episodes of heavy drinking in

the past month (Wechsler, 2002). Moreover, 48% of first-year students attending college in Wisconsin reported engaging in heavy episodic drinking (University of Wisconsin System, 2007). Furthermore, a considerable amount of first-year college students, between 10 to 20%, reported consuming alcohol at two times the heavy episodic drinking benchmark of 4-5 drinks per occasion (Borsari, 2007). Several factors specific to first-year students that influence alcohol consumption have been identified. Using these factors to remedy excessive alcohol abuse among first-year students may result in improved alcohol abuse interventions.

First-Year Alcohol Consumption Contributing Factors

The factors that help predict first year alcohol consumption are specific to first-year students and are defined by two categories. The first category is defined by factors that precede college enrollment and help identify and predict the students at risk for elevated alcohol consumption during the first year. The second category is comprised of six factors that define how and why entering college affects alcohol consumption among first-year students. Pre-college factors include race, sensation-seeking, gender, religiosity, parental influences, and pre-college alcohol use. First-year factors include coping, alcohol expectancies, drinking motives, Fraternity and Sorority membership, drinking game participation, and potentially the most significant, social norms (Kraemer, 2001). Research comparing first-year students and upperclassmen concluded that the influence of social norms were the strongest during the first year of school. These findings suggest that first-year students perceive that their peers are more approving of alcohol use than students really are. As a result, the student perceives that the environment is supportive of heavy drinking and the student may feel more pressure to drink heavily (Borsari, 2001). Due to the excessive nature of alcohol consumption among college students a plethora of negative consequences exists, especially during the first year.

First-Year Students' Negative Consequences

Student alcohol misuse results in significant negative consequences for students, peers, and institutions. The potential negative consequences that students can inflict on themselves due to misusing alcohol range from obvious physical illness to academic impairment and legal repercussions. Negative conseqences associated with peers consist of property damage, interpersonal violence, sexual violence and hate-related incidents. Lastly, institutional costs include student attrition, legal costs, and increased emotional strain on college personnel who are required to deal with student alcohol misuse (Perkins, 2002). Several of these consequences are also present among first-year students. The consequences specific to first-year students compared to students in their senior year consist of increased risk of bodily injuries, sexual assault, and death as a result of alcohol (Perkins, 2002).

Since January 2000, there has been an estimated 620 alcohol-related deaths at four-year universities within the United States. First-year students account for more than one third of the total deaths, while only representing one fourth of the student population (Borsari, 2007). Furthermore, 15% of first-year student reported alcohol related injuries during the school year, while only 11% of seniors reported alcohol related injuries. Additionally, sexual assault also declined from 14% to 10% from the first year to the students' senior year (Perkins, 2002). One reason that students consume alcohol excessively is to fit in with their peers. Peer influences can be especially influential during the first year of college (Borsari, 2007).

Social Norms Theory

Peer influences potentially have the single greatest impact on individual behavior than any other factor, including biological, personality, religious, cultural, and familial factors (Perkins, 1986; Perkins, 1996; Perkins, 1999; Wechsler, 2003). The fundamental components of peer influences are perceived norms and actual norms. Research suggests that students base their actions more on what they believe others do (perceived norms) instead of on the students' real beliefs and actions (actual norms). The gap between perceived and actual norms is referred to as a misperception (Perkins, 2002).

The majority of college students overestimate the alcohol consumption of their peers, leading them to such a misperception. Due to this misperceiption students consider high-risk drinking to be normal (Perkins,1997). Furthermore, most students tend to consider that their peers are on average more tolerant in their personal drinking attitudes than is the case and that their peers consume alcohol more heavily and more frequently than students peers actually do (Perkins, 2002).

Misperception research regarding alcohol use has been documented for over twenty years in diverse academic settings (Perkins, 1986; Baer, 1992; Perkins, 1996; Haines, 1997; Glider, 2001; Perkins, 2002). Researchers have consistently established the relationship of social norms and misperceptions regarding alcohol consumption across various academic settings. Studies have found that misperceptions of alcohol use are held by all members of campus communities including undergraduate and graduate students, faculty, staff, and student leaders (Perkins, 1986; Perkins, 1999; Perkins, 2002). Research examining the misperception phenomenon regarding alcohol consumption among college students was first conducted Perkins in 1986. The results of this first study suggested that more than 75% of the undergraduate students surveyed indicated

that one should never drink to intoxication or that intoxication was only acceptable in limited circumstances. Paradoxically, of these same students, about 66% of them indicated that they thought their peers believed that frequent intoxication was acceptable (Perkins, 1986).

There are two specific types of social norms that are related to alcohol consumption in college. Descriptive norms are defined as the perception of other students frequency and quantity of drinking, which is based largely on observations. Injunctive norms are defined as the students percieved approval or their attitudes about drinking, which influences their personal judgement concerning the acceptability of alcohol use. Students tend to overestimate both the percevied approval of alcohol consumption and other students frequency and quantity of consumption. Students often believe that other students drink more than what students actually do and that others students are more accepting of alcohol consumption than they really are (Borsari, 2007). There is limited data investigative the relationship of social norms and alcohol consumption at the University of Wisconsin-Stout. However, a study examing this relationship was conducted by collecting information concerning students' alcohol use at every two and four year college in Wisconsin by the UW-System in 2007 (University of Wisconsin System, 2007).

Social Norms and Alcohol Consumption in the UW-System

The UW system was supplied with email addresses from its undergraduate students that were enrolled in both four and two year universities as of January 2007. A random sample of 2000 students was drawn from each of the two and four-year universities in the UW-System, and students were invited to participate in an online alcohol survey. The survey asked about students' own alcohol consumption and their perceptions of the alcohol consumption of the average student attending their college. Students estimated that the average student at their college drank more per occasion and per week than what the student drank themselves. These results provides

supporting evidence that college students in Wisconsin believe their peers consume more alcohol than what students themselves actually consume (University of Wisconsin System, 2007), highlighting the promise of social norms interventions as a potentially useful alcohol abuse prevention strategy.

Social Norms Interventions

An increasing number of universities are exploring the role of social norms and peer influences as a means to alleviate excessive alcohol consumption among college students, particularly first-year students (Talbott, 2008). Various initiatives to help alleviate excessive alcohol consumption have been attempted across college campuses. One initiative in particuar has been shown to be effective, is the Social Norms Media Approach. This approach attempts to reduce student alcohol consumption by correcting misperceptions. The central premise of this approach is that by providing accurate and current information concerning the alcohol consumption levels of peers, students will begin to correct their personal misperceptions about peer alcohol use. The correction in perceptions leads to reductions in overall student alcohol consumption. As a result of providing students with accurate normative information, their alcohol consumption significantly decreased from the summer prior to starting college to the following spring semester (Perkins, 1996). Social norms campaigns founded on the premise that providing accurate information will reduce alcohol consumption has been implemented across several college campuses nationwide and targeted various student populations.

There is minimal research that exists on social norms campaigns that target first-year college students. However, the research that has been conducted exhibits promising evidence. Various social norms campaigns have been effective in reducing alcohol consumpion among first-year students. Prior research indicates that first-year students' perceptions of the average

first-year students alcohol consumption at their university can be corrected. Correcting the

perceptions of first-year students significantly reduced their alcohol consumption. The results of

the study that was conducted by Berkley-Patton (2003) at a large Midwestern university during

the summer of 1999 indicates that 64% of first-year students reported consuming five or fewer

drinks per occasion. The results also indicated that first-year students perceived the drinking of

the average student to be higher than what the student consumes themselves, with 43% reporting

that the average student consumes less than five drinks. Alcohol consumption was evaluated

again at follow-up assessment during the spring semester in 2000. During this time first-year

students were subjected to normative feedback and provided with accurate information

concerning the amount of alcohol the average student at their university consumes. When the

first-year students were assessed again during the spring semester their self-reported alcohol

consumption decreased from 5.8 drinks per occasion during the summer of 1999 to 5.2 drinks

per occasion during the 2000 spring semester which was statistically significant (Berkley-Patton,

2003).

A social norms campaign was implemented at the start of the 2008-09 academic school

year at the University of Wisconsin-Stout. The Smart and Healthy campaign currently provides

the general student population with accuarate alcohol consumption information via posters

placed in various campus buildings. The accurate information that is provided to students

indicates that the majority of students do not participate in excessive alcohol consumption. A

recent evaluation examined how effective the Smart and Healthy campaign was at correcting

students' perception of the average students alcohol consumption. UW-Stout students were asked

if they had seen the Smart and Healthy images on campus. Students were further asked at what

campus locations they had seen the images, how frequently they saw the images, and on the

medium by which the image was communicated (e.g, poster, T-shirt). The results of the evaluation suggest that the students who reported seeing the Smart and Healthy information reported less of a discrepancy between what they consumed and what they thought the average student consumed. Students who saw the campaign materials had more accurate perceptions of the average students alcohol consumption, but students personal alcohol consumption was not significantly different than the students who did not see the campaign materials. (Johnsoy, 2009).

A social norms campiagn designed to target sub-populations and also early in students academic careers is vital. The sub-population of first-year students especially needs to be targeted because they are at risk to experience more severe consequences than students in subsequent years. First-year students consume alcohol more excessively and experience more severe negative consequences than the general student population (Perkins, 2002). Empirical data suggest that social norms play an influential role in alcohol consumption among the general student population. Furthermore, social norms may play an even more significant role in influencing the amount of alcohol consumed by first-year students. However, it is currently unknown if first-year students at UW-Stout consume more alcohol on average or believe that excessive alcohol consumption is the norm at the University of Wisconsin-Stout. Furthermore, it is also currently unknown if first-year students' actual alcohol consumption levels are associated with their perceptions of peer alcohol consumption levels. For example, does the amount of alcohol students consume per occasion and per week affect what the student perceives the average student to consume. However, these questions must be answered. A social norms campaign targeting first-year students here at UW-Stout could be introduced if there was sufficient data to suggest that social norms influence alcohol consumption behavior among first-year students.

The Current Study

     The aim of this study is to assess the levels of alcohol consumption and misperceptions among first-year students at UW-Stout. This is a crucial first step in developing effective strategies aimed at correcting misperceptions and excessive alcohol consumption among these students.

     This study will investigate whether first-year students overestimate the amount of alcohol the average student at UW-Stout consumes per occasion and per week. The extent to which first-year students at UW-Stout participate in heavy episodic drinking and how they compare to other first-year students at UW-System schools and first-year students nationally will be evaluated. Moreover, perceptions of the percentage of UW-Stout students who engage in heavy episodic drinking will also be investigated.

     This study will also investigate whether students who meet the criteria for heavy episodic drinking are more likely than other students to report driving under the influence of alcohol, not counting drinks, using tobacco, consuming more alcohol per week, reporting a lower GPA, having more sex partners during the past year, and perceiving that their peers engage in these behaviors more frequently that they actually do.

     Furthermore, the relationship between first-year UW-Stout students' owns alcohol consumption and perceptions of the average UW-Stout student's alcohol consumption will be determined.

Chapter III: Methodology

The sections that follow include a description of the subjects and how they were selected, the instrumentation that was used to assess first-year students, their engagement in risky behaviors, perceptions of the average students' alcohol consumption, and the procedures used to collect and analyze the data.

Participant Description and Data Collection Procedure

The participants who participated in the survey consisted of incoming first-year students who were enrolled in one of the eight UW-Stout freshman orientation sessions that were held in the summer of 2009. A total of 1033 incoming freshman attended a summer orientation session. Demographic information was not collected on the incoming freshman during the orientation sessions. However, 91.2% of the general student population identified as Caucasian, 2.8% as Asian American, 2.2% as belonging to two or more races, 1.8% as international, 0.8% as African American, 0.7% as Hispanic American, and 0.5% as American Indian. There is almost an equal amount of male and females. Males represent 52% and females represent 48% of the general student population. It is required of all incoming freshman to attend one of the eight orientation sessions before they are allowed to register for the upcoming semester classes. However, it was not required that the students participate in the survey. The orientation sessions were held in a lecture style classroom in Millennium Hall. The students present at each of the orientation sessions viewed a PowerPoint presentation. The presentation started out by providing students with information about how inaccurate their perception of reality can be and how individuals tend to overestimate unhealthy behaviors and underestimate healthy behaviors.

Students were then asked questions concerning their GPA and what the student perceived the average students' GPA to be. Students answered questions that asked about their alcohol

consumption per occasion, per week, and what the student perceived the average student consumes per occasion and per week. Students also answered questions regarding their own tobacco use, if they have driven under the influence of alcohol, their sex behaviors, and what risky behaviors the student perceives the average student to participate in. Students responded to each question by choosing their answer on their personal remote "clicker" that was given to them at the start of the orientation session to maintain confidentiality. The questions that were of interest for this study were the questions that asked the students if they participated in driving under the influence of alcohol, if they count their drinks, their tobacco use, their sexual behaviors, how much they drank per occasion and week, and the perceptions the student had concerning the average student.

Instrumentation

There was one instrument developed for the study, The Smart and Healthy First-Year Student Survey shown in Appendix A. The Smart and Healthy First-Year Student Survey was adapted from a survey created by Baer, Stacy, & Larimer (1991).

Students responded first to a question that asked them to report how many Stout students receive a GPA of 3.0 or higher. The student could respond to this question by selecting one of five choices: 15%, 32%, 53%, 69%, or 78%. The next question asked the students to report what they believe their own GPA will be next semester. The students respond by selecting one of five choices: 2.0, 2.5, 3.0, 3.5, or 4.0. Students were asked next to report what percent of Stout students do not smoke cigarettes: 11%, 24%, 43%, 57%, 74%, or 91%. The students were asked whether they themselves smoked cigarettes.

Students were then asked about their perception of the average UW-Stout student alcohol consumption. The student was asked to estimate how many drinks they perceived the average

student to consume per occasion: 0, 1-3, 4-6, 7-10, 10-15, or more than 16 drinks per occasion. The next question asked the student to estimate how many drinks they themselves consume per occasion by selecting one of the following choices: I choose not to drink, 0, 1-3, 4-6, 7-10, 10-15, or more than 16 drinks per occasion. The next two questions were concerned with weekly alcohol consumption. Similar to the questions that asked about alcohol consumption per occasion, the student was first asked to estimate how much they perceived the average student to consume per week. The student could answer this question by selecting one of the following choices: 0, 1-3, 4-6, 7-10, 10-15, or more than 16 drinks per week. Students were asked to estimate how many drinks they consume per week by selecting one of the following choices: I choose not to drink, 0, 1-3, 4-6, 7-10, 10-15, or more than 16 drinks per week.

Students were asked how many UW-Stout students do not drive under the influence of alcohol: 27%, 38%, 52%, 68%, 79%, or 86%. Students were then asked a yes/no question about whether they had ever driven under the influence of alcohol and they could select. The students were asked to report how many UW-Stout students count their drinks: 25%, 39%, 56%, 62%, 75%, or 87% and asked to answer a yes/no question about whether they counted drinks.

The remaining questions asked the students to report how many sex partners the average UW-Stout student has per year and how many sex partners they have had during the past year. Students first responded to the question that asked them about the average UW-Stout student by selecting one of five choices: 0-1, 2-3, 4-5, 6-9, or 10 or more sex partners per year. When the students reported the number of sex partners they have had during the past year they could select one of six choices: I am not sexually active, 0-1, 2-3, 4-5, 6-9, or 10 or more sex partners during the past year.

Data analysis

After the completion of each orientation session the first-year students' data was exported into a Microsoft Excel document. Once the orientation sessions were all completed the Excel data was then merged into an SPSS file where it was cleaned and analyzed. Missing data and responses that were not within the range of possible answers were removed from the data set. Histograms with normality overlay were constructed for each of the four alcohol consumption questions to help determine normality. Histograms with normality overlay were then utilized to graphically represent the data and identify any potential outliers. After visually inspecting the histograms for each of the alcohol questions it was determined there were no violations to normality.

Students' alcohol data from the survey was analyzed using the statistical package SPSS 17.0. Frequencies were calculated first to get an overall picture of what the student consumes per occasion and per week and what the student estimates the average UW-Stout student to consume per occasion and per week. Determining how first-year UW-Stout students heavy episodic drinking compared to other first-year students heavy episodic drinking at other Wisconsin colleges and nationally a data transformation was performed to create a variable indicating whether a response met the DSM-IV criteria for heavy episodic drinking, which are more than four drinks per occasion. The DSM-IV criteria for heavy episodic drinking are five or more drinks per occasion for males and four or more drinks per occasion for females. A total of 17 participants indicated their gender so all students that reported consuming more than four drinks per occasion were labeled as heavy episodic drinkers. The value zero represents that the student does not meet the DSM-IV criteria for heavy episodic drinking; whereas a one indicates that the student does meet the criteria. The same data transformation and recoding method was also

utilized to determine perceived heavy episodic drinking for the average student. Chi square

analyses were used to determine differences between heavy drinkers and non-heavy drinkers on

drink counting, their drinks, driving under the influence of alcohol, and smoking. An analysis of

variances was used to determine differences between students' self reported alcohol consumption

and their perceived estimates of the average student's consumption per occasion and per week.

Independent samples t-test were used to determine differences between heavy drinkers and non-

heavy drinkers on GPA, drinks per week, and number of sex partners. Correlations were

calculated to determine whether students' own behaviors were related to their estimations of the

average students' alcohol consumption per occasion and per week. Analyses will be determined

statistical significant 0.05.

Chapter IV: Results

The results of this study include an examination of the levels of alcohol consumption, and misperceptions of peers' alcohol consumption and related risky behavior, among first-year students at UW-Stout. Moreover, the extent to which students participate in heavy episodic drinking and their perception of the percentage of students who engage in heavy episodic drinking was also examined. Students who meet the criteria for heavy episodic drinking and their likelihood of participating in risky behaviors such as driving while intoxicated was investigated. Students' perceptions of their peers' engagement in these risky behaviors was also investigated. Lastly, the relationship between students owns alcohol consumption and perceptions of the average students' alcohol consumption was determined.

First-Year Students' Reported Alcohol Consumption per Occasion

As shown in Figure 1, slightly less than half of the students reported to consume one to six drinks during a typical past occasion, one third of students do not consume any alcohol, and about one fourth of the students reported consuming more than seven drinks per occasion.

Figure 1. First-Year Students Reported Drinks per Occasion.
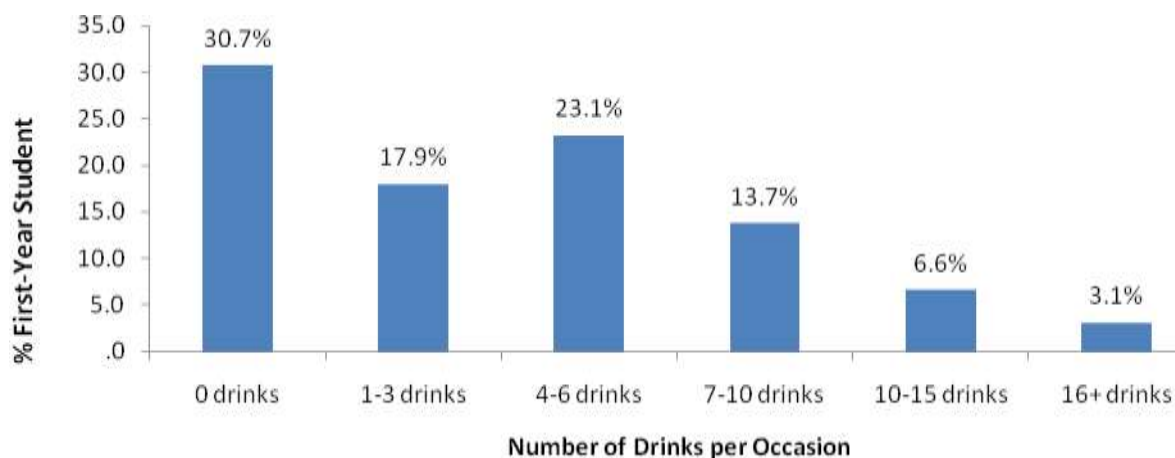
First-Year Students' Perceived Estimates of the Average Students' Alcohol Consumption per Occasion

Results showed that about three fourths of students reported they perceive the average student to consume four to ten drinks, about one in ten students perceive students to consume more than ten drinks, and less than one in ten students perceive that students consume less than three drinks per occasion (See Figure 2).

Figure 2. First-Year Students' Perceived Estimations of the Average Students' Drinks per Occasion
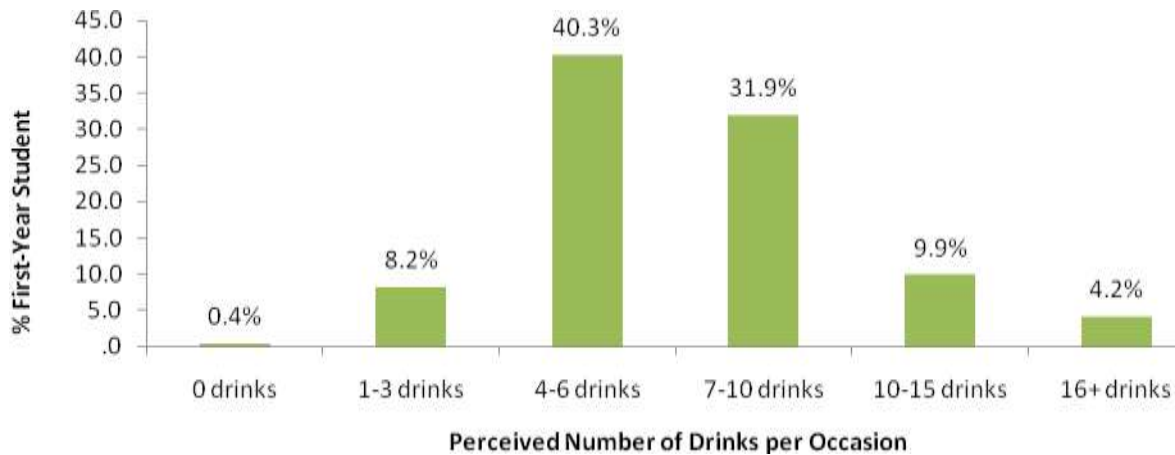
First-Year Students' Reported Alcohol Consumption per Week.

Results shown in Figure 3 indicate that nearly one half of students reported that they do not consume any alcohol, one fourth reported consuming one to six drinks per week, and one third reported consuming seven or more drinks per week.

Figure 3. First-Year Students' Reported Drinks per Week
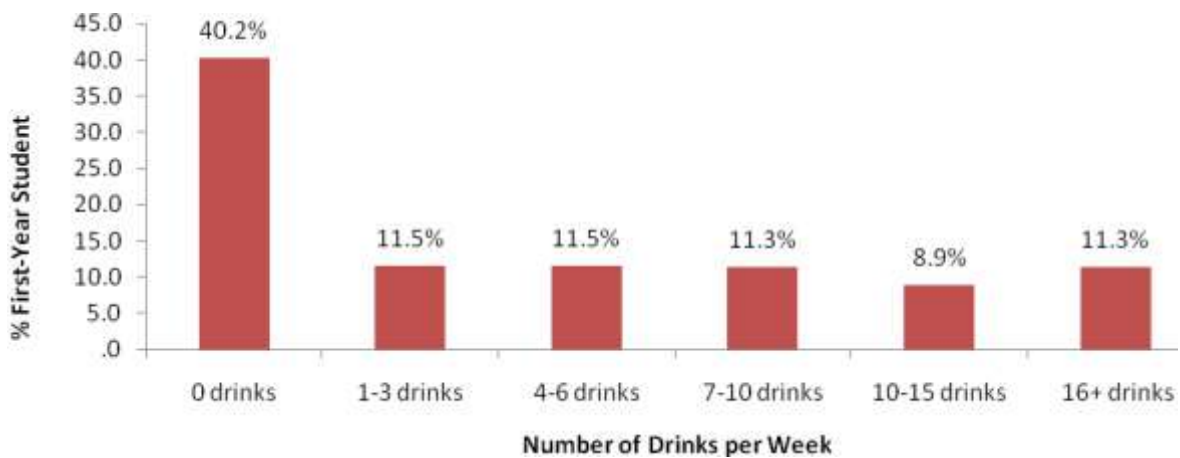
First-Year Students' Perceived Estimates of the Average Students' Alcohol Consumption per Week

Results showed that approximately one fourth of students perceive the average student to consume six or less drinks, slightly more than half of students reported they perceive that the average UW-Stout student consumes seven to fifteen drinks, and slightly less than one fourth of students perceive the average student to consume more than sixteen drinks per week (See Figure 4).

Figure 4. First-Year Students' Perceived Estimations of the Average Students' Drinks per Week
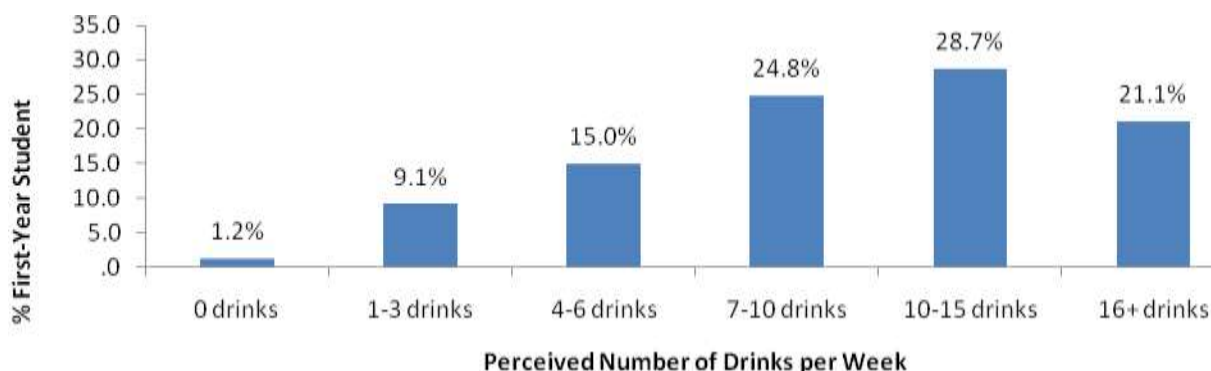
Differences in Students' Estimates of their Own Consumption and Their Estimates of the Average Students' Consumption

One-way analysis of variance tests were performed to determine whether first-year students' own reported alcohol consumption per occasion and per week differed from their perceptions of the average students' alcohol consumption per occasion and per week. First-year students' alcohol consumption per occasion had a mean of 3.27 and a standard deviation of 1.74. First-year students' drinks per week had a mean of 3.39 and a standard deviation of 2.13. This was significantly lower than their perceptions of the average students' alcohol consumption per occasion which had a mean of 3.58 and a standard deviation of 0.956 and per week which had a mean of 4.94 and a standard deviation of 1.75 (See Table 1).

Table 1

Differences between First-Year Students' Own alcohol Consumption per Occasion and per Week and Students' Perceptions of the Average Student.

Variable and source	Df	SS	MS	F	P
Students' Perceived Drinks per Occasion					
Between-group	6	176.74	29.46	37.63	.001
Within-group	955	699.11	2.52		
Students' Perceived Drinks per Week					
Between-group	6	929.65	154.94	72.85	.001
Within-group	946	2011.94	2.13		

Relationship between Students' Reported Alcohol Consumption and Perceived Alcohol

Consumption of the Average Student

The relationship between students' estimations of their alcohol consumption per occasion and week and their perceived estimates of the average student's alcohol consumption was further investigated using bivariate correlations, which showed a positive relationship between students' own alcohol consumption and their perceptions of the average students' alcohol consumption both per occasion and per week (See Table 2).

Table 2

First-Year Students Estimated and Perceived Estimates of Alcohol Consumption

Alcohol Behavior	1	2	3	4
1. Students' Drinks Per Occasion	− −			
2. Students' Drinks Per Week	.85	− −		
3. Perceived Average Student Drinks Per Occasion	.40	.34	− −	
4. Perceived Average Student Drinks Per Week	.38	.49	.34	− −

Note. All Coefficients are significant at *p* < 0.01.

Heavy Episodic Drinker Assessment

Heavy episodic drinking, defined as more than four drinks per occasion by the DSM, was computed. The results of the survey showed that about one half of first-year students meet the criteria for heavy episodic drinking, whereas nine out of ten students perceive that the average UW-Stout student is a heavy episodic drinker (See Table 3). Cross tabulations comparing the observed and expected counts of the students that meet the criteria for heavy episodic drinking and their perceived estimates of the students that participate in heavy episodic drinking was computed. The results indicate that there is a significant difference between heavy episodic drinkers and their perceptions of the average students' consumption χ^2 (1, $N = 962$) = 70.03, $p <$ .001.

Table 3

First-Year Students' Participation and Perceptions of Heavy Episodic Drinking

		Frequency	Percent
Students Meet Criteria for Heavy Episodic Drinker	Yes	481	48.9%
	No	503	51.1%
Perceived Average Student as Heavy Episodic Drinker	Yes	891	90.9%
	No	89	9.1%

Heavy Episodic Drinkers and Risky Behaviors

Cross tabulations that compared the observed and expected counts of the students that met the criteria for heavy episodic drinking with whether they counted their drinks, drove under the influence, or smoked cigarettes was computed. The students that met the heavy episodic drinking criteria were significantly more likely to not count their drinks, to drive under the influence of alcohol and smoke cigarettes more compared to students that did not meet the criteria (See Table 4).

Table 4

Students Heavy Episodic Drinking and Risky Behaviors

Risky Behaviors	Heavy Episodic Drinker ($\underline{n}$ = 481)	Non-Heavy Episodic Drinker ($\underline{n}$ = 503)	χ^2
Not Counting Drinks	279 (58%)	178 (35%)	65.44**
Drinking and Driving	229 (48%)	50 (10%)	166.44**
Smoking Cigarettes	94 (19%)	29 (6%)	41.44**

** $\underline{p}$ < .001.

Heavy Episodic Drinkers and Perceived Risky Behaviors

Independent samples t-tests were performed to determine whether heavy episodic drinkers differed from other students on predicted GPA, amount of alcohol consumed per week, and number of sex partners in the past year (See Table 5). Heavy episodic drinkers were more likely to predict receiving a lower GPA during the upcoming semester, consume more drinks per week, and having more sex partners compared to students that did not meet the criteria.

Table 5

Heavy Episodic Drinkers and Their Additional Risky Behaviors

Risky Behaviors	Non-Heavy Episodic Drinker		Heavy Episodic Drinker		
	Mean	SD	Mean	SD	T
GPA	3.50	0.75	3.33	0.74	3.38**
Drinks per Week	1.84	1.16	5.10	1.59	36.00**
Sex Partners	1.61	0.80	2.33	1.06	11.82**

* $p < .05$. ** $p < .001$.

Independent samples t-tests that compared the perceptions of heavy episodic drinkers with non-heavy episodic drinkers perceptions of the percent of students who receive a GPA of 3.0 or higher, do not smoke cigarettes, consume alcohol per week, have driven under the influence of alcohol, count their drinks, and the number of sex partners per year was computed (See Table 6). Heavy episodic drinkers were more likely than non-heavy drinkers to report perceptions of more prevalent cigarette smoking, drinks per week, and more sex partners per year. However, there was no difference between heavy drinkers and non-heavy drinkers in

regards to the factors of perceived GPA, perceived driving under the influence of alcohol, and perceived drink counting.

Table 6

Heavy Episodic Drinkers Perceived Risky Behavior

Risky Behaviors	Non-Heavy Episodic Drinker		Heavy Episodic Drinker		
	Mean	SD	Mean	SD	T
Perceived GPA	3.42	0.93	3.31	0.99	1.74
Perceived Smoker	4.34	1.16	4.15	1.16	2.40*
Perceived Drinks per Week	4.19	1.83	5.75	1.24	15.54**
Perceived Drinking and Driving	4.92	1.33	4.93	1.57	0.09
Perceived Drink Counting	2.53	1.37	2.47	1.50	0.63
Perceived Sex Partners	2.26	0.95	2.56	1.10	4.48**

* $p < .05$. ** $p < .001$.

Chapter V: Discussion

There is evidence that suggests first-year students at the University of Wisconsin-Stout percieve that the average student consumes significantly higher amounts of alcohol per occasion and per week than the students themselves actually do. There is also evidence that first-year UW-Stout students participate in heavy episodic drinking at a level that is consistent with other first-year students attending Wisconsin colleges but greater than first-year students nationally. The first-year students that participate in heavy episodic drinking were more likely compared to non-heavy episodic drinkers to participate in risky behaviors and perceive that the average UW-Stout student participates in risky behaviors as well.

First-Year Students' Misperceptions and Alcohol Consumption per Occasion and Week

H1 predicted that first-year UW-Stout students would consume significantly less alcohol per occasion and per week than they perceive the average UW-Stout student to consume. The results of the one-way analysis of variance indicate that students report consuming significantly less alcohol per occasion and per week than what they perceive the average student to consume. Therefore, H1 received support from this data set. This gap between actual and precieved alcohol consumption has also been reported in a number of studies conducted by Perkins, (1986; 1996; 1997; 1999; 2002) and more recently by other researchers (Martens, 2006). Research conducted by Martens (2006) surveyed 833 undergraduate students, where 29% indicated that they were first-year students. Students were asked to report their alcohol use and their perceived alcohol use of the average student at their univerisity. Of the students surveyed, 23% reported not consuming alcohol during the past 30 days, 74% consumed alcohol between 1 and 29 days, and 3% consumed alcohol on all 30 days. When the participants were asked about the average student, they perceived that 1% of students did not consume any alcohol in the past 30 days, 56%

consumed alcohol on at least one day in the past month, and 43% consumed alcohol every day in the past month. The results of this study provides support for the results found in the current study that student overestimate the amount of alcohol that is consumed by the average student.

Heavy Episodic Drinking Assessment

H2 predicted that first-year students at UW-Stout would participate in heavy episodic drinking at a level comparable to first-year students at other UW-System schools but more than first-year students nationally. H3 predicted that first-year UW-Stout students would also perceive that the average UW-Stout student participates in heavy episodic drinking more than the students actually do. The results indicated that 48.9% of first-year students at UW-Stout participate in heavy episodic drinking, which is comparable to other Wisconsin universities at 48% (University of Wisconsin System, 2007) and nearly the same as first-year students nationally, with 46% meeting the heavy episodic drinking criteria (Knight, 2002). Furthermore, first-year UW-Stout students percieved that 90.9% of UW-Stout students engage in heavy episodic drinking. The results of a chi-square analysis indicate there is a significant difference between heavy episodic drinkers and perceived heavy episodic drinkers on alcohol consumption per occasion. These findings provide support for both H2 and H3. These results are also supported by prior research (University of Wisconsin System, 2007; Knight & Wechsler, 2002).

The study conducted by the Univerisity of Wisconsin-System (2007) had 15,077 respondents. Of these, 48% of all first-year students attending a University of Wisconsin college indicated that they participate in heavy episodic drinking. Research conducted by Knight and Wechsler (2002) estimated the prevalence of alcohol abuse and dependence among college students. Knight and Wechsler's (2002) research had 14,115 participants respond to an alcohol use survey. Of the students surveyed, 68% consisted of students who were under the age of 21. Male students were classified as heavy episodic drinkers if they had consumed five or more drinks on at least one occasion during the past two weeks, and female students were classified if they consumed four or more drinks. The results of this research concluded that 46% of students under the age of 21 partcipate in heavy episodic drinking.

Students' Alcohol Consumption and the Effects on Perceived Alcohol Consumption

First-year students' alcohol consumption per occasion and per week are significantly correlated with their perceptions of the average students alcohol consumption as perdicted by H9. There was a positive relationship between students' own alcohol consumption and their perceptions of the average student's alcohol consumption both per occasion and per week. These findings provide support for prior research conducted by Baer (1992) and Perkins (1999) suggesting that students' beliefs about peer alcohol consumption are associated with their own consumption.

Heavy Episodic Drinkers and Risky Behaviors

H4 predicted that first-year students who participate in heavy episodic drinking will report consuming more alcohol per week, driving under the influence of alcohol, not counting their drinks, using tobacco, and having more sex partners compared to students who do not meet the criteria. H5 predicted that heavy episodic drinkers would report that their GPA in the upcoming semester would be lower than students who do not report engaging in heavy drinking. UW-Stout first-year students who met the criteria for heavy episodic drinking were significantly more likely than non-heavy drinkers to engage in risky behaviors and have a lower GPA, supporting both hypotheses.

These results support prior research conducted by Wechsler (2001) indicating that students who participate in heavy episodic drinking are more likely than students who are non-heavy episodic drinkers to experience negative consequences from drinking. The study conducted by Wechsler (2001) found that students who reported participating in heavy episodic drinking three or more times during the past two week experienced more negative concequences compared to non-heavy episodic drinkers. Of the students who reported participating in heavy episodic drinking one to two times during the past two weeks, 26% reported falling behind in schoolwork compared to 9.8% of non-heavy drinkers. Furthermore, of the students who participated in heavy episodic drinking 1-2 times during the past two weeks, 22.3% reported engaging in unplanned sex compared to 7.8% of non-heavy drinkers. Weshsler (2001) also concluded that of the students who partcipate in heavy episodic drinking 1-2 times during the past two weeks, 39.7% and 10.9% reported driving under the influence and experienced unintentional injuries compared to 18.6% and 3.9% for non-heavy drinkers, respectively (Wechsler, 2001).

Heavy Episodic Drinkers and Perceived Risky Behaviors

H6, H7, and H8 predicted first-year students who met the heavy episodic drinking criteria would be more likely to percieve that the average UW-Stout student participated in more risky behaviors than they actually do. There is support for H6, but little suppport for H7 and H8. H6 predicted that first-year students would percieved that the average student drinks more per week, has more sex partners, and smokes cigarettes more than then they actually do. Prior research conducted by Scholly (2005) suggest that social norms play a role in students' sexual behaviors. Scholly (2005) surveyed 855 college students attending four different universities. Students were asked questions regarding their sexual behaviors and their perceptions of peer sexual behaviors. Of the students surveyed, 86% reported having 0-1 sex partners during the past year. However, students reported that they perceive only 22% of students at their school had 0-1 sex partners during the past year (Scholly, 2005). Research conducted by Martens (2006) also concluded that students overestimate the number of other students who smoke cigarettes. Of the students surveyed, 62% reported not smoking cigarettes in the past 30 days, 25% smoked at least one day during the past month, and 13% reported smoking cigarettes everyday during the past month. When the students were asked to estimate how many days during the past 30 days the average student at their university smoked cigarettes, respondents reported that 4% do not smoke cigarettes, 32% smoke at least once a month, and 64% smoke cigarettes everyday. The above studies provides evidence that students perceive that the average student has more sex partners and smokes more cigarettes than they actually do. There is little research examining the relationship between heavy episodic drinking and perceived sexual behaviors, driving under the influence, and cigarette use. However, the current study investigated the relationship between heavy episodic drinkers and their perceptions of these risky beahviors. Students who meet the

heavy episodic drinking criteria were more likely to perceive the average student to enagage in these risky behaviors compared to non-heavy episodic drinkers.

First-year students alcohol consumption was significantly less than their perceptions of the average students alcohol consumption. First-year Stout students report drinking significantly less than the average student both per occasion and per week. First-year students are participating in heavy episodic drinking at a dangerous rate, and even more unsettling, students perceive that almost all of their peer UW-Stout students participate in heavy episodic drinking. First-year students who participate in heavy episodic drinking also engage in more risky behaviors and perceive the average UW-Stout student to engage in more risky behaviors compared to non-heavy drinkers.

Limitations of the Study

The data that was collected came from only one university and one year of incoming students. Therefore, this sample may have been atypical, and the results might not generalize to other incoming students and universities. The data is also cross-sectional in nature, which prohibits casual inferences and does not allow consideration of changes over time. This research is based on self-report data, which is vulnerable to errors of memory loss, to distortions introduced by self-concept, and to social desirability bias due to the nature and sensitivity of the questions. In this study, students may have been cautious to reveal the extent of their alcohol consumption because they were under the legal drinking age. However, research suggests that self-report survey data provides reliable estimations of personal alcohol consumption (Clark, 1991). Research conducted by Clark (1991) suggests that self-reported survey estimates of alcohol consumption are more reliable than other self-report methods of measuring alcohol consumption such as drinking diaries and participant summaries of their usual drinking patterns.

The survey that was presented to first-year students also suffered from methodological flaws. The major methodological flaw was that the first slide of the presentation provided the first-year students with too much information concerning peer misperceptions. Providing first-year students with information on how inaccurate their perceptions of reality can be may have influenced students' estimates of the average students' alcohol consumption.

Implications for Future Research

In 2008, the Wisconsin Department of Health Services reported that Dunn County residents aged 18-25 had the highest rate of binge drinking in the state, suggesting that UW-Stout may be a campus where heavy drinking is tolerated. Yet first-year students who were involved in this study were not asked about their perceptions of campus alcohol use. Future research will need to further investigate the influence of campus environment on heavy episodic drinking at UW-Stout and related risky behaviors. Campus environments have been shown to influence students' drinking behaviors. Prior research by Szalay (1996) found that students in high alcohol use campus environments versus low alcohol use environments had a greater susceptibility to heavy alcohol use. This suggests that not only do perceptions of peer alcohol consumption influence individual alcohol consumption but that campus perceptions do as well (Szalay, 1996).

The results of this study also assessed the effectiveness of the first-year orientation presentation and the information that was provided. Future presentations should be more conscious of the information that is provided to students and in the order that it is provided.

Implication for Policy and Procedures at UW-Stout

      Results of this study have implications for policies and procedures at UW-Stout. An intervention targeting first-year students' social norms may be warranted. Students might attend alcohol education sessions during orientation where baseline alcohol information can be collected and compared with follow-up data. Between the collection of the baseline data and the follow-up period, students would receive a social norms intervention that included education about actual rates of alcohol consumption and risky behaviors participation to help correct students' misperceptions. These educational sessions could also identify potential high-risk first-year students who partcipate in heavy episodic drinking. Students who participate in heavy episodic drinking could received added support or more intensive intervention to reduce participation in heavy alcohol consumption and risky behaviors. This support could include participation in UW-Stout's Alcohol Awareness Program and counseling interventions that provide evidence-based educational and counseling services to high-risk students. Currently, only students who receive alcohol-related citations participate in such programs in exchange for reduced fines. Students that are identified as high-risk alcohol drinkers during orientation sessions could be encouraged to enroll in these services as a preventive intervention. High-risk students who enroll in these services should be provided with information and support designed specifically for students who consume dangerously high quantities of alcohol. This information could include dropout rates of students who consume high levels of alcohol, hospitilzation records, and citation information. Currently, there is limited evidence that these campus-based interventions are effective at reducing high-risk alcohol consumption.

Continuing Social Norm Campaigns at Stout

UW-Stout should continue to utilize the current poster campaign that already attempts to correct the general student populations misperceptions by providing accurate information. However, I believe that it is also crucial that the poster campaign focus attention on subpopulations such as first-year students and their risky behaviors. The information on the posters should be current, accurate, and specific to first-year students for maximum effectiveness (Berkley-Patton, 2003). The posters should also contain information conerning heavy episodic drinkers and their risky behaviors. The posters will also need to be strategically placed in locations specific to high volumes of first-year students. These locations may include the majority of South campus, residence halls, dorm rooms, the Johnson Field House, and businesses around South campus. Future campaigns will also need to focus special attention on the day of the week and the times of the year were students are particularly vulnerable to heavy alcohol consumption. Providing first-year students with accurate and correct information concerning the average first-year students alcohol consumption via campus email once a week on Fridays. Moreover, first-year students should also receive additional reminders and support prior to holidays occuring during the semester. First-year students could be subjected to tougher consequences and receive reminders and added support during regular dormitory meetings prior to holidays and breaks. There is recent reseach by Tremblay (2010) suggesting that first-year college students consume excessive quantites of alcohol during particular days and times during the year. In addition to providing first-year students with time specific, current and accurate information, high-risk first-year students should also receive additional support.

Future campaigns should also focus on high-risk first-year students who consume excessive quantities of alcohol. These students will be identified during freshman orientation and

encouraged to enroll in the Counseling Center's Alcohol Awareness Programs and counseling interventions. First-year students who are hospitalized due to intoxication or injuries sustained as a result of excessive alcohol consumption should be encouraged to utilize these services as well. In addition to receiving specific high-risk alcohol support from these services, students could receive confidential personalized support via email and phone calls.

Conclusion

Understanding the nature of first-year alcohol consumption, risky behaviors, and the role that peer misperceptions play is crucial to correcting and reducing the amount of alcohol first-year students consume. Future campaigns and initiatives that aim to reduce alcohol consumption and correct misperceptions among first-year students will need to focus specifically on first-year students and high-risk first-year students. This focus should include providing specific and accurate information concerning first-year students at locations frequented by first-year students. Furthemore, future initiatives should focus on the days and times of the year that first-year students consume the most alcohol. By understanding the problem and tailoring future campaigns specifically to first-year students UW-Stout can curb excessive alcohol consumption and the negative consequences associated with this population.

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Appendix A: The Smart and Healthy Campaign First-Year Student Survey

1. What is your gender?

    1. Male

    2. Female

2. How many Stout students earn a grade point average of 3.0 or higher?

    1. 15%

    2. 32%

    3. 53%

    4. 69%

    5. 78%

3. What do you think you'll get as a GPA?

    1. 2.0

    2. 2.5

    3. 3.0

    4. 3.5

    5. 4.0

4. What percent of Stout students do not smoke cigarettes?

    1. 11%

    2. 24%

    3. 43%

    4. 57%

    5. 74%

    6. 91%

5. Do you smoke cigarettes?

    1. Yes

  2. No

6. Did your parents have a serious conversation with you about alcohol prior to college?

  1. Yes

  2. No

7. How many drinks does the average Stout student consume per occasion?

  1. 0

  2. 1-3

  3. 4-6

  4. 7-10

  5. 10-15

  6. 16+

8. How many drinks do you consume per occasion?

  1. I choose not to drink

  2. 0

  3. 1-3

  4. 4-6

  5. 7-10

  6. 10-15

  7. 16+

9. How many drinks does the average Stout student consume per week?

  1. 0

  2. 1-3

  3. 4-6

  4. 7-10

5. 10-15

6. 16+

10. How many drinks do you consume per week?

    1. I choose not to drink

    2. 0

    3. 1-3

    4. 4-6

    5. 7-10

    6. 10-15

    7. 16+

11. How many Stout students do not drive under the influence?

    1. 27%

    2. 38%

    3. 52%

    4. 68%

    5. 79%

    6. 86%

12. Have you driven under the influence?

    1. Yes

    2. No

13. What percentage of Stout students count their drinks?

    1. 25%

    2. 39%

3. 56%

4. 62%

5. 75%

6. 87%

14. Do you count your drinks?

    1. Yes

    2. No

15. How many sex partners does the typical Stout student have per year?

    1. 0-1

    2. 2-3

    3. 4-5

    4. 6-9

    5. 10 or more

16. How many sex partners did you have in the past year?

    1. I'm not sexually active

    2. 0-1

    3. 2-3

    4. 4-5

    5. 6-9

    6. 10 or more

17. Prior to being intimate, do you ask your partner if it's okay?

    1. Always

    2. Most of the time

    3. Sometimes

4. Rarely

5. Never

18. What is the number #1 date rape drug?

    1. Roofies

    2. Pot

    3. Alcohol

    4. GHB

    5. I don't know