

SCREENING AND BRIEF INTERVENTIONS FOR ALCOHOL USE IN COLLEGE
STUDENTS

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Screening and Brief Interventions for Alcohol Use in College Students

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ABSTRACT

College students are recognized as a high-risk group for alcohol problems in the United States. Annually approximately 500,000 college students are unintentionally injured, and more than 1,700 college students die from alcohol-related unintentional injury. In addition, individuals who begin drinking alcohol early in life increase their risk of developing serious alcohol problems later in life. As a result, it is essential that efforts be made to focus on opportunities for alcohol screening and brief intervention where applicable in an attempt to reduce problem drinking behaviors.

Alcohol screening and brief interventions for alcohol misuse is an effective way for health care professionals' at student health clinics to take advantage of screening a high-risk population for alcohol misuse during a routine clinic exam. The purpose of this practice improvement project was for healthcare providers to initiate alcohol screening on all willing patients via a self-administered alcohol questionnaire (Alcohol Use Disorder Identification Test) and for the healthcare providers to address problem drinking behaviors with individual patients where indicated by implementing a 5-15 minute brief intervention for problem alcohol consumption. The aim was that the screening would flag problem drinkers and at risk individuals who would benefit from a brief alcohol intervention and potentially avoid future alcohol related harm to their health. The AUDIT screening did flag problem alcohol behaviors and facilitated an opportunity for healthcare providers to discuss those negative alcohol behaviors as well as the negative long-term implications they can have on the lives of the individual college students.

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INTRODUCTION

Background and Significance

The highest number of individuals with diagnosable alcohol disorders, heavy drinking, and multiple substance dependencies are in the age range from 18 to 29 years of age (Turrisi et al., 2009). Alcohol is routinely cited by researchers, college administrators and staff, and students as the most pervasively abused substance on college campuses (Perkins, 2002; Ross & DeJong, 2001). Many young people are experiencing the consequences of consuming too much alcohol at an early age. As a result, underage drinking is a leading public health problem in this country (National Institute on Alcohol Abuse and Alcoholism, 2006).

Binge drinking and alcohol poisoning are some of the more serious problems that confront college students, especially in the upper Midwest. People who begin drinking alcohol early in life increase their risk of developing serious alcohol problems later in life. They also are at greater risk for a variety of adverse consequences; including high-risk sexual behavior (Hingson et al., 2009; Perkins et al., 2002; Ross & DeJong, 2008), trouble with authorities, property damage (Wechsler et al., 1995; Ross & DeJong, 2008), depression, suicide, interpersonal violence (Perkins et al., 2002; Ross & DeJong, 2008), sexual victimization (Abbey et al., 2002; Brahm, Ahl, Reed, & Amaro, 2010; Hingson et al., 2005; Hingson, Zha, & Weitzman, 2009), poor academic performance (Ross & DeJong, 2008; Wechsler et al., 2002) and death (Hingson et al., 2009). College students are recognized as a high-risk group for alcohol problems. In the USA, 44% of students report heavy episodic drinking (four or five drinks per occasion for women and men, respectively) at least once in the previous 2 weeks (Wechsler et al., 2002). A follow-up to this study in schools with the highest proportions of heavy drinkers

was done in 2005 and found that there was no significant change in the proportion of students who reported heavy episodic drinking (Hingson, et al., 2009).

The effects of alcohol misuse on college students, such as those mentioned above, have been well documented. Sexually transmitted infections (STIs) are among the most common infections in the United States today, particularly for college students (American College Health Association, 2010). There is an association between sexually transmitted infections and substance abuse, particularly the abuse of alcohol and other drugs (Institute of Medicine (US) Committee on Health and Behavior: Research, Practice, and Policy, 2001; Ross & DeJong, 2008). Alcohol consumption may also contribute to inconsistent use of contraception, because students under the influence of alcohol may have a diminished perception of pregnancy or STI risk (Moore & Davidson, 2000; Ross & DeJong, 2008).

Alcohol use is typically started during adolescence and continues on through emerging adulthood (18-24 years). During this age period there is also an increased tendency to seek out different stimulation and engage in risk-taking behaviors which is attributed to immaturity in cognitive capacities and the ability to inhibit behavioral responses (Silveri, 2012). There are important neurobiological changes which occur in the human brain during emerging adulthood, especially in the frontal lobe which are responsible for executive functions including self-regulatory control; thus alcohol use during this time could have detrimental implications for the final stages of brain maturation (Silveri, 2012). Emerging adults who do not attend college have a tendency to have drunk more as adolescents than their peers who attend college; however, college students surpass their non-college peers in overall alcohol consumption (Timberlake, et al., 2007). Alcohol misuse is not only associated with adverse health and life consequences, but also with a future diagnosis of alcohol abuse or dependence (Substance Abuse and Mental Health

Services Administration, 2012). Knight et al. (2002) surveyed 14,000 students from 119 four-year colleges and found that in the past year 31% of those surveyed met the criteria for alcohol abuse and 6% met the criteria for alcohol dependence.

The rate of current (any use in past month) alcohol use among Minnesotans is 61.7%, compared to 51.3% nationally (Minnesota Department of Human Services, 2009). Likewise binge drinking is reported by 27.9% of Minnesotans, compared with 22.8% nationally (Minnesota Department of Human Services, 2009). In Minnesota, 17 two year and four year colleges worked with Boynton Health Service in 2011 to randomly select 31,899 undergraduate and graduate students in the state of Minnesota to participate in a survey regarding their experiences and behaviors in the areas of health care utilization and health insurance, mental health, use of tobacco, alcohol and other drugs, personal safety and financial health, nutrition and physical activity, and sexual health. Boynton Health service had a survey response rate of approximately 37.6% or over 12,000 students. Minnesota State University Moorhead (MSUM) had an overall survey response rate of 43.6% (compared with 31.4% in 2008); 2,240 students were randomly selected for participation with 976 completing the survey. The information the colleges received from this report provided invaluable health behavior information to university leaders which will hopefully influence their decisions regarding programs to promote health and access to healthcare services, encourage responsible student decision making and behavior, and contribute to the health, well-being, and academic success of students enrolled in their schools (MSUM Survey, 2011). The survey results were also intended to raise awareness among state and local policymakers and community leaders concerning the importance of the health of college students to the overall educational, health, and economic status of Minnesota (MSUM Survey, 2008).

According to the 2011 Boynton Health Service survey, 78.4% of MSUM students have used alcohol in the past 12 months (which was down from 81.6% in 2008), 69.7% of students reported using alcohol in the past 30 days, males and females reported similar rates of both past-12-month and current alcohol use, 58.4% of students reported having a hangover, 16.4% of students reported having driven a car while under the influence of alcohol or drugs (compared with 25% in 2008), 27.5% reported missing a class (compared to 28.2% in 2008), and 20.1% of students reported performing poorly on a test or project as a result of alcohol/drug use (compared to 21.9% in 2008). Additionally, the 2011 Boynton Health Service survey found that male students at MSUM reported a higher rate of high-risk drinking compared to female MSUM students (36.4% compared to 31.3, respectively), although the gap is less than the previous 2008 survey (48.9% vs. 31.9%, respectively). Students who have engaged in high-risk drinking tend to overestimate this behavior among their peers; the estimate from all students is 37.3%, and the actual high-risk drinking rate at the university is 32.8%. High-risk drinking is defined as five or more drinks in a row for men, or four or more drinks in a row for women on at least one occasion in the past two weeks (Schaus et al., 2009).

In 2011, the U.S. Preventive Services Task Force (USPSTF) recommended screening and behavioral counseling interventions to reduce alcohol misuse by adults, including pregnant women, in primary care settings. Alcohol screening should involve a careful history of alcohol use and/or the use of standardized screening questionnaires. Patients should be asked to describe the quantity, frequency, and other characteristics of their use of wine, beer, and liquor, including frequency of intoxication and tolerance to the effects of alcohol. A standard alcoholic drink is 12 ounces of beer, 8-9 ounces of malt liquor, 5 ounces of table wine or 1.5 ounces of 80-proof spirits. Various screening tools are currently used in clinic settings, such as the Cut-down,

Annoyed, Guilty Eye-Opener (CAGE) or Alcohol Use Disorders Identification Test (AUDIT) questionnaires which may help clinicians assess the likelihood of problem drinking behaviors. Screening and brief intervention (SBI) is a structured set of questions designed to identify individuals at risk for alcohol use problems, followed by a brief discussion between and individual and a service provider, with referral to specialized treatment as needed (American Public Health Association, 2009). Brief alcohol screening asks various questions to evaluate whether or not individuals are misusing alcohol. The provider then evaluates the answers and then shares the results and their significance with the individual. Brief interventions are counseling sessions that last 5-15 minutes with an aim of increasing the person's awareness of his or her alcohol use and the potential negative health consequences. The healthcare provider then works with the person on willingness and readiness to change his or her drinking behavior to and to motivate that person to either reduce dangerous drinking behaviors or seek treatment.

Health and social service practitioners who are working with the public, such as college students, should find creative ways to involve college students in planning, implementing and evaluating their intervention programs, such as screening and brief alcohol interventions. The comprehensive College Alcohol Study (CAS) conducted by the Harvard School of Public Health characterized binge drinking as five alcoholic drinks for men and four alcoholic drinks for women on a single occasion within the past two weeks (Perkins et al., 2001; Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994). A standard drink equals 1.5 ounces of liquor, 12 ounces of beer, or 5 ounces of wine per serving (American Public Health Association, 2009). Particular attention should be paid to how binge drinking trends differ by age, sex, and student status. Such descriptive epidemiological analysis can influence and advise more formal policy analysis as they can explain the magnitude of trends in binge drinking and how they might vary

by key demographic variables (Grucza, Norberg, & Bierut, 2009). Such analyses are relevant to clinical practice because the leading cause of death among young people are motor vehicle accidents, suicides, and homicides, which are all likely to be affected by alcohol use (Kelton & Shank, 1998; Ross & DeJong, 2008).

Problem Statement

Increasing healthy behaviors and decreasing risky or health-damaging behaviors are the major challenges facing health professionals (Pender, Murdaugh, & Parsons, 2011). Alcohol misuse among college students is a long standing problem on many college campuses. The immediate and long term social and health-related consequences of alcohol misuse provide health professionals with an urgent need to intervene to decrease alcohol misuse in the college student population. Detecting alcohol misuse and dependence early in the course of the disease allows people to get the help they need through a brief intervention or by a referral to treatment (USPSTF, 2011).

Purpose of the Study

The purpose of this practice improvement project is to educate providers at Minnesota State University Moorhead's Hendrix Health and Counseling Center about the benefits of alcohol use screening on all patients, and providing in-person brief interventions when indicated to those individual patients screening positive for potential alcohol misuse. The majority of patients seen at Hendrix Health and Counseling Center are undergraduate students ages 18-24 according to Carol Grimm, Hendrix Health and Counseling Center's Director (2011). Each year, 2.8 million U.S. college students drive while intoxicated, more than 1,700 college students die from alcohol-related unintentional injury, and more than 500,000 are unintentionally injured as a result of alcohol use (Hingson et al., 2005, Ross & DeJong, 2008). Despite the huge burden of alcohol-

related injuries, the direct connection between college drinking and physical injury has not been well understood (Mundt, Zakleskaia, & Fleming, 2009).

Numerous studies demonstrate that healthcare providers are frequently unaware of problem drinking by their patients (National Institute on Alcohol Abuse and Alcoholism, 2008). Advanced practice nurses must have comprehensive knowledge of risk factors for alcohol use and misuse for proper screening, identification, evaluation and management of patients. Patients at MSUM's Hendrix Clinic and Counseling Center were not routinely being screened for alcohol misuse at the time of the study unless the students' clinic visit was specifically for an alcohol-related problem, the provider noted an indication for alcohol misuse or if the student was being seen by the University's Addictions Counselor according to Carol Grimm, Director of Hendrix Health and Counseling Center (2011).

A broad understanding of risk and protective factors for alcohol use and misuse among college students will assist in the improvement of successful prevention and intervention programs. According to Masten and Coatsworth, 1998, protective factors are factors that reduce the likelihood of problem behavior either directly or by mediating or moderating the effect of exposure to risk factors. Protective factors include rewards for positive school or community involvement, strong family or religious bonds and strong emotional bonds to peers who do not participate in alcohol or other drug use (Arthur et al., 2002). Risk factors include low levels of bonding with family, family history of alcoholism, individuals who were raised in families with heavy drug or alcohol use or who engage in criminal behavior (Arthur et al., 2002). Young people who associate with peers who engage in alcohol or substance abuse or who abuse drugs or alcohol prior to age 15 are more likely to abuse alcohol or other drugs (Arthur et al., 2002). Early detection and intervention for alcohol misuse may improve ongoing medical and social

problems due to drinking and reduce the future risks from excessive alcohol misuse (U.S. Preventive Services Task Force, 2011).

Implementing the use of screening and brief interventions for alcohol use may improve practice by using standardized valid screening tools and addressing high risk behaviors in a population which has typically had issues with alcohol misuse. Brief interventions are becoming more popular as a way to address problems associated with hazardous and harmful drinking (Moyer & Finney, 2005). Brief interventions typically emphasize reducing a person's alcohol consumption to nonhazardous levels and eliminating binge drinking rather than insisting that the person abstain from drinking, although abstinence may be a good option for some (Moyer & Finney, 2005). A common goal is to get involved early and target people whose levels of drinking or patterns of use would be considered hazardous or harmful (Ballesteros et al., 2004; Ross & DeJong, 2008) and to reduce problems associated with drinking, such as alcohol-related medical problems, injuries, domestic violence, motor vehicle crashes, arrests, or damage to a fetus (Moyer & Finney, 2005). Brief interventions, performed by healthcare professionals such as nurse practitioners, will hopefully encourage individuals to alter their alcohol intake without creating resistance or opposition with an overarching aim of better long term health outcomes. Therefore, there is a great opportunity for healthcare providers at MSUM's Hendrix Health and Counseling Center to minimize drinking in this college student population by developing a method to screen for this potential problem, and providing brief interventions when indicated by screening.

REVIEW OF THE LITERATURE AND SYNTHESIS

Screening and Brief Interventions in College Health

Alcohol use is a widespread, long-standing problem on the majority of college campuses throughout the United States and worldwide. Many young people are experiencing the consequences of drinking too much, at too early of an age. As a result, underage drinking is a leading public health problem in this country (National Institute on Alcohol Abuse and Alcoholism (NIAAA), 2006). Binge drinking and alcohol toxicity are some of the most serious problems that confront college students, especially in the upper Midwest (Centers for Disease Control, 2012). People who begin drinking early in life increase their risk of developing serious alcohol problems later in life (Agrawal et al., 2009; NIAAA, 2006). Also, they are at greater risk for a variety of adverse consequences including: high-risk sexual behavior, trouble with authorities, damaging property, depression, suicide, and poor performance in school (NIAAA, 2006). College students are recognized as a high-risk group for alcohol problems (Hingson et al., 2009). According to Hingson (2010), the increase in the past 7 years in alcohol related traffic and other unintentional injury deaths among 18 to 24 year olds, both in college and not in college, underscores the need for colleges and their surrounding communities to expand and strengthen interventions demonstrated to reduce excessive drinking among college students and those in the same age group who do not attend college.

Increasing healthy behaviors and decreasing risky or health-damaging behaviors are the major challenges facing health professionals (Pender, Murdaugh, & Parsons, 2011). Detecting alcohol misuse and dependence early in the course of the disease enables people to get the help they need through a brief intervention or by a referral to treatment (NIAAA, 2005). Healthcare

professionals who have a broad understanding of risk and protective factors for alcohol misuse and brief alcohol interventions can implement successful prevention and intervention programs.

There is currently poor compliance with alcohol screening and brief motivational interventions by providers at student health centers, partly because of a lack of effective motivational intervention skills and alcohol-counseling knowledge necessary to administer an effective brief motivational intervention (Foote et al., 2004; Schaus et al., 2009). Forty-four percent of colleges surveyed reported the use of at least one formal alcohol screening tool, and nearly all of these colleges used a tool which was appropriate for college students (Winters et al., 2011). However, it was found that less than half of the 44% of colleges that used a screening tool used one of the four tools which were determined to be most favorable for this population (Winters et al., 2011). Expanding the reach of empirically supported brief interventions depends in part on gaining access to at-risk students. Student health centers represent “opportunistic points of contact” that can potentially reach students who might not self-refer to a brief alcohol intervention (Larimer & Cronce, 2007).

Alcohol Screening Tools

The U.S. Preventive Services Task Force (USPSTF) recommends screening and brief intervention for alcohol abuse in all adult patients in primary care settings; clinicians can choose screening strategies that are appropriate for their clinical population and setting (Rubinsky et al., 2010; U.S. Preventive Services Task Force, 2011; Whitlock et al., 2004). Screening and Brief Intervention (SBI) combines a short screening tool (eg, AUDIT, CAGE) to identify at-risk persons with a motivational interview (MI) to help patients change their drinking behaviors. SBI is based, in part, on a harm-reduction approach using MI techniques intended to empower the patient to make a behavioral change (Ehrlich et al., 2006). Motivational interviewing is a patient-

centered, directive method aimed to motivate change by exploring and resolving uncertainty which expands on traditional therapeutic communication techniques by helping patients identify their own desired goals and abilities as a start for adopting healthy behaviors (Goodwin, Bar, Reid, & Ashford, 2009). A brief intervention consists of one or more time-limited conversations (typically 5-15 minutes) between an at-risk drinker and a healthcare practitioner with a goal of increasing awareness of alcohol use and consequences and to encourage the individual to create a plan to change drinking behavior to stay within safe limits (American Public Health Association, 2009). SBI has been successful in reducing frequency and amount of alcohol consumption and is therefore directly relevant to the binge-drinking college population (Baer, Kivlahan, & Blume, 2001; Schaus et al., 2009). Providers and health care systems wishing to implement routine SBI into their practice must first select a validated alcohol misuse screening questionnaire, since there is currently no valid laboratory test for identifying unhealthy alcohol consumption (Bradley, Kivlahan, & Williams, 2009).

Screening and Brief Interventions

Screening and Brief Intervention for alcohol use represents a significant advance in the treatment of harmful drinking and the prevention of alcohol-related harm. Such screening typically involves the administration of a brief alcohol screening questionnaire such as the Alcohol Use Disorders Identification Test (AUDIT) by a primary care provider, nurse, or even by a computerized check-in station at a clinic. Individuals who score highly for alcohol misuse can be offered a 5 to 15 minutes of brief motivational intervention by a trained healthcare professional. For people with severe problems or alcohol dependence, a referral to an Addictions Counselor may be necessary for further assessment and specialist treatment (Saitz, 2005).

Brief motivational interventions are among the most effective treatments for reducing college student drinking and have been associated with decreases in alcohol use and problems among freshmen, upper-class, and judicially mandated students relative to control and “treatment-as-usual” conditions (Larimer & Cronce, 2002, 2007; White, Mun, Pugh, & Morgan, 2007). The USPSTF (2011) recommends routine alcohol screening followed by brief intervention, and in 2006, the National Commission on Prevention Priorities (NCPPI) ranked alcohol screening and brief intervention in the top five U.S. prevention priorities (Solberg, Maciosek, & Edwards, 2008). Brief intervention is intended as an early intervention for non-treatment seeking, non-alcohol-dependent, hazardous and harmful drinkers (Nilsen, 2010). Brief alcohol interventions have been shown by numerous studies to be effective in both the college alcohol consuming population as well as in primary care. A number of controlled trials of brief alcohol interventions in primary health care settings (Anderson & Scott, 1992; Babor & Grant, 1992; Fleming et al., 1997; Israel et al., 1996; Kaner et al., 1999; Madras et al., 2009; Richmond et al., 1995; Schaus et al., 2009) have shown that, in comparison with controls, excessive drinkers (i.e. hazardous and harmful drinkers) will reduce alcohol consumption by >20% (Freemantle et al., 1993; Madras et al., 2009; Schaus et al., 2009). Brief interventions are intended as secondary prevention of alcohol-related problems in general health care settings (Nilsen, 2010). One of the barriers to implementation of brief interventions in most primary care settings is cost which is primarily attributed to the cost of clinical staff’s time with screening and intervention as necessary. State college health centers are typically funded by the university as well as by student fees, because alcohol abuse is a significant barrier to academic success and personal health, screening for alcohol misuse should be encouraged in all student health clinics. Interestingly, the NCPPI found alcohol screening and brief counseling to be one of the few

preventive interventions on the NCPP list to be cost-saving, yet among the least implemented in practice (Solberg et al., 2008).

A study by Kulesza, Apperson, Larimer, and Copeland (2010) examined the length of time a brief intervention needed to get the message through to the patient effectively by randomly assigning 114 undergraduate students who drank alcohol heavily randomly to a 10-minute brief intervention, a 50-minute intervention, or assessment-only control. Participants were assessed at baseline and post intervention on quantity of alcohol use, alcohol-related problems, and protective behavioral strategies with an overall aim to determine what length of intervention was most beneficial. A significant difference was found between participants in the 10-minute intervention and control condition regarding their alcohol consumption at 4-week follow up compared to the 50-minute intervention. Kulesza et al. (2010) concluded that a very brief intervention can impact short-term alcohol use outcomes by allowing participants to absorb and focus on the most salient aspects of their alcohol misuse without raising defensiveness or overwhelming them. This information is beneficial in a busy university clinic setting where provider and student time constraints could be an issue for implementation.

Alcohol Use Disorder Identification Test

Alcohol Use Disorder Identification Test (AUDIT) is one of the most commonly used tools to screen for alcohol misuse or dependence in primary care. The AUDIT detects the full spectrum of unhealthy drinking, including risky drinkers who could benefit from brief intervention, and is the tool preferred for evaluation by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) clinician's guide (NIAAA, 2005). A limitation to the AUDIT is its 10 questions; therefore a modification of the AUDIT, the AUDIT-C is often used and consists of the

first three questions of the lengthier AUDIT which are still able to quantify the amount of alcohol which is consumed by the individual. The AUDIT and the AUDIT-C are screening tests which have been validated in previous studies and are relatively equal in effectiveness to detect heavy drinking, alcohol abuse, and alcohol dependence in the outpatient setting (Bush et.al, 1998; Gomez, Conde, Santana, & Jorin, 2005; Kriston et al., 2008). Kokotailo et al., (2004) concluded that the AUDIT has reasonable psychometric properties in college students using student health services and supports the use of the AUDIT in this population. The self-administered 10 question AUDIT was the alcohol screening tool chosen to be used in this practice improvement study due to its ideal fit with the demographic of this particular university student clinic clientele.

CAGE

The CAGE questionnaire (Cut down, Annoyed, Guilt, Eye-opener) is another alcohol screening tool which is used often in the primary care setting. One positive response to any CAGE question suggests the need for closer assessment (Mayfield, McLeod, & Hall, 1974). A positive response to two or three of the instrument items indicates a high level of suspicion of alcoholism and a positive response to all four questions is indicative of alcoholism (Ewing, 1984; Smith, Herrmann, & Bartlett, 2011). A strength of the CAGE questionnaire is its brevity and the CAGE questionnaire may be combined with a question about binge drinking for more effective use in screening and brief interventions of the college student population. A limitation of the CAGE questionnaire is its lack of sensitivity in white female populations (Bradley, Boyd-Wickizer, Powell, & Burman, 1998; Dhalla & Kopec, 2007). Minnesota State University has a ratio of 57% female to 43% male and of that 90% of students identify themselves as Caucasian

(MSUM Admissions Office, 2012). Therefore the CAGE questionnaire is not ideal for this particular university.

Table 6. CAGE Screen For Alcohol Abuse.

C = "Have you ever felt you should **C**ut down on your drinking?"

A = "Have people **A**nnoyed you by criticizing your drinking?"

G = "Have you ever felt bad or **G**uilty about your drinking?"

E = "Have you ever had a drink as an **E**ye-opener first thing in the morning to steady your nerves or help a hangover?"

Yes to two or more: probable alcohol abuse

Source: Mayfield D, McLeod G, Hall P. The CAGE questionnaire: validation of a new alcoholism screening instrument. *Am J Psychiatry* 1974 Oct;131(10):1121-1123.

Figure 1. CAGE Questionnaire.

Purpose and Scope of the Study

Increasing the number of primary care settings that implement evidence-based alcohol Screening and Brief Interventions (SBI) is one of the proposed national health objectives for U.S. Healthy People 2020 (U.S. Department of Health and Human Services, 2010). Understanding the factors that contribute to college drinking and developing effective interventions are major research and educational incentives of the National Institute on Alcohol Abuse and Alcoholism (NIAAA). The purpose of this practice improvement project was to implement screening and brief interventions for alcohol use at Hendrix Health and Counseling Center at MSUM.

Screening and Brief Intervention represents a considerable advance in the treatment of hazardous drinking and the prevention of alcohol-related harm. Such screening typically involves administration by a primary care provider or nurse of a brief screening questionnaire such as the AUDIT and, for those who screen positive for alcohol misuse, 5 to 15 minutes of brief intervention by a trained healthcare professional. For individuals with severe problems or alcohol dependence, a referral may be made for further assessment and specialist treatment (Saitz, 2005).

Project Goals

1. Implement routine screening of college students coming to student health at MSUM's Hendrix Health and Counseling Center for any medical appointment.
2. Implement brief interventions by healthcare providers to individuals who screen positive for problematic alcohol misuse.
3. Implement provider referrals to the MSUM Addictions Counselor for individuals who providers feel are at increased risk and would benefit from further evaluation and treatment.

Evidence-Based Practice, Research-Based Findings, and Scientific Merit

Evidence suggests there was a lack of support for many of the approaches used to intervene in high-risk college alcohol use. Two screening tools were identified (AUDIT, CAGE) that were recommended based on their psychometric properties among college students samples and their performance when empirically compared to at least one other tool (Winters et al., 2011); however, there is not a formal consensus from experts on reliability and validity of such screening tools with the college age population. Significant proportions of students attending primary care clinics for routine medical care have underlying high-risk drinking (34% overall) (Fleming et al., 2010). According to the 2011 Boynton Health Survey, male students at MSUM

report a higher rate of high-risk drinking compared to their female counterparts (36.4% versus 31.3%, respectively). Despite these significant proportions, many colleges do not use formal alcohol screening tools to detect alcohol problems among their students (Winters et al., 2011). Alcohol education or awareness programs are ineffective when used alone and sometimes even when they are used with other intervention strategies. Although college campuses have successfully implemented clinic-based tobacco-cessation programs, the prevention of alcohol-related harm continues to be relegated to counseling centers and non-clinical settings rather than general medical care settings (Fleming et al., 2010). While education is a critical component of programs to reduce alcohol misuse in college students, it must be delivered in a manner sensitive to the needs, developmental stage, and readiness of the population for whom it is designed, and be combined with other successful interventions strategies such as screening and brief interventions.

When students present to the clinic for a health concern and screen positive for alcohol misuse, brief interventions represent “teachable moments” and can encourage students to modify their alcohol misuse as part of their treatment plan. Health and social service practitioners who are working with the public, such as college students, should find creative ways to involve them in planning, implementing and evaluating their intervention programs, such as screening and brief alcohol interventions.

Theory-driven interventions will be useful for design and implementation, including the selection of outcome measures and measurement tools which are the most sensitive and appropriate for alcohol misuse among college students. Increased consistency in the use of these

tools which capture the main points of concern will increase the number of interventions and promote the use of techniques for analyzing the effects.

Theoretical Framework

According to Pender, Murdaugh, & Parsons, the Health Promotion Model (HPM) proposes a framework for integrating nursing and behavioral science perspectives with factors influencing health behaviors (2011). The model is to be used as a guide to explore the biopsychosocial processes that motivate individuals to engage in behaviors directed toward health enhancement (Pender et al., 2006). Screening and brief interventions for alcohol use can be used in conjunction with the HPM in the college student population with an aim of increasing awareness of risky drinking behaviors thereby modifying such behaviors to promote health and prevent future potential alcohol related complications. The foundation of the HPM lies within the desire of individuals to promote personal health and well-being, rather than disease avoidance. The goal of the HPM is to address any health behavior in which threat is not proposed as a major source of motivation for the behavior in order to increase awareness of an individual's level of well-being with a focus on individual characteristics and experiences, behavior-specific cognitions and affect, and behavior outcomes (Current Nursing, 2011; Pender et al., 2011). The self-administered AUDIT tool will be completed by the individual patients and then evaluated by the attending healthcare provider. The healthcare provider will then provide the patients with an individualized interpretation of their alcohol consumption practices in a non-threatening manner with an overarching goal of providing the patients with insight to their alcohol consumption behaviors in accordance with the HPM.

Studies have attempted to describe how the seven cognitive-perceptive factors and five modifying factors of the HPM could predict health behaviors (Pender et al., 2011). The

cognitive-perceptive factors in the HPM are: the importance of health, perceived control of health, the definition of health, perceived health status, perceived self-efficacy, perceived benefits, and perceived barriers. Pender's modifying factors include demographic and biological characteristics, interpersonal influences, situational influences, and behavioral factors (Pender et al., 2011).

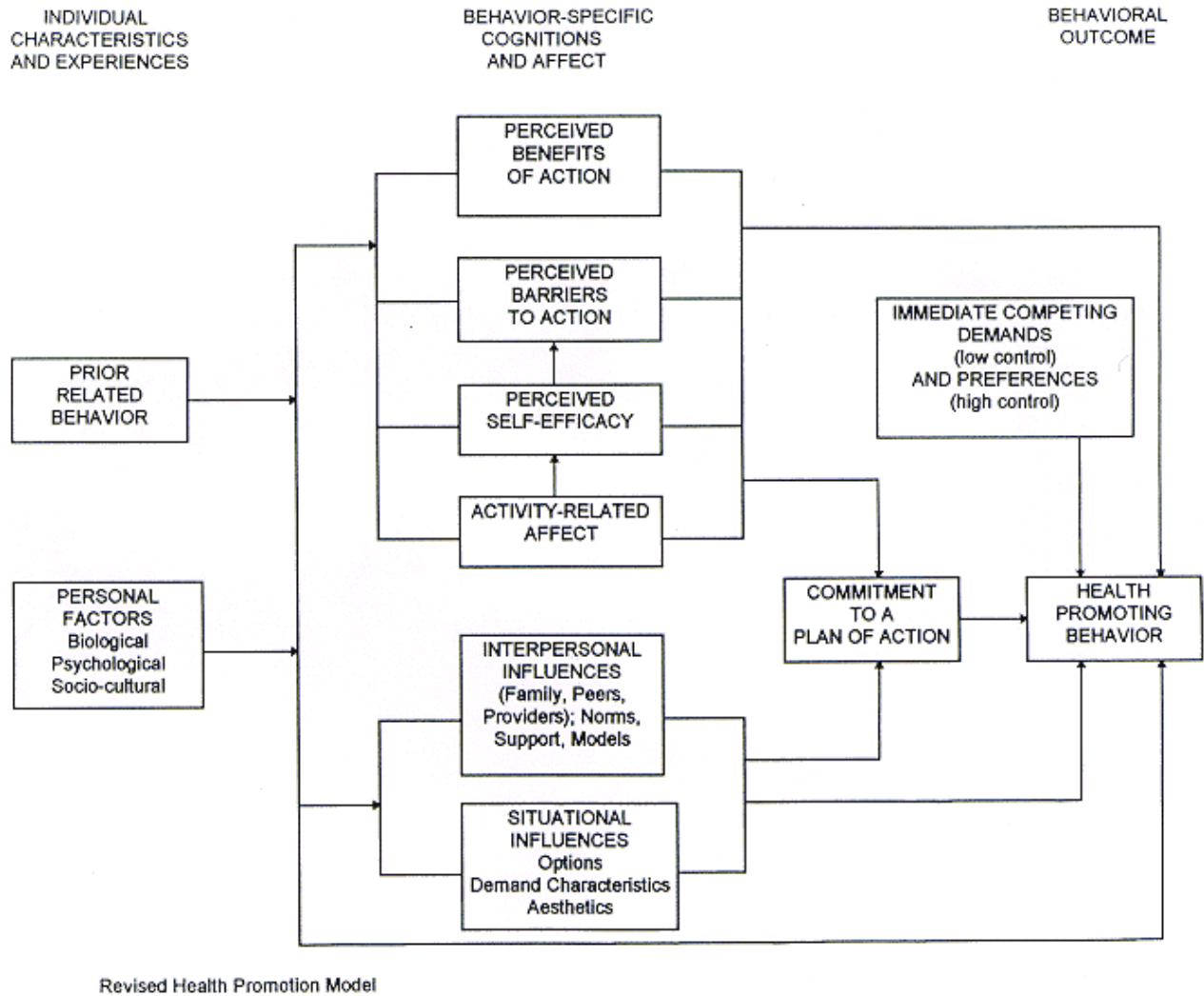


Figure 2. The Health Promotion Model.

Source: Pender, N.J., Murdaugh, C.L., & Parsons, M.A. (2002). *Health Promotion in nursing practice* (4th ed.). Upper Saddle River, NJ: Prentice-Hall.) Author's approval Appendix A.

Implementation of SBI and Obstacles to Implementation

Organizational support for screening and brief interventions for college students and a desire to improve practice are essential in order to maintain and develop the implementation of the HPM in student health. With implementation of new programs come obstacles. Obstacles to widespread implementation of SBI include the scarcity of practitioner time and a reluctance of healthcare providers and patients to discuss alcohol use in the context of a general medical consultation (Kypri et al, 2008). There is, however, overwhelming evidence to support SBI, and the USPSTF recommends the implementation of SBI in primary health care. Yet only 44% of health centers surveyed at 4-year colleges routinely screen for alcohol misuse (Knight et al., 2002; Winters et al., 2011). Calvert and Bucholz, 2008, successfully revised Pender's HPM and identified the HPM as a potentially viable framework for evaluating health behaviors which predict alcohol use and misuse in children and young people. Calvert and Bucholz, 2008, also successfully used Pender's HPM to examine the relationships between adolescent alcohol misuse and various high risk behaviors. Utilizing the HPM as a framework to influence health behaviors could positively affect patient outcomes by implementing SBI in student health clinics. A review of 36 randomized controlled trials showed that SBI typically reduces hazardous drinking for 12 months or longer (Moyer, Finney, Swearingen, & Vergun, 2002). Implementation of a self-administered screening tool for alcohol misuse for college students seeking healthcare services at MSUM's Hendrix Health and Counseling Center will provide the element of screening without adding additional time for clinic staff.

Nurse Practitioners and the Health Promotion Model

The nurse practitioner's focus on holistic care integrates patients' physical, emotional, behavioral, and other aspects of care. Nurse practitioners are prepared to handle psycho-social

issues, patient and family education, and coordination of care for complex patients. College students can benefit from health promotion care delivered by nurse practitioners at student health clinics such as implementation of brief interventions to individuals who screen positive for problematic alcohol use. The nurse practitioner may also refer individuals who providers feel are at increased risk and would benefit from further evaluation and treatment to the MSUM Addictions Counselor. The nurse practitioner's focus on disease prevention and health promotion as well their ability to provide comprehensive care put them in an ideal position to screen for alcohol misuse and provide brief interventions when appropriate to their patients. The Health Promotion Model can be used to encourage students to make more responsible alcohol choices to prevent harm and promote health.

Summary of Literature Review

Alcohol screening and brief interventions delivered by primary care providers in a student health center to high-risk-drinking students has the potential to result in significantly decreased alcohol consumption, high-risk drinking, and alcohol-related harms (Schaus et al., 2009). The results of this review support the urgent need to: (1) implement the use of tools such as screening and brief intervention in student health clinic settings, (2) use standardized assessment tools which have been proven effective with college students, such as the AUDIT, (3) educate primary care providers and clinic administrators on the importance of and implementation of alcohol screening tools and brief interventions, and (4) provide primary care providers with the education and tools to implement brief interventions with their patients. In addition to addressing potential cost, the immediate and long-term effectiveness of various interventions must be evaluated before deciding which approaches provide the best overall outcomes. In light of the adverse consequences associated with heavy college drinking continued

exploration, development, and implementation of SBIs in health settings is warranted (Seigers & Carey, 2010).

PROJECT DESIGN

Project Site

Because of the high numbers of college students using and abusing alcohol, a local student health clinic was chosen for this practice improvement project (PIP) as the site of interest. By using a student health clinic, high risk patients could be screened for alcohol use and misuse. The selected student health clinic was a university health clinic in Minnesota that specializes in student health concerns. The clinic site at MSUM has been open for eleven years, with a new clinic site built and opened in 2002. On the clinic's medical side, the clinic has a physician, a family nurse practitioner, one registered nurse, two laboratory technicians, and one pharmacist. The mental health side of the clinic utilizes a psychiatric clinical nurse specialist, two licensed psychologists, an addiction counselor, and a social worker. The purpose of this practice improvement project at this student health clinic was to educate the healthcare and clinic staff regarding the importance of screening and brief interventions for alcohol use and misuse among this high risk college population and to implement this screening and brief intervention for alcohol use into practice.

Practice Improvement Project

This project attempted to educate providers on the importance of screening this high risk population for problem alcohol consumption. The project's ultimate goal was to implement alcohol screening and to encourage providers to intervene with brief interventions in those individuals who are at risk for alcohol misuse and to attempt to positively influence patient outcomes through awareness of problem drinking.

Protection of Human Rights

Institutional Review Board (IRB) approval for this practice improvement project was obtained through North Dakota State University (NDSU) on June 27, 2012 (IRB Approval number PH12177) and Minnesota State University Moorhead's (MSUM) on April 2, 2012 prior to the implementation of the practice improvement project. The project obtained approval under expedited status by the IRBs of both universities.

Potential Risks

Potential risks include risk to privacy, psychological risk, as well as legal risk. The risk to patient privacy is protected by the Health Insurance Portability Act of 1996 ("HIPAA"), therefore there is no additional risk for participation in the study than there would be with their regular clinic visit as all employees and researchers have all gone through HIPAA training and regulatory processes. Potential psychological risks could potentially arise if the information collected in the AUDIT survey were to reveal problem risk alcohol behaviors which could have the potential to make individuals feel uncomfortable or defensive. All information discussed with the patients regarding their AUDIT survey results was done by trained medical professionals who are accustomed to discussing sensitive material. Additionally, similar topics could also potentially come up in the course of regular medical care and this research was a standardized way of screening. Because the legal age for consumption of alcohol in the United States is 21 years, some underage individuals may have perceived a legal risk in being forthcoming with their responses. This health information was all private and protected by HIPAA regardless of whether or not the study is being performed. If participants experienced any distress with the questions on the AUDIT survey or with the brief provider-led alcohol intervention they could

have been directed to further discussion with a healthcare provider or to the on-site counseling services which were available to discuss any concerns.

Potential Benefits

There are many potential benefits to this practice improvement project. First of all, there is currently no standardized alcohol screening being routinely performed at this university health center. With the implementation of screening, an awareness of problematic alcohol consumption can be obtained and the opportunity to intervene with a brief intervention and referral to the addictions counselor, as needed, can be made for at risk students. Long term benefits to individuals and to society include enlightening individuals regarding their problem alcohol use and attempting to curb their behaviors before they negatively affect the lives of the individual and society. Examples of potential long term health benefits include but are not limited to decreasing dropout rates of college students, decreasing negative long-term alcohol related health problems, decreasing short-term health problems such as hangovers, decreasing potential for driving while intoxicated, decreasing problems with the law, and decreasing harm to others by vehicle, violence, or other means.

Methodology

The initial plan for implementation of alcohol screening and brief interventions for alcohol use in this college student population at MSUM's Hendrix Health and Counseling Center was to implement an alcohol screening tool, such as the AUDIT into their new electronic medical record. The thought behind this was that students could both check into the clinic for their appointment and be directed to the alcohol screening questions. Unfortunately, the barrier to this implementation was the cost to the health center to build this screening into their current electronic medical record. Therefore, it was decided after committee approval that a self-

administered paper survey of the AUDIT would be given to the patients to complete prior to meeting with their healthcare provider.

The researchers decided that all students who were 18 years of age or older and who spoke and read fluent English would be eligible to participate in the screening. Once an eligible student registers for their clinic appointment, the administrative assistant at Hendrix Health and Counseling Center offered them the option of completing the AUDIT survey in the form of a set script (See Appendix B). Students willing to participate were then given a consent form to complete (Appendix C) as well as an AUDIT survey (Figure 3) and a clipboard which had “What is a standard drink” information attached to it in order to clarify what was considered to be one standard alcoholic beverage (Appendix D).

The World Health Organization’s “Alcohol Use Disorders Identification Test Guidelines for use in Primary Care, 2nd edition” manual as well as the National Highway Traffic Safety Administration’s “Screening and Brief Interventions Tool Kit for College and University Campuses” were given to both healthcare providers at Hendrix Health and Counseling Center at MSUM who routinely see medical patients. The AUDIT manual contains everything a healthcare provider would want to know about the AUDIT including why it is important to screen for alcohol use, the context of alcohol screening, the development and validation of the AUDIT, administration guidelines, scoring and interpretation, how to help patients, as well as how to implement screening in the clinical setting. The National Highway Traffic Safety Administration’s guide contains information supporting the use of SBI as well as information on when to conduct a SBI, steps to SBI, when to make a referral, information on how alcohol affects people, and additional information on the AUDIT screening test and how to score the AUDIT. The AUDIT which was given to the students at the clinic to fill out is seen in Figure 3.

The Alcohol Use Disorders Identification Test: Self-Report Version

PATIENT: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest.

Place an X in one box that best describes your answer to each question.

Questions	0	1	2	3	4	
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
					Total	

Figure 3. The Alcohol Use Disorders Identification Test: Self-Report Version.

The results of the AUDIT survey were then reviewed by the healthcare provider assigned to the patient using the AUDIT scoring tool (Figure 4). The scoring tool used by the healthcare

providers, which can be found in the AUDIT manual, has four risk levels based upon self-reported scores as well as the interventions which are recommended in the manual.

Risk Level	Intervention	AUDIT score*
Zone I	Alcohol Education	0-7
Zone II	Simple Advice	8-15
Zone III	Simple Advice plus Brief Counseling and Continued Monitoring	16-19
Zone IV	Referral to Specialist for Diagnostic Evaluation and Treatment	20-40

*The AUDIT cut-off score may vary slightly depending on the country's drinking patterns, the alcohol content of standard drinks, and the nature of the screening program. Clinical judgment should be exercised in cases where the patient's score is not consistent with other evidence, or if the patient has a prior history of alcohol dependence. It may also be instructive to review the patient's responses to individual questions dealing with dependence symptoms (Questions 4, 5 and 6) and alcohol-related problems (Questions 9 and 10). Provide the next highest level of intervention to patients who score 2 or more on Questions 4, 5 and 6, or 4 on Questions 9 or 10.

Figure 4. AUDIT Scoring Tool.

If the patient's score was calculated to be in "zone one" or an AUDIT score of 0-7, the healthcare provider was to discuss their results and then give alcohol education to that patient. If the patient's score was calculated to be in "zone two" or an AUDIT score of 8-15, the healthcare provider was to again discuss their results and give simple advice to that patient. If the patient's score was calculated to be in "zone three" or an AUDIT score of 16-19, the healthcare provider was to discuss their results and give simple advice plus brief counseling and continued monitoring to that patient (which this study considers to be a brief intervention for alcohol use). If the patient's score was calculated to be in "zone four" or an AUDIT score of 20-40, the healthcare provider was to review their results and then refer them to a specialist for diagnostic

evaluation and treatment which in this study would be a referral to the on-site Addictions Counselor.

The researchers felt that an adequate sample could be attained by collecting survey and intervention results during a five week period. Data were collected on 18 clinic days from 10/18/2012 to 11/20/2012. Results of each respondent were tabulated into a document on the researchers password protected computer. After data were entered into the password protected computer, the questionnaires and consents were destroyed by using a paper shredder. During the data collection process patient names were removed and results of individual surveys could not be traced back to any particular individual. The survey results were then compiled, interpreted, and reported to the Hendrix Health and Counseling Center staff as well as the MSUM IRB.

RESULTS

Population and Sample

A total of 253 students (138 males and 178 females) who met the eligibility criteria were approached about the study on 18 clinic days from 10/18/2012 to 11/20/2012. Eligibility criteria which were determined for participation included individuals age 18 or older and those who are able to speak and read English fluently. Individuals who wished to participate were given a consent to sign and the AUDIT survey tool; both which were attached to a clipboard which included information regarding “what is a standard drink”.

Data Results

Of the 253 students who met eligibility criteria, 104 students elected to participate (Figure 4). Specific reasons for refusal were not asked by clinic staff and therefore not documented. As noted in Figure 1, the sample of 104 students was mainly Caucasian (77.1%), with African Americans comprising 10.5% of the sample, and Asian/Nepalese comprising 12.4% of the sample. The sample was primarily female (78%). The mean age was 21 years, with age ranging from 18 to 37 years (Figure 5).

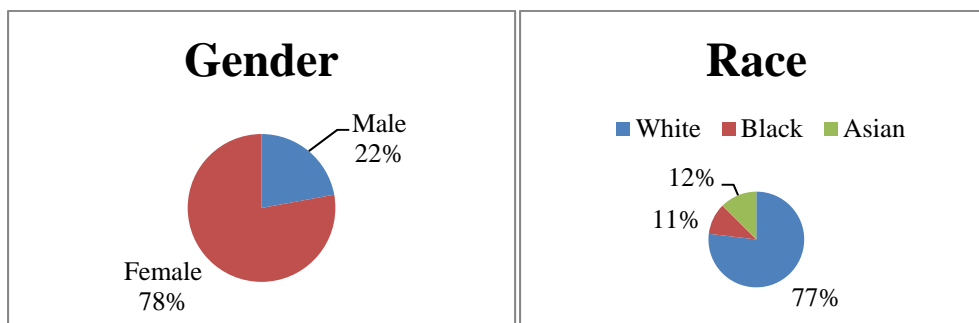


Figure 5. Gender and Race of Study Participants.

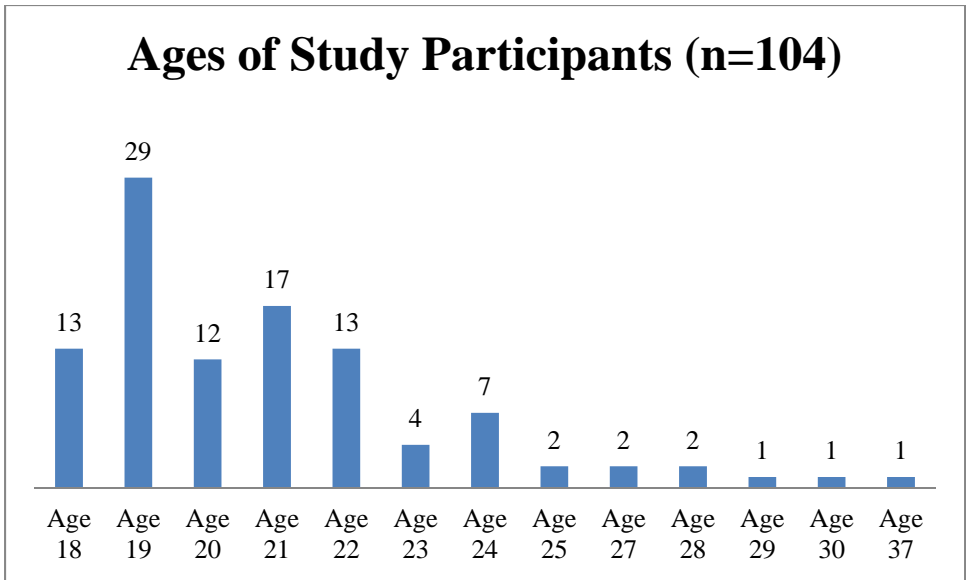


Figure 6. Ages of Study Participants.

Brief Alcohol Interventions were performed based upon the total AUDIT score; 88.5% of students (n=92) received alcohol education, 10.6% of students (n=11) receiving simple alcohol advice, and 0.9% of students (n=1) received no advise as they were missed by the attending medical provider (Figure 6).

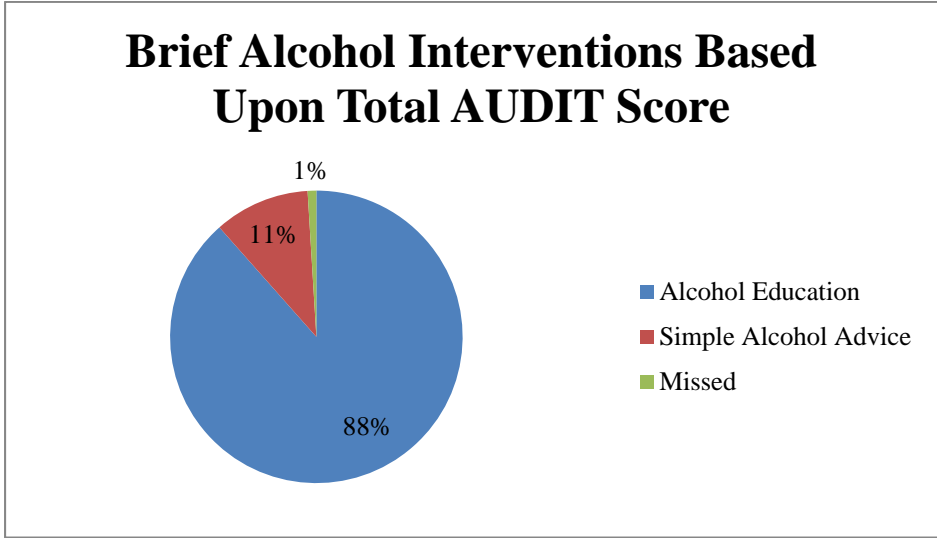


Figure 7. Brief Alcohol Interventions Based Upon Total AUDIT Scores.

The questions on the AUDIT tool are broken down into three main categories for analysis based upon their item content. Questions 1-3 address hazardous alcohol use, questions 4-6 address alcohol dependence symptoms, and questions 7-10 address harmful alcohol use. Results for questions 1-10 are found in Table 1.

AUDIT question 1 addresses specifically frequency of drinking alcohol with the following question: “How often do you have a drink containing alcohol?” Answers include never (0), monthly or less (1), 2-4 times a month (2), 2-3 times a week (3), or 4 or more times a week (4).

AUDIT question 2 addresses typical quantity of drinking alcohol with the following question: “How many drinks containing alcohol do you have on a typical day when you are drinking?” Answers include 1 or 2 (0), 3 or 4 (1), 5 or 6 (2), 7 to 9 (3), or 10 or more (4).

AUDIT question 3 addresses frequency of heavy alcohol consumption with the following question: “How often do you have six or more drinks on one occasion?” Answers include never (0), less than monthly (1), monthly (2), weekly (3), or daily or almost daily (4).

AUDIT question 4 addresses impaired control over drinking with the following question: “How often during the last year have you found that you were not able to stop drinking once you had started?” Answers include never (0), less than monthly (1), monthly (2), weekly (3), or daily or almost daily (4).

AUDIT question 5 addresses increased salience of drinking with the following question: “How often during the last year have you failed to do what was normally expected of you because of drinking?” Answers include never (0), less than monthly (1), monthly (2), weekly (3), or daily or almost daily (4).

AUDIT question 6 addresses morning drinking with the following question: “How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?” Answers include never (0), less than monthly (1), monthly (2), weekly (3), or daily or almost daily (4).

AUDIT question 7 addresses guilt after drinking with the following question: “How often during the last year have you had a feeling of guilt or remorse after drinking?” Answers include never (0), less than monthly (1), monthly (2), weekly (3), or daily or almost daily (4).

AUDIT question 8 addresses alcohol-related blackouts with the following question: “How often during the last year have you been unable to remember what happened the night before because of your drinking?” Answers include never (0), less than monthly (1), monthly (2), weekly (3), or daily or almost daily (4).

AUDIT question 9 addresses alcohol-related injuries with the following question: “Have you or someone else been injured because of your drinking?” Answers include no (0), yes, but not in the last year (2), or yes, during the last year (4).

AUDIT question 10 addresses others concerned about the individuals alcohol consumption with the following question: “Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?” Answers include no (0), yes, but not in the last year (2), or yes, during the last year (4). Results of the AUDIT are presented in Table 1.

Table 1

Question Scoring and Descriptive Statistics of AUDIT Questionnaire

AUDIT Questions	Question Scoring and Descriptive Statistics									
	0	1	2	3	4	Mean	SD	Minimum	Median	Maximum
Hazardous Alcohol Use Questions										
1. How often do you have a drink containing alcohol?	Never (n=23)	Monthly (n=42)	2-4 times a month (n=28)	2-3 times a week (n=11)	4 or more times a week (n=0)	1.26	0.92	0	1	3
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2 (n=62)	3 or 4 (n=28)	5 or 6 (n=10)	7 to 9 (n=2)	10 or more (n=2)	0.60	0.89	0	0	4
3. How often do you have six or more drinks on one occasion?	Never (n=59)	Less than monthly (n=34)	Monthly (n=10)	Weekly (n=1)	Daily or almost daily (n=0)	0.55	0.71	0	0	3
Dependence Symptoms Questions										
4. How often during the last year have you found that you were not able to stop drinking daily once you had started?	Never (n=97)	Less than monthly (n=6)	Monthly (n=1)	Weekly (n=0)	Daily or almost daily (n=0)	0.08	0.30	0	0	2
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never (n=83)	Less than monthly (n=20)	Monthly (n=1)	Weekly (n=0)	Daily or almost daily (n=0)	0.21	0.43	0	0	2
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never (n=103)	Less than monthly (n=0)	Monthly (n=1)	Weekly (n=0)	Daily or almost daily (n=0)	0.02	0.20	0	0	2
Harmful Alcohol Use Questions										
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never (n=82)	Less than monthly (n=17)	Monthly (n=5)	Weekly (n=0)	Daily or almost daily (n=0)	0.26	0.54	0	0	2
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never (n=87)	Less than monthly (n=13)	Monthly (n=4)	Weekly (n=0)	Daily or almost daily (n=0)	0.20	0.49	0	0	2
9. Have you or someone else been injured because of your drinking?	No (n=99)		Yes, but not in the last year (n=1)		Yes, during the last year (n=4)	0.09	0.40	0	0	2
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No (n=98)		Yes, but not in the last year (n=5)		Yes, during the last year (n=1)	0.13	0.55	0	0	4
Total (n=104)						3.39	3.37	0	3	17

DISCUSSION AND CONCLUSION

College students are seen as a high-risk population for alcohol misuse and associated accidents, violence, high risk sexual encounters, tobacco use, and performance issues (Kokotailo et al., 2004). Opportunities for screening and brief interventions for alcohol misuse arise when students present to university health clinics for other healthcare needs, and these appointments should be used as an opportunity for health promotion including alcohol misuse screening and brief intervention when indicated.

The purpose of this practice improvement project was to educate university healthcare providers on the importance of alcohol screening and implementation of alcohol screening and brief alcohol interventions into practice not only for patients who present with alcohol misuse concerns, but for all patient appointments. The overarching goal of this project was to implement alcohol screening in order to hopefully shed light on alcohol misuse in individuals who score positively for misuse and to use brief alcohol interventions as applicable to encourage individuals to consume alcohol responsibly.

This chapter discusses the project goals, incorporation of the Health Promotion Model, results of the implementation, limitations, and potential benefits of alcohol intervention. Suggestions for permanent implementation into practice are offered as well as implications for Nurse Practitioner practice.

The three main goals of this practice improvement project were to implement regular alcohol misuse screening for students presenting for a medical appointment, implementation of brief interventions for alcohol misuse as indicated, and referrals to the on-site Addictions Counselor for individuals as indicated. Goal 1 was to implement routine screening of college students coming to student health at MSUM's Hendrix Health and Counseling Center for any

medical appointment. Goal 1 was met as all eligible college students who presented for a medical appointment and who consented to participate were screened for alcohol misuse with a self-administered AUDIT survey. Goal 2 was to implement brief interventions by healthcare providers to individuals who screen positive for problematic alcohol misuse. Both healthcare practitioners at Hendrix Health and Counseling Center received “The Alcohol Use Disorders Identification Test Guidelines for use in Primary Care”, 2nd Edition as a guide for how to use the AUDIT to identify persons with hazardous and or harmful alcohol consumption patterns. Providers also received the National Highway Traffic Safety Administration’s “Screening and Brief Intervention Tool Kit for College and University Campuses” as companion guide. These documents explained the AUDIT’s value in this population, provided insight and interpretation of the tool, and provided information and guidelines for who to screen and when screening and interventions were appropriate. It is the assumption of the researcher that individuals who scored positive for alcohol misuse either received “alcohol education” or “simple advice” based upon the AUDIT scores which were collected. One student scored a 17 and therefore should have received “simple advice plus brief counseling and continued monitoring”, however the healthcare provider stated he did not see that individuals AUDIT screening tool until after the student had left the facility due to being the only provider on that day with a full schedule, thus an opportunity was lost.

Screening and brief interventions for alcohol use should be used together with the Health Promotion Model in the college student population with a goal of increasing student self-awareness of their personal risky alcohol drinking behaviors thereby encouraging them to modify their risky behaviors to not only promote health but to prevent future potential alcohol related complications.

Goal 3 was to implement provider referrals to the MSUM Addictions Counselor for individuals who providers feel are at increased risk and would benefit from further evaluation and treatment. Goal 3 was not met as there were no students who had an AUDIT score in the 20-40 range, therefore no referrals to the on-site Addictions Counselor were made.

Interpretation of Results

The sample was mainly Caucasian females ages 18-22 which were what was expected given the overall demographics of the university. AUDIT questions 1-3 addressed hazardous alcohol use (frequency of drinking, typical quantity, and frequency of heavy drinking) and this was the section of the AUDIT in which the majority of students received points towards their total score. Several students also received points on the harmful alcohol use questions (primarily with guilt after drinking and black outs, but also with alcohol-related injuries and others concerned about their drinking). The AUDIT results section which was the most unremarkable was the dependence symptoms questions which discuss impaired control over drinking, increased salience of drinking, and morning drinking.

A study by Kokotailo et al., (2004) supports the widespread use of the 10-question AUDIT in the college health population; however, the authors recommend that AUDIT question 3 on binge drinking be reduced to five or more drinks for men and four or more drinks for women. The authors felt this was more appropriate as all alcohol surveys in the U.S. use five or more drinks for men and four or more for women. The original AUDIT was developed in Great Britain where the alcohol content of a standard drink is lower (10-12 g) whereas in the U.S. most standard drinks contain 14 g of alcohol (Kokotailo et al., 2004). Another study by Olthuis et al., (2011) examined the utility of a gender-specific definition of binge drinking in the AUDIT (AUDIT question 3). The results support the aforementioned study with their recommendation to

change the number of drinks on question 3 of the AUDIT to 4 or more drinks on one occasion for women in order to avoid under classification of hazardous drinking in college women (Olthuis, et al., 2011).

Another study by DeMarti and Carey (2012) recommended the three question AUDIT-C for detection of at-risk drinking, specifically with college females. DeMarti and Carey (2012) further recommended a total cut off score of seven be used for males and five for females.

Limitations

The AUDIT is superior to other self-report screening measures as it attempts to identify not only alcohol dependence, but high-risk drinking (Kokotailo et al., 2004). The implementation of alcohol misuse screening at MSUM with the 10-question AUDIT went well, but was not without limitations. One limitation was the amount of time in which the survey was conducted; 18 clinic days in a 5 week period. Another limitation was due to the consistency with which the surveys were made available to the students as they were coming into student health for their appointment. One possible explanation for the small amount of students who scored positive for alcohol misuse could be that individuals who were under the age of 21 may have felt that their responses could get them into trouble with the college or authorities despite the consent and disclosure telling them otherwise. Because the sample was self-selected, individuals who had more high risk drinking behaviors may not have participated. Another potential limitation was that not all providers felt alcohol screening was an important use of their or student time and thus did not put value into the screening and intervention process despite the education they had received. Foote et al., (2004) found that the majority of student health centers are not providing routine alcohol screening, and many fail to provide appropriate treatment and referral, due to the barriers of inadequate provider training, limited time, and limited resources.

The AUDIT is useful to identify individuals who misuse alcohol and who may benefit from a brief intervention or referral to an Addictions Counselor. The AUDIT can be used not only as an alcohol screening tool, but also as an educational tool to help students learn about their own drinking behaviors as well as provide an opportunity for healthcare providers to discuss strategies to lower their risk of negative consequences from consuming alcohol (U.S. Department of Transportation, 2004).

Recommendations for the Site at Which the Project was Conducted

The fact that college students represent an at risk population for alcohol misuse and that college health centers represent an ideal opportunity for alcohol screening and brief intervention has already been established by the literature. The medical staff at Hendrix Health and Counseling Center intends to use the results of this study in a Quality Improvement study of their own for their clinic accreditation. Ultimately the information obtained would be used to determine whether or not clinic staff and administration see the utility of implementing brief alcohol screening for misuse and brief alcohol interventions into their daily patient routines. Because college students represent an at risk population for alcohol misuse, it is recommended that Hendrix Health and Counseling Center proceed with their quality improvement study on this topic and strongly consider implementing alcohol screening and brief interventions into their patients' medical encounters. Hendrix Health and Counseling Center is unique in that it not only houses an excellent medical staff, but also an extensive counseling center which includes an on-site Addictions Counselor. Implementing the self-reported 10-question AUDIT with gender-based changes to question 3 (5 drinks for males and 4 drinks for females) would be the best literature supported change to the traditional AUDIT, and would help to tailor the tool more towards the strongly female MSUM population. The inclusion of a "What is a Standard Drink"

(Appendix D) should accompany the AUDIT so that college students answer appropriately regarding their alcohol consumption. White et al., (2005) concluded that college students overestimated the amount of fluid in a standard alcoholic drink and consequently underestimated the quantity of alcohol consumed. When provided with feedback regarding their definitions of a standard drink they adjusted their consumption levels to be higher than they had initially reported, therefore inclusion of standard drink sizes is an important inclusion with the AUDIT (White et al., 2005).

The addition of the AUDIT to the on-line self check-in process would not add time to clinic staff for the alcohol screening process. With the elimination of the self-selection and consent more students will be screened and thus the likelihood of individuals scoring positive for misuse should rise. The AUDIT is now reimbursable by most health insurance plans, thus representing an additional way to add revenue to this or any other clinical practice. This particular clinic has recently begun billing the student's health insurance company for their medical visits at the beginning of January, 2013. Previously the student's university fees covered their medical visits and no co-pay was required. The American Medical Association (AMA) has approved several billing codes which allow medical providers to be reimbursed for providing alcohol screening and brief alcohol intervention services – anywhere from \$33.41 for 15 to 30 minutes of “Alcohol and/or substance abuse structured screening and brief intervention services” to \$65.51 for greater than 30 minutes for Commercial insurance or Medicaid patients. The AMA's Common Procedure and Terminology (CPT) codes for the alcohol screening and brief interventions are 99408 and 99409 and are described as “alcohol and/or substance abuse structured screening and brief intervention services: 15 to 30 minutes (for 99408) or greater than 30 minutes (99409).

Implication for Practice

Screening for alcohol misuse in primary care is currently insufficient. It is estimated that 9 to 36 percent of patients who are seen in primary care in the United States have a current or lifetime diagnosis of alcohol abuse or dependence (Fiellin, Reid, & O'Connor, 2000). McGlynn et al., (2003) found in a study of primary care that patients with alcohol dependence received appropriate assessment and referral for treatment only 10 percent of the time. A study by Friedmann et al., (2000) found that while 88 percent of the physicians surveyed reported asking new patients about their alcohol use, only 13 percent routinely used formal alcohol screening questionnaires. Although several alcohol screening tools exist, the two alcohol screening tools most widely used in primary care are the AUDIT and the CAGE. The CAGE primarily detects problem drinking, whereas the AUDIT detects the full spectrum of unhealthy drinking and is the tool preferred for evaluation by the NIAAA clinician's guide (NIAAA, 2005).

Screening and brief interventions for alcohol misuse in primary care can benefit not only patients who are dependent on alcohol, but also those who have adopted risky alcohol consumption behaviors. The United States Preventive Services Task Force (USPSTF) supports alcohol misuse screening and has given a Grade 1B recommendation for its implementation. The optimal frequency of alcohol screening is not known, however the USPSTF has given a grade 2C recommendation for screening at least annually. Furthermore, the NCPP found alcohol screening and brief counseling to be one of the few preventive interventions to be cost-saving, however still the least implemented in practice (Solberg et al., 2008).

There is also a financial benefit to the implementation of SBI into practice. As discussed previously, most insurance companies will also reimburse healthcare providers for screening and brief intervention services. This is an opportunity for healthcare professionals who are paid based

on a Relative Value Unit (RVU) scale. Screening and brief interventions may be added to other evaluation and management codes for office services. For example, in outpatient clinic settings, adding a brief SBI service (15 minutes) in addition to a 30 minute outpatient office visit for a new patient adds 0.65 RVUs for the SBI service to the 0.97 RVUs for the evaluation and management outpatient visit (SAMHSA-HRSA, 2012). Therefore, there is a financial benefit as well as a clinical benefit to the healthcare provider's patient population.

Conclusion

The effects of alcohol misuse on the college student population are a well-known problem. Annually an estimated 1,700 college students between the age of 18 and 24 die from alcohol-related unintentional injuries (NIAAA, 2005), not to mention the other negative consequences. Support for alcohol screening and brief interventions is prevalent in the literature. Implementation of a proven alcohol screening tool in college health, such as the AUDIT coupled with a brief alcohol intervention has been successful to decrease alcohol use, provide more accurate perceptions of other students drinking, and increase the use of behavioral strategies which are protective (Martens et al., 2007).

In summary, this practice improvement project can be used to encourage healthcare providers and clinic administration to implement screening and brief intervention for alcohol use in college health centers. College health centers are in a unique position to impact the health and well-being of their students by implementing alcohol screening which has been proven with this at risk population. Hendrix Clinic and Counseling Center medical staff will be using the data collected by this practice improvement project in a quality improvement study for their clinic accreditation, and will make a determination at a later time as to whether or not they will be

implementing screening and brief interventions for alcohol use in their college student population.

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APPENDIX A. AUTHOR PERMISSION TO USE HEALTH PROMOTION MODEL

From: Nola Pender [mailto:npender@umich.edu]
Sent: Monday, February 25, 2013 8:23 AM
To: Angela Dolalie Kelsch
Subject: Re: Health Promotion Model

Dear Angela:

You have my permission to reprint the Health Promotion Model in your dissertation and any resultant publications with acknowledgement of the source. I wish you success in your academic work.

To Your Health,

Nola Pender

On Sun, Feb 24, 2013 at 6:23 PM, Angela Dolalie Kelsch
<Angela.DolalieKelsch@my.ndsu.edu> wrote:

Hello Dr. Pender,

I am a Doctor of Nursing Practice student at NDSU. I am doing my Dissertation on “Screening and Brief Interventions for Alcohol use in College Students” and am using your health promotion model as the theoretical framework for my practice improvement project. I am writing to you to ask for your permission to use your Health Promotion Model’s Graphic in my Dissertation?

Thank you for your time and consideration,

Angela

Angela Dolalie Kelsch, RN, BSN, DNP Candidate
North Dakota State University

APPENDIX B. SCRIPT: SBI FOR ALCOHOL USE IN COLLEGE STUDENTS

A NDSU Doctoral student is conducting a research study here at the MSUM Hendrix Clinic and Counseling Center implementing brief alcohol screening and interventions as indicated based upon survey results. An alcohol screening tool which has been proven useful in college age population is being used. It is the AUDIT tool. If you chose to participate in this study while you are here for your medical care, you will be asked to complete the AUDIT tool which will take approximately five minutes of your time. You may decline to participate in this study and you will still receive the medical care you are seeking today.

The results of the AUDIT tool will be given to the medical provider you are scheduled to see in the clinic today. If your score indicates that you have potential for alcohol misuse, the medical provider will tailor brief alcohol intervention with you which will take approximately five minutes of your time. Studies have shown that many individuals who have problems with alcohol misuse are frequently unaware of the problem. If you do not have a problem with misusing alcohol, then the benefit to you will be that you are reassured that your alcohol use behaviors are not worrisome to your healthcare professional. If you do have an alcohol misuse problem, the AUDIT tool will likely indicate this to the medical provider who will take the time to talk with you about ways to consume alcohol in a safer manner. The information collected will be a part of your medical record; therefore as with all medical records your information is safe and protected by HIPAA laws. Information gathered in the study will be used for research and as a part of a Quality Improvement study being performed by the Hendrix Clinic and Counseling Center staff to determine whether or not implementation of screening and brief interventions for alcohol use should be implemented as a regular part of practice at the clinic. The benefit to the college student body as a whole is that problem alcohol use may be detected earlier; therefore individuals would be less likely to suffer the consequences of alcohol misuse in the future. The potential harm to individual college students is that some students who are identified as misusing alcohol may be uncomfortable when discussing their alcohol behaviors with a healthcare professional. Because the information is part of a medical record, if you are between the ages of 18 and 20 and have been consuming alcohol and admit to it on the AUDIT tool, your alcohol consumption information is still confidential and you will not be in any trouble with campus or local authorities.

Your participation is voluntary and in order to participate you will be asked to sign a consent to participate and a HIPAA waiver to allow the co-investigator of the study to evaluate the results of the AUDIT tool, whether or not a brief alcohol intervention occurred, whether or not a referral to the Addictions Counselor took place, and whether or not that appointment was kept. Thank you for your consideration.

APPENDIX C. PARTICIPANT CONSENT FORM

NDSU
North Dakota State University
Nursing Department
136 Sudro Hall, 222F
Dept. # 2670
PO Box 6050
Fargo, ND 58108-6050
(701) 231-8355

Title of Research Study:

Screening and Brief Interventions for Alcohol Use in College Students

This study is being conducted by:

Dean Gross, Ph.D., FNP, (701) 231-8355, primary researcher.

Angela Dolalie Kelsch, RN, BSN, NP-S, (701) 306-9590, co-investigator

Why am I being asked to take part in this research study?

You are being asked to participate in this research study because you, as a college student, are considered to be in a high risk population for alcohol misuse. Individuals who are 18 years of age or older, who have a clear comprehension of written English, and who are enrolled students at MSUM are asked to participate.

What is the reason for doing the study?

The purpose of the study is to implement screening and brief interventions for alcohol use in college students at Hendrix Clinic and Counseling Center not only during this research study, but every day with every patient being seen. The hope then is to shed light on individuals who present with problem drinking behaviors and to have brief motivational interventions with them to hopefully curb problem drinking and lifelong problems with alcohol misuse.

What will I be asked to do?

You will be asked to complete an alcohol screening tool, the AUDIT, to determine whether or not you may be at risk for alcohol misuse. You will still receive the health care that you have come to the clinic for today. Receiving medical care is not conditioned in any way on your participation in this study.

What Information will be collected about me?

The results of the AUDIT tool, your medical provider's response to the score of the AUDIT tool, and then interventions performed by the clinic staff will be collected. Your specific personal information will not be available to anyone other than your medical providers. The results of this study will be incorporated into the clinical dissertation of a Doctor of Nursing Practice student at

North Dakota State University and will also be used by the Hendrix Clinic and Counseling Center Staff as part of developing quality improvement parameters.

Where is the study going to take place, and how long will it take?

The study will take place at Minnesota State University Moorhead's Hendrix Clinic and Counseling Center. Completion of the AUDIT tool will take approximately five minutes of your time. If you score positive for alcohol misuse, the medical provider seeing you for your clinic appointment today will offer to spend an additional 5 to 15 minutes with you in the form of a brief alcohol intervention. You may decline the intervention. Appropriate referrals will be made to the Hendrix Clinic and Counseling Center Addictions Counselor as determined by the medical provider and yourself.

What are the risks and discomforts?

Common risks in research include loss of confidentiality and emotional, psychological distress and or social implications. It is not possible to identify all potential risks in research procedures, but the investigators have taken reasonable safeguards to minimize any known risks to you.

What are the benefits to me?

Potential benefits include allowing participants an opportunity to reflect on their alcohol consumption. If results of the AUDIT tool indicate alcohol misuse, you may benefit from a brief intervention performed by a healthcare professional tailored to your individual situation. Alcohol misuse has been directly linked to poor performance in academics, and both short and long term potential health effects. Bringing light to alcohol misuse can benefit individuals and offer help and counseling to individuals in need. If you are an individual who does not have a problem with alcohol misuse, you may not get any benefit from being in this research study.

What are the benefits to other people?

Alcohol misuse not only affects the individual, but may also potentially affect society negatively. The information gathered by this study will become a part of the continued research being performed on high risk alcohol misuse populations, such as college students, and will ideally encourage this college health center as well as other college health centers in the US to adopt alcohol screening and brief interventions for alcohol misuse into their college health centers.

Do I have to take part in the study?

Your participation in this research is your choice. If you decide to participate in the study, you may change your mind and stop participating at any time without penalty or loss of benefits to which you are already entitled. You are not required to complete the AUDIT survey, or the potential intervention, in order to receive the health care that you have come to the Hendrix Clinic and Counseling Center for today.

What are the alternatives to being in this research study?

Instead of being in this research study, you may choose not to participate.

Who will see the information that I give?

The investigators will keep private all research records that identify you. Before we analyze the results of the study, your name will be de-identified from the information gathered during the study process. Your information will be combined with information from other students taking part in the study. We may publish the results of the study; however, the results will be reported as a group, not individually. We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or specifics of the given information. For example, your name will be kept separate from your research records, and these two things will be securely stored in different places.

What if I have questions?

Before you decide whether to accept this invitation to take part in the research study, please ask any questions that might come to mind now. Later, if you have any questions about the study, you can contact the investigator, Dean Gross, PhD, FNP at (701) 231-8355 or the co-investigator Angela Dolalie Kelsch, RN, BSN, NP-S at (701) 306-9590.

What are my rights as a research participant?

You have rights as a participant in research. If you have questions about your rights, or complaints about this research, you may talk to the researcher or contact the NDSU Human Research Protection Program by:

- Telephone: 701.231.8908
- Email: ndsu.irb@ndsu.edu
- Mail: NDSU HRPP Office, NDSU Dept. 4000, PO Box 6050, Fargo, ND 58108-6050.

The role of the Human Research Protection Program is to see that your rights are protected in this research; more information about your rights can be found at: www.ndsu.edu/research/irb .

Documentation of Informed Consent:

You are freely making a decision whether to be in this research study. Signing this form means that

1. you have read and understood this consent form
2. you have had your questions answered, and
3. you have decided to be in the study.

You will be given a copy of this consent form to keep.

Your signature

Date

Your printed name

Signature of researcher explaining study

Date

Printed name of researcher explaining study

APPENDIX D. "WHAT IS A STANDARD DRINK"

