Spring 5-14-2020

INCREASING THE EFFECTIVENESS OF ALCOHOL REDUCTION PROGRAMMING

Jason Massey
University of Southern Mississippi, jason.massey@usm.edu

INCREASING THE EFFECTIVENESS OF

ALCOHOL REDUCTION PROGRAMMING

by

Jason F. Massey

A Doctoral Project Submitted to,
the College of Education and Human Sciences
and the School of Education
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

May 2020

This Doctoral Project was approved by:

_____
Dr. Thomas O'Brien
Advisor

_____
Dr. Sandra Nichols
Director

Published by the School of Education

THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI®

ABSTRACT

In 1989, the Drug-Free Schools and Communities Act (DFSCA) was signed into law. This law gave the federal government the right to deny funding to universities if they did not certify the development, use and review of programming to prevent the abuse of alcohol and illicit drugs. Among the funds that could be denied are student loans sponsored by the federal government. If a university is unable to accept student loans, the number of students capable of attending decreases. The University of Southern Mississippi (USM) is an institution that depends on students who qualify for these federal funds, thus making it necessary to follow PL 101-226.Abstracts for dissertations and doctoral projects are limited to 350 words and for theses the Abstract is limited to 250 words.

As part of compliance, USM and many other institutions that receive federal assistance are required to issue a biennial report that explains what they have done to combat the abuse of alcohol. Biennial reviews allow universities a time to amend their current programming to ensure they are complying with both the spirit and legal requirement of the law.

USM's biennial report cited need to provide up-to-date expert information in an engaging manner that would connect with students. A second issue identified in the USM report was weaknesses in the Alcohol and Other Drugs (AOD) programming. The report also listed recommendations for ongoing support of the requirements the law. One particular recommendation was to continue to explore means of increasing levels of collaboration with students with regard to their alcohol consumption behavior.

This action research project investigates alcohol use among USM undergraduates during the fall of 2019. The study also collects data students' responses to the use of technology, in the form of an app, that could provide students with real-time information about their alcohol consumption. Gathering data from a sample of undergraduate students and making use of a modified Alcohol Use Disorders Identification Test (AUDIT), the researcher collected baseline data on student alcohol behavior and student views on using an app that would provide immediate feedback on consumption. Findings indicate that a mixture of 69.7% of students surveyed are consumers of alcohol, and 30.3% do not drink alcohol. Of the students who drink alcohol, most of the sample did not exhibit a dependency on alcohol. Further findings suggest that the use of an app may assist students at USM maintain a low to moderate possibility of dependence toward alcohol.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

x

LIST OF TABLES

LIST OF ILLUSTRATIONS

LIST OF ABBREVIATIONS

AOD	Alcohol and Other Drugs
AUDIT	Alcohol Use Disorders Identification Test
DFSCA	Drug Free School and Communities Act
IHE	Institute of Higher Education
mHealth	Mobile Health
WHO	World Health Organization
USM	The University of Southern Mississippi

CHAPTER I - INTRODUCTION

General description

By the 1980s, institutes of higher education (IHEs) became more dependent upon federal funding through student loans, grants, and other forms of aid. As a result, the competition for federal funds continued to grow during this time period. The federal government was in position to require more for its return on its higher educational investment dollar. On December 12, 1989, then President George H. W. Bush signed the Drug-Free Schools and Communities Act Amendments of 1989 (H.R.3614) Public Law 101-226. Section 22 of the law amends provisions for the Drug-Free Schools and Communities Act of 1986 and the Higher Education Act of 1965 to require that, as a condition of receiving funds or any other form of financial assistance under any federal program after October 1, 1990, a university or college must submit certification that it has adapted and implemented a holistic program that informs students and staff about the consequences of using alcohol (Drug-Free Schools and Community Act, 2019). The specifics of the programs are left up to each individual institution, but the responsibility lies with the institution to show they have met the letter and spirit of the law.

As part of its compliance with the law, the University of Southern Mississippi (USM) used AlcoholEdu, an alcohol education program developed and marketed by EVERFI, a private outside organization that provides compliance training for a fee. In 2017-18 (Appendix D), USM officials dropped AlocholEdu and developed a new program within the Moffitt Health Center. This new program, Student Empower Plus, was an interactive online course mandatory for all students to help them understand the dangers and consequences of alcohol abuse and drugs, the signs of a problem, and how to

1

get help. Underage students learned essential skills, like alternatives to drinking. For students 21 or older, the course provided education on how to drink responsibly. The course emphasized personal responsibility while encouraging students to help friends make good decisions. During the 2017-18 timeframe, according to USM 2016-18 biennial report, out of the 5,195 students that were assigned the course, 1,635 students completed the program which is approximately 31.5% completion percentage. The USM biennial report also reported that in the spring of 2018, the Moffitt Health Center partnered with the Psychology department to bring the Brief Alcohol Screening and Intervention for College Students (BASICS) to Student Health Services. According to the biennial report, BASICS is a prevention and intervention program focused on high-risk students with slight, yet detectable evidence of an alcohol problem with the goal of reducing hazardous drinking through harm reduction. It was reported that in the spring semester, 12 students completed the program. Although the information is worthwhile in these programs, the number of students participating in them is low. Consequently, there is a need to reach more students with this information.

This research aims to determine the current drinking behavior of undergraduate students at USM. It also seeks to determine if students would be willing to use an interactive app to assist in making responsible decisions when consuming alcohol. As PL 101-226 does not require specific regulations for how institutions should implement holistic alcohol programming, it is sensible that institutions continue to develop new and current ways of delivering as well as evaluating and sustaining any positive effects of an alcohol reduction program. USMs holistic program includes working with different groups educating them on the use of alcohol and what they can expect from different

behavior. For instance, there was a five-hour program that university student athletes participated in that provided training on how to intervene to prevent sexual assault when alcohol was involved. Members of Greek organizations worked with Greek Life representatives to educate the members on risk management involving alcohol-related issues. Housing and Residence Life offered over 60 different programs between 2016-18 to over a thousand students dealing with AOD awareness. These programs were sponsored by resident assistants as part of the health and wellness component required by Residence Life. The Office of Health Promotion sponsored outreach efforts such as providing students the opportunity to participate in National Alcohol Screening Day. Also offered by the office is harm reduction activities such as using drunk goggles to simulate different forms of blood alcohol levels through the lens of different goggles. They also provide examples of different standard drink sizes to understand exactly how much alcohol they intake. The University Police Department offers programs such as Drug, Alcohol, and the Law that explains how state laws apply to the campus community. These different programs provided by different departments together make up USMs holistic AOD program.

<div align="center">Baseline description</div>

This research project's main goals are to study how to make alcohol educational programming more responsive and effective for students at USM, and to help USM stay in compliance with PL 101-226. According to Bewick, Trusler, Barkham, Hill, Cahill, & Mulhern (2008), the longer time away from the initial programming a student is, the more likely the influence of the program will decline. An argument could thus be made that those who are a year removed from their initial programming would have a lower self-

reported drinking score than those who had their initial programming two or more years earlier. This argument will be investigated by acquiring self-reported data from students as it relates to their current drinking behavior.

Other studies on alcohol educational programming (Berman, Gajecki, Sinadinovic, & Andersson, 2016) have suggested that mobile forms of communication have shown positive results in increasing the influence of alcohol reduction education. However, the same research has shown that the development of apps for alcohol education far outnumbers the research that analyzes the actual influence of the apps on the participants who use the apps. In response to this literature, this study collects and analyzes baseline data on student alcohol behavior at USM, as well as data on the possible influence of apps that could provide real time feedback to students as they consume alcohol.

<center>Definition of terms</center>

The first term is the **Drug-Free Schools and Communities Act of 1986** which is identified as public law 101-226, section 22. This law, which was amended in 1989, requires a university or college to submit certification that they have implemented a drug prevention program (Drug-Free Schools and Community Act, 2019).

A second term to define is **reduction programming**. Reduction programming regarding alcohol is a way to reduce alcohol consumption over time without completely abstaining from its use (Alcohol Reduction Program, 2019). This allows users to step down their use instead of stopping use all at once. It also allows users to become more responsible with their alcohol consumption behavior.

<center>4</center>

Alcohol and Other Drugs (AOD) is a term that incorporates both drugs and alcohol when it comes to reduction programming. AOD includes alcohol, tobacco, cannabis, amphetamines, ecstasy, cocaine, heroin, benzodiazepines, among others (Alcohol and Other Drugs: A Handbook for Professionals, 2004). AOD is an acronym used in the Drug-Free Schools and Community Act. While this term covers many addictive substances, alcohol is the primary focus for this study.

A fourth term to define is **binge drinking**. The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as consuming enough alcohol to raise an individual's blood alcohol concentration to 0.08 grams percent or above. As an average, this means binge drinking for men is consuming 5 or more drinks within a 2-hour period and consuming 4 or more drinks within a 2-hour period for women (Jang, Patrick, Keyes, Hamilton, & Schulenberg, 2015). The Alcohol Use Disorders Identification Test (AUDIT) is used in this study to determine the extent to which binge drinking occurs in the sample. It uses responses to questions based on amount of alcohol consumed within different time periods to suggest whether participants may have a dependence to alcohol (Lee, Cronce, Baldwin, Fairlie, Atkins, Patrick, Zimmerman, Larimar, & Leigh, 2018).

<center>Theoretical Framework</center>

Like other studies of alcohol programming (Foxcroft, Moreira, Santimano, & Smith, 2015; Ganz, Braun, Laging, Schermelleh-Engel, Michalak & Heidenreich, 2018; Perkins, 2002). this study is based is social norms theory (SNT). SNT is based on the idea that a person's behavior is influenced by what they presume are normal actions of other people who are similar to them in age and other demographics (Hahn-Smith & Springer, 2005). SNT is explained in more detail in Chapter 2.

<center>5</center>

Research questions

This action research project poses two research questions:

(RQ1): What is the alcohol consumption behavior of the freshman, sophomore, junior, and senior students at USM?

(RQ2): Would students at USM self-report being willing to use an app that informs them about appropriate alcohol consumption behavior?

RQ1 gathered information from students about their consumption behavior and then used the AUDIT to assess their dependence on alcohol. Thus, this question aims to provide a better understanding of the drinking environment at USM for undergraduate students.

To address RQ2, information on student willingness to use an app to receive information about responsible alcohol behavior was collected. RQ2 asks students if they would be willing to use an app to receive current, interactive information that may influence their drinking behavior in real time. The idea behind RQ2is that an app that could provide instantaneous information regarding a student's current condition and provide suggestions on how to proceed, might be an attractive and helpful tool for college students when they are drinking. For example, a student could enter how many drinks they have had in a amount of time to assist is determining if they were okay to drive or if they should call for alternative transportation.

Methodology

For this study the Alcohol Use Disorders Identification Test (AUDIT) was modified and used to collect data on USM student's drinking behavior. Freshman, sophomore, junior, and senior students made up the sample. AUDIT was developed by

the World Health Organization (WHO) and is a very reliable and simple screening tool which is sensitive to early detection of risky drinking behavior (source). The AUDIT has been used as a measuring tool for alcohol dependency since 1989. It evaluates Kuitunen-Paul & Roerecke (2018) respondent's answers to certain questions by considering alcohol intake, potential dependence on alcohol, and alcohol-related harm a respondent may have experienced. In a study by Sanders &Asland,1987, AUDIT was found to be useful at predicting people's alcohol behavior including people from different social and economic groups as well as different cultures and political systems.

In the fall of 2019, the sophomore class for the 2019-2020 at USM completed the current alcohol education program. Following the literature on program impact, this group was identified as the most likely to be influenced by the program when compared to the junior and senior classes (which will have had a longer period between their alcohol educational program), and the freshmen class (which would not have yet undergone their programming). As such, the researcher added supplemental questions to the survey to collect demographic information and information on how previous programming may have influenced drinking behavior.

Limitations

It is important to consider that programming is only a single factor in any holistic approach to reducing alcohol consumption among students. For example, institutions working with their surrounding communities to limit the number of bars near established student living areas near campus is an environmental factor that can influence student drinking behavior. The maturity, which is a personal factor, of students can also

influence drinking behavior. Therefore, to attribute low or high incidences of student drinking solely to an educational program would be inaccurate.

Thus, the first limitation of this study is the fact that only the educational programming portion of USM's holistic program is being researched. While the study attempted to get students to rate the influence this programming on their drinking behavior, it was not possible to control all the variables that influence student drinking behavior.

A second limitation is that the study relies on the self-reporting of students responding to the survey. It is not lost on the researcher that underage drinking is illegal, and some of those who participate in doing it might not want to admit to breaking the law. In order to combat against this reservation to participate and be truthful, anonymity was essential and was explained in the description of the study that included the consent portion of the survey to reassure participants they would not be identified with their responses.

A third limitation of this study is that it is specific to the University of Southern Mississippi, and thus is does not generalize to other institutions or settings. The researcher acknowledges that student alcohol use and consumption may be quite different at other colleges and universities. Also, findings from this study also do not generalize to students, past or future, at USM. And, finally, due to limitations with sampling, these findings may not accurately represent all undergraduate USM students in fall 2019. Findings are only valid with regard to those in the study's sample. However, the results from this study may be relatable to theses other students at USM.

Assumptions

Along with limitations, there are 4 assumption the researcher makes about the study.

1. Participants in the study answer the survey truthfully.

2. All respondents understand the questions in a consistent way

3. The questions are asking for information respondents have and can retrieve

4. The wording of the questions provides respondents with all the necessary information they require to be able to answer them in the way required by the researcher (from https://errorgirldotcom.files.wordpress.com/2012/04/cmhp-conference-2012-cognitive-aspects-of-questionnaire-design-2.pdf)

Summary and Preview

This study aims to gather and analyze data that could help officials at USM improve upon their current programming for responsible student alcohol consumption. Based on the literature, the researcher developed research questions and a research methodology. Also, the researcher defined terms, identified limitations and assumptions, and provided a context for this study.

Chapter 2 reviews the existing literature to show how previous research has influenced the design of the current study. The literature review is divided into six sections that build off each previous section in order to provide sound reasoning for conducting the current study. The review includes background information on previous legislation, theory on which this study is built, as well as specific details pertaining to alcohol reduction programming, how it is delivered, and those it can assist in making more responsible decisions when it comes to consuming alcohol.

Chapter 3 explains the methodology, data collection, storage, and analysis used for addressing the research questions. This chapter details how the sample population was identified, how participants were contacted, what information about the study was shared with them, and the consent required to participate. The researcher also provide additional information about the AUDIT and the incorporation of supplemental questions survey instrument. Chapter 4 provides specific analyses of the collected data. This includes the demographic breakdown of the sample population, their responses, as well as comparisons and contrasts between the respondents concerning the research questions. The final chapter includes discussion of the results, how they might be used to add to the current holistic alcohol programming, and how the current survey can be used by practitioners at other institutions to assist in reviewing the holistic programs at their own institutions. Finally, the researcher identifies some of the needs and opportunities for future study.

CHAPTER II - LITERATURE REVIEW

Federal legislation

Although the Drug-Free Schools and Communities Act Amendments of 1989

(H.R.3614) Public Law 101-226 was signed into law over 30 years ago, the spirit and

letter of the law has been reiterated in the reauthorization of the HEA in 2014, Section

120 [20 u.s.c.1011i]. This section of that statute states that:

"….no institution of higher education shall be eligible to receive funds or any other form
of financial assistance under any guaranteed student loan program, unless the institution
certifies to the Secretary (of the Department of Education) that the institution has adopted
and has implemented a program to prevent the use of illicit drugs and the abuse of alcohol
by students and employees that, at a minimum, includes (1) the annual distribution to each
student and employee of standards of conduct……(and) (2) a biennial review by the
institution of the institution's program……."

Certification of an Institute of Higher Education (IHE) regarding Drug Free Schools-

Community Act (DFSCA) is a one-time event unless there is a change in ownership of

the institution (DeRicco, 2006). The caveat is that if the Department of Education

requests an audit with supporting documentation from the IHE of a certain period, then it

is up to the IHE to prove they were complying during the time under review. If the IHE is

found to have been out of compliance, they are responsible for repaying any federal funds

they received during the time they failed to comply. Although the laws requiring

reduction programming when it comes to alcohol consumption can have expensive

consequences for not complying, one could argue that the true reason for the mandate is

to enable students to make responsible choices when it comes to alcohol consumption.

The following sections discuss alcohol education programming beginning with the theory

on which it is based.

Social Norms Theory

The presiding theory on which many alcohol education programs are based is
social norms theory (SNT)(Foxcroft, Moreira, Santimano, & Smith, 2015; Ganz, Braun,
Laging, Schermelleh-Engel, Michalak & Heidenreich, 2018; Perkins, 2002), and this
study make use of SNT as its theoretical frame. For alcohol education programs to be
influential, they must inform students of the actual drinking behaviors of the average
college student (Hahn-Smith & Springer, 2005). The theory is based on the idea that a
person's behavior is influenced by what they presume are normal actions of other people
who are like them in age and other demographics (Hahn-Smith & Springer, 2005). In
some cases, the perception of other people's assumptions cause individuals to act a
certain way (Hahn-Smith & Springer, 2005). For instance, if a person is listening to a
speaker who tells a funny story and the audience laughs, the individual may feel inclined
to laugh as well even if they do not find the story humorous. The perception that
everyone else thought a specific action was the correct response, may cause other
individuals to act in a similar way. Another key variable of social norms theory is
misperception (Pariera, 2018).

SNT has identified three different misperceptions. Pluralistic ignorance is a
misperception that a person believes they are acting differently than other people, when
in reality, the behavior is in accordance with the way others are acting (Buzinski, Clark,
Cohen, Buck, & Roberts (2018). So if students, for the most part, drink in moderation,
other students who themselves drink in moderation and suffering from pluralistic
ignorance would assume that they were in the minority and would drink more just to fit in
with what they perceive to be normal. Consequently, they may overcompensate at a

party when they drink more than they normally would because it is their perception that they should be drinking more. Alcohol education programs work to communicate what the normal drinking behavior really is in attempt to remove the misconception that pluralistic ignorance can cause.

False consensus is a misconception where a person mistakenly believes that their actions are the same as others in a certain group (Sokoloski, Markowitz, & Bidwell, 2018). As it pertains to drinking, an example of false consensus would be when students who drink a lot believe that other students drink as much as they do when in reality, the majority of students do not drink as much as the individual. Those who experience a false consensus can be positively influenced by education programs by realizing they are in the minority with their drinking behavior.

False uniqueness is a third form of misperception when a person believes that their beliefs or actions are in the minority, when their beliefs or actions are a part of the majority (Chambers, 2008). When someone feels unique, they can feel isolated and change their behavior in order to feel a part of a larger group. If students who do not drink experience false uniqueness, they could begin drinking simply because they do not want to be alone in their sobriety. However, if education programs can communicate the social norms of drinking, then those who have a false uniqueness may be able to change their misperception of being alone. Applying social norms theory may work to decrease misperceptions, or work to perpetuate realities that were misperceptions.

Benefits of normative information

Sharing social norms as they relate to drinking in college has been used in different alcohol reduction programs (Reed, Lange, Ketchie, & Clapp, 2007). Within

social norms theory, there are descriptive norms – how much and how often college students drink, and injunctive norms – whether student peers approve of another student's drinking. Development of alcohol reduction programs using social norms to illustrate drinking realities works to share accurate information of both descriptive and injunctive norms. If these programs assist students in understanding the realities of drinking in college, the belief is that students will adjust their drinking behavior to mirror the normative realities.

<center>Limitations of normative programming</center>

Gender differences within normative-based programming

Recent studies (Stewart & Dobson, 2018; Abel, Weaver, Roomes, Agu, Smith, Oshi, Harrison, Smith, Mitchell, Belinfante, Rae, & Oshi, 2018) have shown that the use of normative information in curbing excessive drinking in college students is more effective toward female students versus male students. Studies of alcohol use among students have demonstrated that students often overestimate how much their peers drink and overestimate the number of students participate in excessive drinking. Gender may also correlate with the level of overestimation. A study by Stewart & Dobson (2018) showed that almost fifty percent of the females (n=459) overestimated the drinking behavior of their peers, while less than five percent of the males (n=629) overestimated the drinking behavior of their peers. These results suggest that while normative education could influence drinking reduction in both genders, it stands a higher probability of influencing females than males. This further suggests that different educational programming may be required for male students when it comes to reducing alcohol consumption.

<center>14</center>

Loss of normative information

Other studies (Agabio, Giuseppina, Floris, Mura, Sancassiani, & Angermeyer, 2015; Rundle-Thiele, Schuster, Dietrich, Russell-Bennett, Drennan, Leo, & Connor, 2015) have found that alcohol reduction interventions may result in short-term declines in drinking, but the effects in consumption decline wear off as more time passes after the intervention. In order to determine a way to prolong positive effects of a reduction intervention, researchers studied the social networks that comprised a specific group of students on campus. They determined that in order to increase the probability of prolonging the positive influences of reduction programs, it is necessary to influence a student's social network. Once the members of that network have made positive changes, it is more likely that these changes will be prolonged as there is a change in culture. These limitations suggest that reduction programming be aimed at specific individuals. This type of programming should also be delivered via a source that is more interactive in order to prolong the effects.

<div align="center">Student populations and alcohol</div>

Members of Greek organizations

According to research (Tyler, Schmitz, & Adams, 2017), male and female college students who consume alcohol are at increased risks of sexual contact. Using alcohol as a mediating factor can lead to what the study refers to as 'hooking up'. However, when alcohol becomes a part of courtship, perceptions can be mistaken. When this happens, sexual victimization can occur by the absence of consent or false consent being granted and later regretted. Nowhere on a college campus is this situation more prevalent than at fraternity or sorority social events that involve consuming alcohol. Male and female

<div align="center">15</div>

attitudes toward drinking are different based on their perspective. However, romantic and sexual activity is a concern for both as it relates to excessive drinking. It also pertains to legal issues regarding drinking.

Research (Brown-Rice & Furr, 2015) has found that students who belong to a Greek organization self-reported high rates of excessive drinking and experienced more negative consequences from drinking than non-Greek students. From the previous research (Tyler, Schmitz, & Adams, 2017),one can speculate that women in sororities may be more influenced by normative-based reduction interventions than men in fraternities. In order to prolong the positive influences of any type of reduction program for both genders, it could be presumed that normative information shared after the initial intervention would be beneficial for female sorority members, and that information that influenced social networks be shared with male fraternity members.

<div align="center">mobile Health (mHealth) technology</div>

Description of mHealth technology

Mobile Health technology has been studied in order to provide health information to a society that living longer and needing portable healthcare that is portable (Helbostad, Vereijken, Becker, Todd, Taraldasen, Pijnappels, Aminian, & Mellone, 2017; Meijer & Schijven, 2017). Portable technology has been described as smartphones, smartwatches, and wristbands which can offer medical information to citizens at their fingertips. These offerings have also been referred to as wearable technology as well (Henriette & Schijven, 2017). The mHealth technology identifies new advanced ways of delivering health information to those using the wearable technology. Other technology portable in nature related to health also includes biometric sensors for monitoring vitals such as heart

rate as well as geographical sensors that record a participant's location at the time of

biometric readings. This mHealth technology also includes individualized feedback

based on biometric readings and any self-reported health information. The theory that is

based around mHealth technology is to promote healthy behavior that either avoids or

decreases health problems (Chib & Sapphire, 2018). mHealth apps are developed using

motivational-based and health-based theories. The study by Chib & Sapphire found apps

developed by motivational-based theory had the more influence on health behavior

change. While these findings are based on apps pertaining to health information, they

may also apply to apps that are aimed at curbing substance abuse problems.

Studies of mHealth

Kazemi, Borsari, Levine, Labmerson, & Dooley (2017) evaluated the body of

research on mobile, health-based (mHealth) interventions for substance use such as the

internet, text messaging, and smartphone applications to develop interventions to address

substance use. Their review included investigating the ease and convenience of the

interventions and found that mHealth interventions were effective in reducing substance

use. According to this study, further exploration into utilizing mobile technology as an

intervention delivery source is warranted.

A 2017 study by Kazemi, Borsari, Levine, Labmerson, & Dooley investigated

educational programs used to assist in reducing excessive drinking among college

students based on normative feedback theory. Their study produced results that indicated

these types of programs were indeed effective. However, the researchers identified that

students had problems keeping the provided information memorable and easy to recall. It

is thus hypothesized that the use of an app might be a successful part of a larger holistic program for reducing excessive drinking.

Integration of information and technology

Technology such as mHealth programming can play a productive part in monitoring and altering human health behavior (Noorbergen, Adam, Attia, Cornforth, & Minichiello, 2019). One way, according to research, is using biosensors to record physiological factors at different times during the day in order to create a health profile. Using that profile, people can manage current disease ailments, or change their health behavior to prevent disease. While the application of this technology explained in Noorbergen, et al. (2019) is more than what is being suggested for current study's use of an app for alcohol reduction, it does show that there is a high ceiling of where this interactive technology can lead.

Mobile Health (mHealth) technology and alcohol education

Apps

The idea of disseminating information for alcohol or drugs via an mHealth platform is not new. Researchers (Quanbeck, Marsch, Chih, Kornfield, McTavish, Johnson, Brown, Mares, & Shah, 2018) reported how a developed app (SEVA) assisted addicts who were overcoming substance abuse in a clinical setting. Results showed that the use of an mHealth app among patients with substance use disorders promoted healthier decisions by those patients during clinical recovery. Patients had significant improvement in their risky drinking days, quality of life, and illicit drug-use days. Patients were even able to develop a peer-support group via the mobile communication. This is similar to both normative-based reduction programming and programming that

18

works to influence social networks. It also provides an example of an existing program to emulate for a university setting.

Another study (Carreon, Peoples, Shipley, Wilson, & Ramirez, 2016) investigated how to discuss the negative consequences of excessive alcohol use using social media. Information was given to different organizational groups within a university about the responsible use of alcohol. The idea is for leaders of extracurricular groups to spend some time disseminating information about alcohol consumption to their members via social media. The information was provided by professionals who train organizational leaders on dissemination of that information. Overall results showed that students appreciated the discussion format rather than straight warnings. Students also appreciated the delivery via social media as well. This study (Carreon, Peoples, Shipley, Wilson, & Ramirez, 2016) is evidence of the use of social media in broadcasting information about the appropriate use of alcohol. The fact that students appreciated the discussion aspect speaks to the legitimacy of producing a social media alcohol reduction messaging system.

<div align="center">Health Education</div>

Research (de Freitas Ferreira, Moraes, Braga, Reichenheim, & da Veiga, 2018; Demirci, Demirci, & Demirci, 2018) has shown one way to influence students to drink responsibly is by sharing information with them on how drinking influences their health. In the study, those students who drank displayed worse eating habits as well as more inactivity than those students who did not drink. In order to give students reason to be responsible when drinking, it might be more influential to convey information about how to be healthy and still be able to consume alcohol. For example, sharing information

about the calorie count of alcohol could assist students in choosing to drink less to cut

calories.

Another study (Demirci, Demirci, & Demirci, 2018) suggested that sharing

information on health education and what it means to be healthy assists in building a

foundation on developing a healthy lifestyle. This includes not only discussing what a

student eats, but also their activity level as well as how much they exercise. Some

researchers (Evans, Massey-Stokes, & Denson, 2018) even suggest that a required course

on health and fitness would also be an effective part of a holistic alcohol reduction

program as a healthy lifestyle means controlling the use of alcohol so that it is used

responsibly as to not adversely impact one's health.

<center>Continuing information on being safe with alcohol</center>

Iconis (2014) investigated the contributing factors to alcohol abuse among college

students as well as strategies for intervention. The researcher found that alcohol abuse

can be attributed to individual, environmental, and demographic factors. These factors

included family history, type of residence at college as well as the size of the institution

and being male. The study found programs that reduced negative consequences while

promoting responsible drinking behavior the most were those that focused on norms

clarification and motivational enhancement. Programs focusing primarily on rules and

sanctions, as well as policy and education were not as effective at reducing alcohol-

related problems. In other words, successful programs taught how to use alcohol

responsibly instead of punishing those who used alcohol irresponsibly. Other research

also produced results to assist in making environmental adjustments when consuming

alcohol.

One study (Dornier, Fauquier, Field, & Budden, 2010) researched the possibility of using a late-night shuttle system to assist in combating the irresponsible decision of driving while intoxicated. Results from the study showed that alcohol reduction programs, while necessary, are not enough by themselves. The study found that providing alternatives such as sober shuttle service can reduce instances of drunk driving. A shuttle service could also work to prevent unsafe journeys from bars to unsafe parking areas which offers safe rides from off campus locations back to on-campus residences. Such a service also advertises safe behavior when consuming alcohol to students when they see the shuttle running routes.

Another study (Glassman, Dodd, Kenzik, Miller, & Sheu, 2010) highlighted the dangerous levels of alcohol consumption students experience during their 21st birthday. An experimental design was used to assess the efficacy of social norm and risk reduction strategies developed to reduce high-risk drinking and the negative consequences it can produce. Students were randomly assigned to four different groups which included a control group, a social norms group, a risk reduction group, as well as a mixed social norms/risk reduction group. The students in each group were then sent electronic birthday cards that contained intervention specific information. Although there was no significant change in behavior at a 3-day follow-up, the study highlighted the need to share information about responsible drinking behavior on students' 21st birthday. This is additional information that could be shared during post-educational communication.

Summary

While alcohol reduction programs have been shown to be effective, that effectiveness is reduced over time (Bewick, Trusler, Barkham, Hill, Cahill, & Mulhern,

21

2008). To extend the influence of initial alcohol reduction programming at USM, it is

necessary to first understand the drinking behavior of students at USM and who and what

influences alcohol consumption. Also, it makes sense to attempt to understand if

feedback in real time, through an app, might influence students' consumption of alcohol

Shedding light on these questions, then, may allow officials to continue to make helpful

modifications to programming and effective updates to the holistic alcohol reduction

programming at USM.

CHAPTER III - METHODOLOGY

The purpose of this study is to explore ways to make alcohol reduction education more effective by making it more accessible and responsive. This study aims to provide additional information for biennial review sessions required by Public Law 101-226. The study also offers USM officials in charge of compliance with the federal statute empirical information when considering options for cooperating with Drug Free Schools and Community Act (DFSCA).

Instrumentation

This study utilizes a survey instrument that was developed by World Health Organization (WHO) and has been validated through years of use in identifying possible misuse of alcohol. The Alcohol Use Disorders Identification Test (AUDIT) has been recognized for its validity and reliability in different studies through the years (Hildebrand & Noteborn, 2015). Specifically cited was the AUDIT's applicability in a multicultural setting (Berman, Bergman, Palmstierna, & Schlyter, 2005; Gunderson Mordal, Berman, & Bramness, 2013). The AUDIT has also been cited as providing specific variables for predicting possible substance dependency (Durbeej, Berman, Gumpert, Palmstierna, Kristiansson, & Alm, 2010; Voluse , Gioia, Carter, Dum, Sobell, & Simco, 2012). Since the design and development has been established, a traditional pilot study was not used in this research. Additional questions added to the survey were reviewed and critiqued by a quantitative analyst who assisted in making the design of the survey easier to complete. Additional critique was made to improve the quality of the supplemental questions and improve response validity by making the questions and

answer responses more relatable to participants. Consequently, the reliability of the survey responses was also increased.

The AUDIT identifies eleven symptoms related to having problems with the use of alcohol (American Psychiatric Association, 2013). The first symptom that the AUDIT looks for is drinking in large amounts or over a long period of time or amounts and periods longer than a person intends. This information is ascertained by asking multiple questions in the survey. People who drink larger amounts of alcohol are categorized as heavy or at-risk drinkers. According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), an average man who drinks five or more drinks during a drinking session, or more than 14 drinks a week, is considered a risky drinker. For the average woman, four or more drinks during a day, or more than 7 drinks a week is considered heavy drinking. Ultimately, heavy drinking puts you at risk for becoming dependent on alcohol which can cause health problems and put people at an increased risk of injury (https://www.verywellmind.com/what-is- at-risk-alcohol-drinking-67237). Another symptom of having an alcohol use disorder is wanting to cut down or control consumption of alcohol without success. The AUDIT determines this by asking respondents how often they were unable to stop drinking once they started in the last year.

As with the first symptom, AUDIT uses a myriad of different responses to questions to assist in identifying if a person is consuming too much alcohol. Deciding whether to cut down on alcohol consumption or quit altogether is based on two personal factors. The first factor is how close the person is to what is considered reasonable consumption limits. The second factor is if they exceed the limit for reasonable rates of

consumption by a large amount. If a person is indeed close to reasonable rates of consumption, then they may just need to cutdown their weekly intake by a certain amount of drinks. However, if this does not work and a person cannot stay within the limits they set for themselves, then they should consider quitting altogether. A general rule of thumb is that if a person cannot limit themselves to one or two drinks, and do so consistently, then they may want to consider quitting altogether (https://www.verywellmind.com/ should-you-cut-down-drinking-alcohol-or-quit-69441). Cutting down or quitting is solely up to the person. Thus, the AUDIT can be a useful tool by identifying if people need to evaluate their consumption rate.

Another physical symptom includes people developing an increased craving for alcohol. When alcohol is used on regular basis, the body develops a need for its consumption. As the need to consume more alcohol increases, a person may use it in situations that are physically hazardous. These physically hazardous situations include driving while intoxicated, operating machinery at a place of business while intoxicated, or caring for people while intoxicated in a manner that may cause them harm. The need to consume more alcohol is also a physical phenomenon known as developing a tolerance to alcohol (https://www.verywellmind.com/alcohol-and-tolerance-66572). This means that a person needs more alcohol to experience its desired effects. The last type of physical symptom is withdrawal. This occurs when a person attempts to stop drinking and experiences negative physical symptoms that include severe neurological problems and in some cases death (https://www.verywellmind.com/dont-be-afraid-of-alcohol-withdrawal-80194). According to research (Fager & Melnyk, 2004), once a person is experiencing these later stages of alcohol dependency, intervention programs that are

delivered via some type of technology whether that be an app or the internet have very little effectivity. At this point, the person would benefit more from professional counseling or rehabilitation.

The AUDIT can assist in identifying whether or not a person has any signs of dependency, may need to adjust their consumption pattern, or may need the assistance of a professional to overcome alcohol consumption that is hazardous to their health. This instrument has been used for nearly four decades and has been developed and refined by medical professionals who contribute the healthy well-being of people around the world. Consequently, it is with great confidence that the responses from survey participants will result in an accurate, and valid depiction of the alcohol consumption of students at USM. Once the level of consumption is determined, it can then be cross-referenced with the influential factors of alcohol consumption and whether additional education of responsible alcohol consumption is needed and to what degree. Finally, student response as to whether or not they would be likely to use and support an app that supplies updated information about responsible alcohol consumption can be tabulated. All of this information together can be used to assist university officials during biennial reviews of programming that supports responsible alcohol consumption.

Scoring AUDIT

In scoring student responses to the AUDIT, questions 1 to 8 are scored on a five-point scale from 0 to 4. Questions 9 and 10 are scored on a three-point scale from 0, 2, and 4. Responses render three different types of scoring. A *consumption score* is produced by adding up questions 1 to 3 with a maximum possible score of 12. A score of 6 or more indicates a larger consumption rate than normal. A *dependence score* is

26

produced by adding up questions 4 to 6 with a maximum possible score of 12. A score of 4 or more suggests the possibility of alcohol dependence for the respondent. Finally, an *alcohol-related problems score* is produced if any questions from 7 to 10 results in any type of scoring, no matter how small or large the score. If a problem is detected from questions 7 to 10, it is suggested that further investigation be conducted to determine if the problem is of current concern (Babor, de la Fuente, Saunders, & Grant, 1992; Saunders & Aasland, 1987).

Dependency scores are calculated as part of the AUDIT but are reportedly independently of each participant's overall AUDIT score (Appendix C). Any score below 4 denotes the respondent has a low risk of dependence toward alcohol if the AUDIT score is between 0 and 7 (World Health Organization). If the dependency score is below 4, and the AUDIT score is between 8 and 15, the respondent may have a moderate risk of harm from alcohol use. If the dependency score is 4 or more, and the AUDIT score is between 8 and 15, it is suggested that counseling may be required to assess for dependency. If an AUDIT score is between 16 and 19 and a dependency score is below 4, there may be a high risk of dependency. A dependency score of 4 or more is reported, the participant should be assessed for dependency. If an AUDIT score is 20 or more along with a dependency score of below 4, it indicates that the participant doing harm to themselves and dependency is likely. If a dependency score of 4 or more is reported with an AUDIT score of 20 or more, dependency is almost a certainty (Babor, de la Fuente, Saunders, & Grant, 1992).

Supplemental items added to instrument

In addition to collecting the researcher chose to collect data on situations or activities that might impact a student's alcohol consumption. Items added were based on findings and suggestions from the literature. In total 8 items were added to the survey.

The researcher added an item to compare the college drinking behavior of students involved in organized sports versus those not involved in organized sports. The idea was that if participants were seriously into sports, that fact might have an impact on alcohol consumption behavior.

In order to address why students might drink in excess of moderation, the researcher added an item that asked respondents what might make them drink more alcohol. Response options to the question (such as "hooking up," and increased ease to talking to someone who is attractive) were taken from previous literature (Garcia, Litt, Davis, Norris, Kaysen, & Lewis, 2019). One possible response was increasing the chance of hooking up with someone.

Tailgating or pregaming (Haas, Wickham, Zamboanga, Read, & Borsari, 2018) is when students drink before a sporting event such as a football game while communing with friends. This is often a time for binge drinking to occur because of the condensed time to drink before a game. In order to address if students' drinking behavior might be affected when attending such events, the researcher added an item that asked what activities might make students drink more. Among the responses were attending a sporting event which included tailgating.

Another item was added that asked if participants would use an app to learn how their drinking behavior compared to the behavior of others. Participants were asked how

often they might use an app for this very reason. This question was asked in relation to

social norms theory. If USM officials decided to pursue development of an app,

responses to this question might act suggest how normative information could be

considered useful to users as they attempt to evaluate their own drinking behaviors.

Finally, the researcher added another item to the instrument to determine how

many students might use the app strictly for health purposes. This question was asked in

order to understand if responsible consumption could be influenced by attempting to be

healthier. This might influence the type of information provided in an app.

Research has found that students who belong to Greek organizations tend to drink

in greater quantities and more frequently than their non-Greek fellow students (Arria &

Wagley, 2019). This can be due, in part, because Greek students are often surrounded by

those who use and/or are addictive to alcohol (Lo & Globetti, 1995). Thus, the researcher

added an item to collect data on students in Greek organizations to be compared to

students who were not members of such social organizations.

Research design

For this study, two variables are considered as the dependent and independent.

The dependent variable is the extent to which each student participant drank. This is

measured using the AUDIT.

The independent variable, derived from Social Norms Theory, is the person(s)

and/or thing(s) that influence drinking activity, or lack thereof, whichever the case may

be. Findings could assist in determining the information shared via an app that could be

used to influence student drinking behavior. This research aims to determine naturally

existing influences that support or do not support responsible alcohol consumption at

USM. This, one hopes, will give us a better understanding of the state of alcohol use and

its influences at USM.

This research ultimately seeks to assist in making alcohol reduction education

more effective by making it more available. The availability component of this research

lies in understanding if students would use an app modeled after that of a mobile health

(mHealth) app. Thus, the survey questionnaire ends by asking specific questions about

app usage at USM.

Setting and Participants

USM is a four-year state university that is in Hattiesburg, MS. On the Hattiesburg

campus, there are approximately 13,593 undergraduate students and 2,589 graduate

students (https://nces.ed.gov/collegenavigator/?s=MS&ct=1&ic=1&id=176372#enrolmt).

There are a reported 3,000 spaces on campus to live including 14 residence halls, 10

sorority houses, and 9 fraternity houses (https://www.usm.edu/housing-residence-

life/campus-living.php). This means that approximately 80% of students at USM are

commuters. According to the 2010 census, the city of Hattiesburg has a population of

45,989. There are multiple bars and restaurants where alcohol is sold and consumed on

premise in Hattiesburg. There are also several clubs in the city that offer alcoholic

beverages and dancing as a form of entertainment. As such, there is ample opportunity

for students to consume alcohol. These opportunities, in part, make it pertinent for the

university to offer an effective education on how to consume alcohol responsibly that is

not only in accordance with the federal higher education statutes, but is also an actual

benefit to students.

The participants for this study were students who attended USM during fall semester of 2019. Originally, the participant field was limited to undergraduate students at USM. However, once the list serve was acquired from the university, it included 13,201 student names and email addresses. In order to comply with IRB approval for this study, all respondents who answered the survey that identified as graduate students were deleted from the database. Upon further review of the collected data, some surveys were incomplete. Also, due to a mistake (explained below) a total of 534 respondents completed the survey but did not consent to the study. Those participants were also removed from the database. Consequently, out of the 13,201 surveys emailed, 1,211 students responded. From those 1,211 students, after graduate students, non-consensual participants, and incomplete surveys were removed from the list of responses, the final number of usable surveys totaled 465 responses.

Procedure

A modified AUDIT instrument (Appendix A) used to collect data for this research. The instrument sought to collect from undergraduates at USM demographic information, identify who and what influence alcohol consumption, and gather responses to question about the suitability of a real time feedback app.

The survey was distributed to 13,201 students who attended USM via their university email address. After IRB approval and the survey was distributed, it was discovered that the survey description and consent to participate was invalid as these were included in the solicitation email instead of being in the survey itself. To comply with IRB, the responses collected to the time were deemed inadmissible because the responses were given without proof of consent. Consequently, the survey was

discontinued in Qualtrics. In total, 534 completed surveys were voided. The survey was then edited to include the description and consent to participate. At this point, the data collection process was corrected and run again as explained here. A description and explanation of the study, as well as the consent to participate, was written within Qualtrics. An invitation email (Appendix B) was written within Qualtrics as well and sent to students' email addresses using the listserv. Within the email, Qualtrics automatically added a link to the survey if participants consented to participate and respond to questions in the survey. The data were then collected.

As responses were collected in Qualtrics, each participant's responses were coded by the month, day, and time in which they responded to the survey. For respondents who submitted at the same time, they were listed as (a), (b), (c), etc. after the month, date, and time. These data were placed in a spreadsheet and coded to give the respondent a specific label. This procedure ensured anonymity while being able to account for all responses from Qualtrics. Once the data was coded, AUDIT scores were calculated, and descriptive statistics applied in order to better understand the types of drinking behaviors that existed on campus. Chapter 4 explains how the researcher made use of Qualtrics to run crosstabs of different individual demographic data as it was compared with other survey questions. Qualtrics was also used to examine whether students would use an app as a possible way of extending their drinking knowledge obtained in program courses delivered during the students' first semester.

Data processing and analysis

The researcher calculated each respondent's AUDIT score in order to address the first research question regarding the alcohol consumption habits of undergraduates at

USM. According to instructions on how to score the AUDIT (Appendix C) the columns

of the AUDIT are scored from left to right. Questions 1-8 are scored on a five-point scale

with a score of 0, 1, 2, 3, and 4. Questions 9-10 are scored on a three-point scale where if

the participant chooses response one, two, or three the score is recorded as 0, 2, and 4

respectively. The first question of the AUDIT is coded with skip logic in Qualtrics and if

the respondent answers 'Never', they are automatically moved to the ninth question of

the AUDIT. When this occurs, respondents are to be assigned a score of zero. An

AUDIT score is then tabulated which has a minimum score of zero and a maximum score

of 40. The AUDIT scores are then broken down into four different levels. These include

low risk, risky or hazardous, high-risk or harmful, and high-risk. A dependence score is

then calculated by adding the scores from questions 4, 5, and 6. A score of 4 or more

from these questions suggests the respondent may have a dependence on alcohol.

Answers to supplemental questions were then compared with participant AUDIT

scores. This works to build a demographic profile of low to high risk level drinkers

regarding who and what influences their drinking. It also identifies if they have been

through an alcohol education course. The answers to the other supplemental questions

provided information about what to put in an app about drinking, and whether students

would be willing to support the app with part of their student fees. This information will

assist in identifying whether app delivery is worth pursuing regarding alcohol education

sustainment.

<center>Internal and external validity</center>

There is assumed to be a high degree of internal validity regarding the instrument

used in this study as it was developed by the WHO and has been used for almost four

<center>33</center>

decades. It has been determined that the instrument is successful in the early detection of risky and high-risk drinking (Miller, Brennan-Cook, Turner, Husband-Ardoin, & Hayes, 2018). The process of scoring survey responses to determine an AUDIT score and consumption score is straightforward. The supplemental questions were reviewed and critiqued by two senior researchers as well as an outside research assistant to ensure questions were obtaining desired data in a timely manner. As this is an action research project, the focus of the outcomes only relates to fall 2019 semester undergraduate students at USM. Thus, these results are not intended to be generalized to other institutions or other students. Therefore, external validity is not an applicable concern as it relates to this study.

Summary

This action research project uses a quantitative design to yield data that are specific only to USM. The AUDIT instrument used is valid and appropriate for this study. The data collection and storage used protects participant identity by labeling respondents by the date and time of their response, and then coding their responses into a separate spreadsheet. The format in which the data was collated offered a convenient and practical way for analysis, understanding, and application as appropriate. Chapter 4 details the results of the collected data.

CHAPTER IV – RESULTS

Undergraduate students who responded to the survey included freshmen, sophomores, juniors, and seniors. Figure 1.1 and Table 1 show the number of participants from each class as well as the percentage from each class included in the study. Of the 465 participants, 137 were freshmen, 53 were sophomores, 147 were juniors, 128 were seniors. No graduate students responded to the survey.
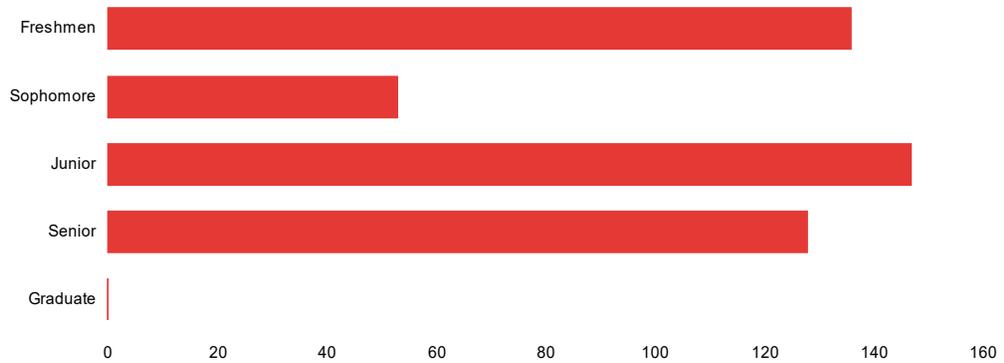
Figure 1. Participant's Year in College.

Table 1

Participant's Year in College

Year in college	Percent of participants	Count
Freshman	29.46%	137
Sophomore	11.27%	53
Junior	31.68%	147
Senior	27.59%	128
Graduate	0%	0
Total	100%	465

Almost half of those who responded were in their first year at USM. This does not necessarily mean that these participants were freshmen because "first years includes transfer students. Transfers, however, may or may not have been exposed to alcohol education from another institution, and this possibility is another limitation of the study.

As shown in Figure 1.2 and Table 2, almost 42% of the total number of respondents were transfers. These participants were not exposed to any type of alcohol education at USM.
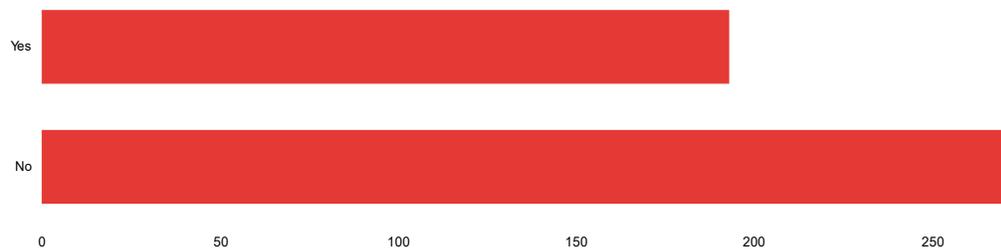
Figure 2. Participants Reporting as Transfers.

Table 2

Breakdown of Transfer Students

Response	Percent of Participants	Count
Yes	41.51%	193
No	58.49%	272
Total	100%	465

Previous research demonstrates that there is a difference between men and women when it comes to drinking behavior. Men tend to drink more often and in higher quantity. Thus, a comparison of AUDIT scores was made in relation to the drinking behavior by sex. In this study, almost three quarters of participants were female. As Figure 1.3 and Table 3 show that female respondents outnumber male respondents by a

total of 334 to 131. An average of the male and female participants' AUDIT scores were compared. The average male AUDIT score is 4.50. The average female AUDIT score is 3.11. Thus, this finding is consistent with previous research regarding alcohol consumption and sex. Note the ratio of men to women at USM is 37% to 63%. The caveat is that males make up only a quarter of the respondent population which makes their scores less representative of the USM student population than if the number of males and females were evenly split.
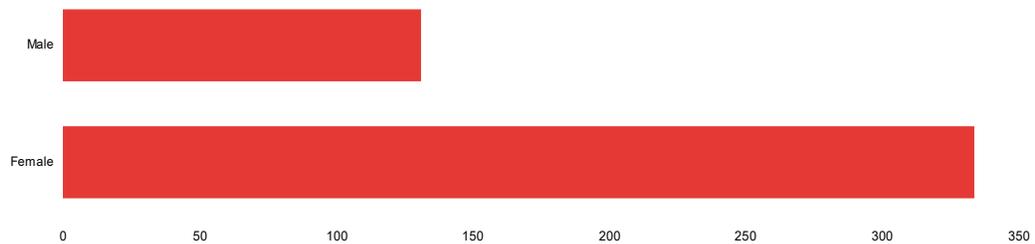
Figure 3. Sex of Respondents.

Table 3

Sex of Respondents

Sex	Percent of Respondents	Count
Male	28.17%	131
Female	71.83%	334
Total	100%	465

The demographic of age choices was set up to shed light on who may have had had easier access to alcohol as well as which age groups consumed alcohol. The sample was close to being evenly split between students who were of legal drinking age and those who were not. One assumes that alcohol would be easier to find for those of age because of lawful access to it in stores and bars. Underage students still have access to

alcohol, as well, but would probably procure it in ways that could be more difficult and time consuming. The average AUDIT score of those who were underage was 3. The average AUDIT score of those who were of legal age to drink was 4.08. While the legal age group had a higher AUDIT score, it was a little more than one point.
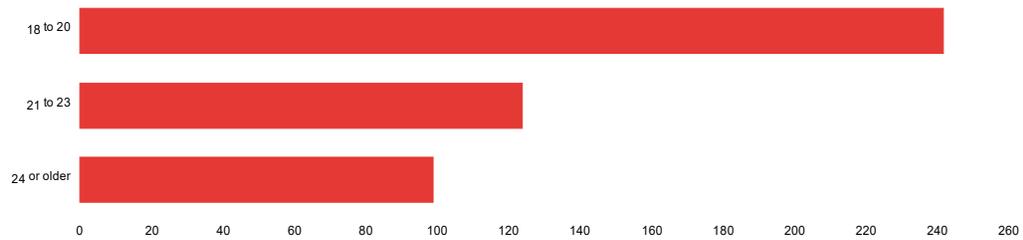
Figure 4. Age Categories of Respondents.

Table 4

Age Categories of Respondents

Age Categories	Percent of Respondents	Count
18 to 20	52.04%	242
21 to 23	26.67%	124
24 or older	21.29%	99
Total	100%	465
Total	100%	465

The literature suggests that students who belong to Greek organizations have a greater tendency to consume alcohol (Brown-Rice & Furr, 2015). However, the respondent sample in this study did not consist of many students who belonged to Greek organizations (Figure 1.5). Sixty-seven respondents (14.4%) reported belonging to a Greek organization. The average AUDIT score for the 67 respondents was 5.46 as

compared to an average score of 3.20 for the 399 respondents who were not in a Greek organization.
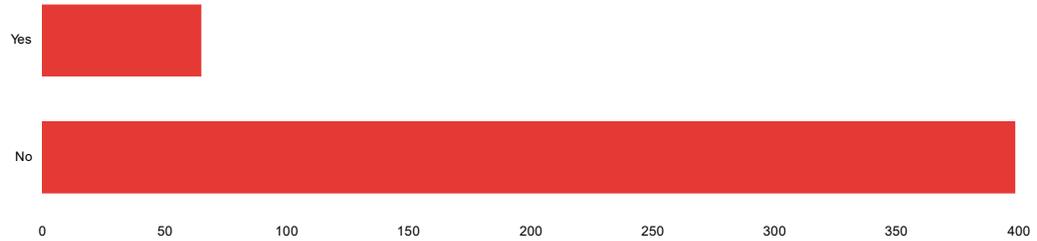
Figure 5. Participants Belonging to Greek Organizations.

Table 5

Respondents Belonging to Greek Organizations

Response	Percent of Respondents	Count
Yes	14.01%	65
No	85.99%	399
Total	100%	464

The last demographic statistic collected was whether participants engaged in organized sports, either inter-collegiate or intramural. The number of participants who reported participating in organized sports is less than 5%. While this is not enough of the sample to render conclusive results, it is noted for future consideration. Of the 20 respondents that reported participating in inter-collegiate or intramural sports, the average AUDIT score was 3.59. The average AUDIT score for 445 respondents who reported not participating in either type of sport was 3.53.
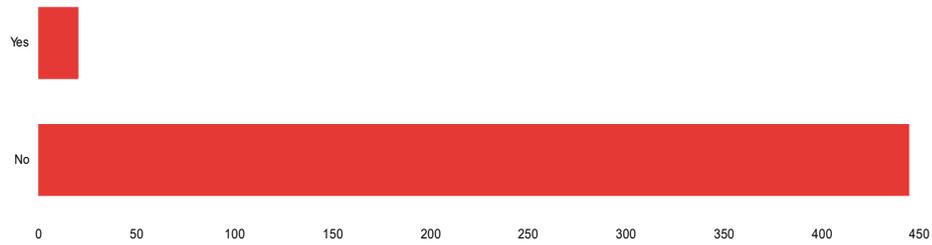
Figure 6. Respondents Who Played Organized Sports.

Table 6

Respondents Who Played Organized Sports

Response	Percent of Respondents	Count
Yes	4.3%	20
No	95.70%	445
Total	100%	465

Answering the first research question required calculating the AUDIT score for the participants. Overall AUDIT scores are seen in Table 7. The total possible AUDIT score is 40 points. 92.96% of the sample scored an AUDIT score of 10 or less. The remaining 7.04% of the sample had an AUDIT score between 11 and 29 (Table 7). This suggests that an overwhelming majority of participants did not demonstrate irresponsible alcohol usage. In order to fully understand the AUDIT scores, the dependency scores need to be taken into consideration as well.

Table 7

AUDIT Scores for Respondents

No. of Participants	AUDIT Score	Percentage of Participants
141	0	30.26%
74	1	15.88%
35	2	7.51%
39	3	8.37%

38	4	8.15%
32	5	6.87%
22	6	4.72%
16	7	3.43%
13	8	2.79%
14	9	3.05%
9	10	1.93%
9	11	1.93%
2	12	0.43%
3	13	0.64%
2	14	0.43%
6	15	0.86%
3	16	0.64%
2	17	0.43%
1	18	0.28%
1	21	0.28%
1	23	0.28%
1	25	0.28%
1	28	0.28%
1	29	0.28%

Dependency scores are reported in Table 8.

Table 8

Dependency Scores of Respondents

No of Respondents	Dependency Score	Percentage of Participants
390	0	83.63%
43	1	9.23%
10	2	2.15%
11	3	2.30%
8	4	1.70%
1	5	0.28%
0	6	0%
2	7	0.43%
1	8	0.28%

Table 9 shows the AUDIT scores paired with dependency scores for participants in the study. The table also shows what the AUDIT plus dependency score means in terms of risk level for the number of respondents referred to in the first column. There were 466 valid responses when comparing AUDIT score and dependency score. Of the 466 respondents, 397 of them showed low risk of harm in their drinking behavior. This meant that 85.19% of respondents demonstrated responsible drinking habits and were at a low risk of forming a dependency on alcohol. There were 53 respondents, or about 11.37% of the sample, that displayed drinking behaviors that posed a moderate risk of

Table 9

Respondents Who May Need Follow-up with Professionals

No. of Respondents	AUDIT Score	Dependency Score	Risk Level
397	0-7	4	• Low risk of harm
52	8-15	below 4	• Moderate risk of harm. May include some clients currently experiencing harm
5	8-15	4 or more	• Assess for dependency. Counselling may be required.
5	16-19	below 4	• High risk or harmful level. Drinking that will eventually result in harm, if not already doing so. May be dependent.
1	16-19	4 or more	• Assess for dependence. May need counselling. Follow-up and referral where necessary.

0	20 or more	below 4	• High-risk. Definite harm, also likely to be alcohol dependent. Assess for dependence.
5	20 or more	4 or more	• Almost certainly dependent. Assess for dependency. • Pharmacotherapy to manage cravings. • Relapse prevention, longer-term follow-up and support.

dependency on alcohol. There were 5 participants whose responses suggested further

assessment for dependency and possible counselling would be appropriate. Another 5

participants responses displayed a high risk of dependency and whose behavior could

eventually result in harm. One participant's response suggested counselling might be in

order to assist in behavior modification with regard to their alcohol consumption. Finally,

there were 5 participants whose responses suggested they were dependent on alcohol and

may need additional assessment by means of counselling and medication. Overall, about

3.43% of the sample reported a score that suggests that professional intervention is

needed to assist with possible dependence on alcohol. All these categories include those

participants who may have drank at one point, but no longer consume alcohol. Some of

these participants also reported injuring themselves or others while consuming alcohol.

Although this added to dependency scores, these specific respondents did not add to the

3.43% of the sample needing possible further professional care.

Table 9 shows that some participants from the sample might be an appropriate

group of candidates for continuous normative feedback intervention such as an app to

support the 85.19% of low risk alcohol consumption currently being reported.

Interventions such as an app would not work well for those needing additional professional services such as counselling. As the sample population does not reflect a high percentage of high-risk dependency, an app may be appropriate.

Table 10 shows that the majority of the sample reported they have not been through an alcohol education program at USM that taught them to drink responsibly. This question was originally added to the questionnaire in order to gauge how much of an impact past programming had on student drinking behavior. However, after reviewing the responses to this question, there were 266 respondents that reported as not being a transfer. This leaves 211 students claiming they have not gone through programming at USM. Knowing there has of alcohol education programming while these students were present at USM, it was determined that either the respondents did not remember going through the program or did not understand what the question was asking. In either case,

Table 10

Have you gone through an alcohol education program at USM that teaches you to drink responsibly? If yes, when?

Participants	Response	Percentage of Participants
407	No	88.17%
27	0 to 6 mos.	5.81%
11	6 mos. to 1 year	2.37%
13	1 to 2 years	2.80%
4	More than 2 years ago	0.86%

responses to this question were not used to infer how past programs impacted student drinking behavior. Of those who did not participate in an alcohol education program, their classification and average AUDIT score are listed in Table 11. As seen in the table,

the average AUDIT scores reflect low level risks of alcohol dependency based solely on those scores. Use of an app that can extend these AUDIT scores can benefit this population as these are not students who are in danger of becoming dependent on alcohol.

Table 11

Do students who have not attended alcohol programming have a different average

AUDIT score than those who have attended programming?

Class	Did Not Attend Alcohol Education Course	Average AUDIT Score
Freshmen	117	2.7
Sophomore	49	3.65
Junior	133	3.32
Senior	108	4.4
Total	407	3.52

Instead, these are students who could use portable, easily accessible information that can continually offer information that supports their current low-level risk of dependency throughout their college career.

Table 12 shows the respondents who reported attending alcohol educational programs at USM. In general, the average AUDIT score for those respondents overall was 4.22 which is a low-level risk for dependency to alcohol. It is also higher than the 3.52 average of those who reported not attending alcohol educational programs which may seem odd as this result disagrees with literature (Carey, Scott-Sheldon, Garey, Elliott, & Carey, 2016)

that shows these programs demonstrating lower AUDIT scores. However, the differentiation of the sample population reporting having gone through educational programming is significantly less than the population reporting having not gone through educational programming which skews the results within an acceptable range.

Table 12

Do students closer to their alcohol education program (i.e. Freshmen) have lower, higher, or the same AUDIT scores as those further away (i.e. Seniors)?

Class	Attended Alcohol Education Course	Average AUDIT Score
Freshmen	18	1.4
Sophomore	5	5.8
Junior	14	4.21
Senior	22	5.47
Total	59	4.22

The question in Table 13 is posed to understand particular people in students' lives who might influence their drinking behavior. Respondents had the opportunity to answer all the choices that applied to them. Over half of those that responded reported that no one specifically influenced their drinking behavior. Of those who were reported

Table 13

Who influences your consumption of alcohol? (Check all that apply)

Participants	Answer	Percentage of Participants
159	Friends	27.04%
64	Parents	11.39%
60	Significant other	10.20%
1	Counselor	0.17%
301	No one specifically	51.19%

as having influence, friends outnumbered parents by more than two to one. Friends also outnumbered significant others by more than two to one as having influence on student

drinking behavior. Only one respondent reported a counselor had influenced their drinking behavior. For university officials in charge of alcohol education programming, knowing that friends might be the most influential members of the population may encourage the use of education programs based on the sharing of normative drinking behavior to promote moderation in drinking.

Table 14

What influences your consumption of alcohol? (Check all that apply)

No. of Participants	Answer	Percentage of Participants
8	Pamphlet	1.60%
45	Internet	9.00%
18	Mobile device	3.60%
22	Formal class	4.40%
407	None specifically	81.40%

when seeking out information about drinking alcohol. The respondents reported overwhelmingly that there were not specific media outlets used for acquiring information about alcohol consumption.

Table 15

What would influence you to drink less? (Check all that apply)

No. of Participants	Answer	Percentage of Participants
132	Fear of DUI	17.19%
117	To be healthier	15.23%
98	Unexpected sexual experience	12.76%
120	Hurting someone else	15.63%
301	Try not to drink excessively	39.19%

Of the media outlets that were reported as being used, the internet ranked higher than mobile devices suggesting that students might be more familiar using web-based

programming versus that of an app. This might be a challenge for USM officials in

getting students to use an app as a primary source of obtaining information about alcohol

usage. This might suggest that a tutorial on using the app if officials decided to provide

one for students.

If USM decided to use an app, different information may prove to make it more

worthwhile to students. The question in Table 15 was asked to assist in deciding what

topics might influence students to drink less, or in a more moderate fashion. A high

percentage of respondents, 39.19%, reported they try not to drink excessively. Of

situations offered that might influence less drinking, fear of receiving a DUI topped the

list.

As to why one might drink in excess of moderation, most participants responded

that they try not to drink more than they should (Table 16). However, the top two reasons

to drink more is to gain relief from stress and be more social respectively. These

explanations are consistent with what others have found as popular reasons to consume

alcohol (Tyler, Schmitz, Adams, & Simons, 2017).

Table 16

What would influence you to drink more? (Check all that apply)

No. of Participants	Answer	Percentage of Participants
32	'Hooking up'	4.78%
67	Sporting Event	10.01%
155	To be more social	23.17%
157	Relief from stress	23.47%
258	Try not to drink more than I should	35.57%

Drinking while at a sporting event's tailgate, or pre-gaming as it is known, is

popular among college students (Patrick & Azar, 2017) and is the third most popular

reason to drink more for the study participants at USM. The fourth-ranked reason for

drinking more cited by respondents is to assist them with sexual experiences. Again,

providing information on how to responsibly enter into a physical relationship cross-

references with drinking less in order to avoid unexpected sexual experiences.

The question in Table 17 attempted to understand if students would use an app to

learn how their drinking behavior compared to the behavior of others. Almost a quarter

of the respondents reported that they would use an app for normative purposes at least

one to possibly more than three times. Of these respondents, 19 had AUDIT scores that

were considered elevated to high. That meant that the other 92 who reported they would

use the app these number of times had AUDIT scores that were low risk for being

dependent on alcohol.

Table 17

How often would you use an app to learn about how your drinking behavior compares

with the most current drinking behavior other students?

Participants	Answer	Percentage of Participants
334	Never	71.98%
80	Once	17.24%
20	Three times	4.31%
11	More than three times	2.37%
19	On a regular basis	4.09%

Table 18 shows that a little over a quarter of those who responded reported they

would use the app at least once to more than three times for the express reason of

determining how drinking would influence their health. As with the question in Table 17,

19 of the 124 respondents who reported they would use the app for health purposes had

AUDIT scores that were elevated to high risk for dependency to alcohol. This also meant

that 105 of the respondents reporting they would use the app for how alcohol influences

their health reported having AUDIT scores that showed a low risk level for alcohol

dependency.

Table 18

How often might you use an app to learn about how your drinking behavior influences

your health?

Participants	Answer	Percentage of Participants
315	Never	67.89%
90	Once	19.40%
22	Three times	4.74%
12	More than three times	2.59%
25	On a regular basis	5.39%

Table 19 shows the comparison between those who reported using the app for

normative feedback and those who reported using the app for health purposes. As seen in

the table, there were more respondents who reported using the app for how alcohol

Table 19

Of the students willing to use an app related to alcohol use, were they more inclined to

use if for learning how their drinking behavior compares to others, or how their drinking

behavior affects their health?

Reason	Once	Three times	More than three	On a regular basis
Compare Behavior	80	20	11	19
Affects Health	90	22	12	25

effects their health versus those who would use the app to compare their drinking behavior with others. Of the 130 participants who responded they would use the app for comparative behavior, and the 149 participants who responded they would use the app for the effects of health, there were 83 participants who answered they would use it for both reasons.

Table 20 shows the AUDIT scores of students who are underage, who have just become of legal drinking age, and those who have been of legal drinking age for three or more years. These AUDIT scores range from 0 to 29 and indicate that the oldest age set has the highest percentage of low AUDIT scores.

Table 20

What are the AUDIT scores of underage drinkers compared with legal aged drinkers?

AUDIT Score	18 to 20	21 to 23	24 or older
0-7	207	103	87
8-15	28	22	8
16-19	2	3	1
20 or more	2	3	0

Research has shown that men and women tend to have different drinking behaviors when it comes to alcohol (Tyler, Schmitz, & Adams, 2015; Boyle, LaBrie, Froidevaux, & Witkovic, 2016). However, research has also shown that both males and females will drink to perceived expectations (Tyler, Schmitz, & Adams, 2015). As AUDIT scores for males and females show in Table 24, a large portion of the sample reported scores indicative of low risk of dependency to alcohol. As the risk grew to medium to high, males began to outnumber females. This has also been shown by earlier research (Krieger, Young, Anthenien, & Neighbors, 2017).

Table 21

What are the AUDIT scores of males as compared to females?

AUDIT Score	Males	Percent of Respondents	Females	Percent of Respondents
0-7	109	23.4%	288	61.8%
8-15	23	4.9%	35	7.5%
16-19	4	0.87%	2	0.44%
20 or more	3	0.65%	2	0.44%
Total	139	29.82%	327	70.18%

As there was a relatively small population of Greek students in the sample, within group analysis shows that there was a larger portion of the Greek sample that scored in the medium-risk category than the non-Greek sample. However, within group analysis shows there was a larger non-Greek population that score in the high-risk category than the Greek sample. Part of the basis for this phenomenon of medium- and high-risk categorization is illustrated in the table below. The results in the Table 22 show that, collectively and within the same group 13.4% of

Table 22

Did Greek members report hurting themselves while using alcohol than others?

Participants	No	Yes, but not in the last year	Yes, during the last year
Greek	58	7	2
Non-Greek	343	42	13

Greek students injured themselves at some point in time due to the use of alcohol. The table also shows that, collectively and within the same group, 13.8% of non-Greek students injured themselves at some point due to the use of alcohol. This illustrates that both Greek and non-Greek students injure themselves nearly the same due to the use of alcohol.

There were not enough participants that reported playing organized sports to draw inferences between alcohol use of athletes and non-athletes. As such, results of this item were not reported.

CHAPTER V – DISCUSSION

Key findings

Research question one

One purpose of this study was to determine the alcohol consumption behavior of

the freshmen, sophomore, junior, and senior students at USM. Most participants scored

on the AUDIT as being at a low-risk level of alcohol dependence. This suggests that the

majority of participants may have benefited from normative programming (Reed, Lange,

Ketchie, & Clapp, 2007) that provides information to assist students in either

reestablishing or continuing drinking behavior that is consistent with the rest of society,

according to their demographics. There was a small minority of participants whose

reported consumption would not be affected by normative programming as their drinking

behavior would require more intensive counseling to promote behavioral change.

Research question two

A second purpose of this research was to investigate whether students at USM are

a viable population to receive information about alcohol consumption via an app

developed by experts in the field of alcohol use. Using an instrument that predicts

dependency to alcohol, 85% of the sample self-reported they can be positively influenced

by normative information shared via an app. This normative information is based on

social norms theory (Foxcroft, Moreira, Santimano, & Smith, 2015; Ganz, Braun, Laging,

Schermelleh-Engel, Michalak & Heidenreich, 2018; Perkins, 2002). Consequently,

information shared in an app should support behavior change via realistic and actual

consumption activity from the majority of those in a similar demographic group of

students. The reason that this percent of the population might be positively influenced is

that their current drinking behavior reflects a low risk of becoming dependent on alcohol which research (Rodriguez, Neighbors, Rinker, Lewis, Lazorwitz Gonzales, & Larimer, 2015) indicates as the more influential group of such an intervention. The purpose of sharing this information is to correct some of the common misperceptions related to drinking alcohol (Carey, Scott-Sheldon, Garey, Elliott, & Carey, 2016). Another purpose of sharing this information is to assist keeping those who are currently at a low risk of dependency on alcohol from escalating to a medium or high risk (Lewis & Neighbors, 2006).

The findings in RQ2 also suggest that it makes sense to pursue the development of an app to assist in getting current normative information that relates to the consumption of alcohol. The development of an app that provides information in a timely manner, and thus addresses a weakness cited in the biennial report. As part of the app, pre-programmed expert advice can provide app users with alternatives to drinking, as well as help the user identify signs to look for if the other in their proximity are in danger of becoming dependent on alcohol. This encourages the use of the app for a student's personal use as well as to assist in identifying problems fellow students or friends may have with alcohol consumption.

<div align="center">Interpretations of results</div>

USM student educational programming participation

A high percentage of respondents report not having gone through an alcohol education program at USM. This finding confirms another recommendation in the biennial report that states that USM identify a means to improve completion rates for those who enroll in AOD programs. As mentioned in the report, the lack of the

completion of modules is due to completion not being mandatory. One solution could be to add information from the modules into an app to make it accessible to all students at any time during their academic career. The information could then be used for practical purposes, not just mandating students finish the modules to show increased completion rates. In this instance, an app is worth pursuing.

AUDIT scores of students who completed education programs versus those who did not

Research (Newton, Conrod, Slade, Carragher, Champion, Barrett, Kelly, Nair, Stapinski, & Teesson, 2016) proposes that providing students with alcohol education early can influence their drinking behavior for years to come. The sample from USM shows those who report not going through an alcohol program had a lower average AUDIT score than those who did report going through a program. This suggests that the USM population may not be influenced by an alcohol education program, or they developed their consumption behavior before arriving on campus. This further suggests that a traditional education program may not be required at USM. Instead, offering something such as an app could act as a tool to support and prolong responsible drinking behavior. The availability of the information may also assist in lowering the AUDIT scores of students as they continue from their freshman to sophomore then junior and senior years at USM which, according to Table 12, is currently rising during these years.

Information in an app

As an app may be viable for use at USM, it would be prudent to discuss what type of information it should include. According to the results in Table 13, there is really no one specifically who influences the alcohol consumption of those who were sampled. Of

those who did report being influenced by someone, friends were the most popular response.

Accordingly, if an app is to be successful, it should include information about alcohol consumption that is related to something that friends would share. This means addressing the weakness cited in the biennial report of providing information in an entertaining way capable of connecting with students. Entertaining would need to be further defined, but one example could be videos showing how students act after consuming different amounts of alcohol. Another example might be to demonstrate how one's vision is impacted with a different number of drinks which could be set up to be interactive and possibly entertaining.

Table 15 showed some of the things that can influence students to drink less. This includes the negative consequences of receiving a DUI, the negative impacts of alcohol on one's health, the negative consequences of injuring others due to alcohol consumption, and the negative consequences of having unexpected sexual experiences. Consequently, updated information that explains the monetary and social consequences for each of these influencers should be added into the proposed app.

Table 16 shows what influences respondents to drink more. The top two influences were to be more social and to relieve stress. In order to reduce these influences, alternative information needing to be put in an app includes suggestions on how to be more social while consuming less alcohol as well as how to relieve stress while consuming alcohol in a responsible manner. This would be the information and delivery needed in app for it to be successful at USM when considering the information collected in Tables 13, 15, and 16.

Implications of using an app According to L. Wright (personal communication

July 19, 2018), USM has used staff to develop questionnaires as a way of measuring

student alcohol consumption behavior. As an app customized to needs USM students has

not been developed, there are probable upfront costs that include cost of research and

develpment. If USM was to commit to such an investment, it would be sensible to know

what the return on that investment might be regarding student involvement.

Student app usage for comparing normative behavior

Normative behavior regarding college student alcohol consumption is cited in this

study (Rodriguez, Neighbors, Rinker, Lewis, Lasorwitz, Gonzales, & Larimer, 2015) as

having the ability to establish drinking behavior based on actual normative behavior with

the rest of the population. Table 17 summarized the self-reported likelihood of USM

students using an app for comparison of normative drinking behavior with that of their

own behavior. A majority of the respondents reported they would not use the app even

once. However, about 28% reported they would use the app one or more times.

Consequently, app development should be directed toward these students so they would

be more inclined to use the app. They also may tell others about its existence as well as

the type of information contained in the app. Table 19 shows that 5% more respondents

reported they would use the app if it included information about consuming alcohol and

its influence on their health. This suggests that adding information about health influence

into the app may appeal to an even wider audience and could possibly influence more

students. Information concerning health aspects could include alcohol that contains

fewer calories, how much exercise is needed to work off different number of drinks, and

what body organs are impacted by alcohol consumption. Statistical information might be

used in the app to provide a practical basis to drink moderately. The app might also

include emotional appeals to discourage excessive drinking. Stories could be shared via

the app, such as an account of those who were injured or killed in a DUI accident. Using

this emotional appeal might possibly lead into the next influential component cited to

encourage respondents to drink less which is fear of hurting someone. That was

immediately followed by the wish to be healthier as something that would influence less

drinking.

Including information about how alcohol affects a person's health would seem to

be logical to add into an app according to the number of responses this component

summarized in Table 15. Included in the app might be the various types of alcoholic

drinks that have the most calories, amount and time to consume alcohol in order to avoid

a hangover, or becoming lethargic the next day, and if consuming alcohol may encourage

less healthy eating habits. Health could also coincide with the last reason for drinking

less, unexpected potentially abusive sexual encounters. Such encounters could lead also

to unwanted diseases and/or pregnancy which can have a direct influence on a student's

health and life. This type of information along with the legal ramifications of unintended

sexual experiences would also be viable in the app.

This is also further evidence of how the integration of similar information can be

shared in the app to address multiple issues. This might make the app easier to use, and/or

more effective. A successful app might include different ways to relieve stress such as

exercising which cross-connects to drinking less to be healthier. An integrated approach

of information might prove to be effective and make the app a useful tool in assisting

students to drink moderately when consuming alcohol.

Acknowledgement of limitations

This project has different limitations. As discussed in Chapter 1, one limitation of this study was that it did not consider all aspects of the holistic AOD program. Another limitation was relying on information that was self-reported, and the drawing conclusions from the results. A third limitation of this study is that is only relatable to USM and is not necessarily generalizable to other universities.

Recommendations

The information produced by this study is intended for USM officials responsible for compliance with the Drug-Free Schools and Communities Act of 1989. These recommendations are made regarding weaknesses identified in the 2016-18 biennial report at USM, specifically, a need for timely, expert information made available in a way that connects with students (USM Biennial Report, 2018). The overarching recommendation to officials at USM is to continue research and consider the use of an app in order to support responsible consumption of alcohol. This recommendation is based on the majority of USM students reporting they are not at a high risk of dependency on alcohol. This suggests that most students would not need individualized intervention from a professional. It further suggests that current and continuous information provided in an app could successfully support responsible consumption behavior at USM.

Another basis for this recommendation is that a third of USM students reported they would use an app at least one time. Among students who reported they would use the app included those who drink responsibly as well as those who do not drink at all.

This further suggests that an app could be used for behavior sustainment as well as the promotion of positive alcohol consumption behavior.

Perhaps the main reason for this recommendation is the fact that the availability of an app may increase student participation in alcohol education programming. Current research has found that the use of technology is an effective way to communicate with students (Heflin, Shewmaker, & Nguyen, 2017). Consequently, participation may increase as the information could be accessed at any time through app technology. An app could also offer new and possibly entertaining ways to deliver this information.

<div align="center">Future Research</div>

Future research should continue to explore the value an app might bring to the students at USM. Specifically, as the student population changes with incoming freshmen classes and transfers, these groups should continue to be surveyed to understand how alcohol consumption behavior is occurring at USM. If AUDIT scores begin to show students demonstrate they are more susceptible to alcohol dependency, other intervention measures may need to be considered. Also, additional study into how to best fine tune and implement the use of an app would be warranted.

<div align="center">Summary</div>

As the college student population continues to change, so too should the ways in which USM communicates with them and assists them in adjusting to college life. Technology has been brought into the classroom to make the learning experience more interactive by using current information and is thus made more memorable. Interactive learning can also exist outside the classroom in order to support students in development of their social lives. When students graduate, they will have to balance professional and

social life alike. In order to give them the best opportunity to be successful in both

aspects, it would be sensible to teach both in the most effective way possible.

Project Title: Increasing the Effectiveness of Alcohol Reduction Programming
Principal Investigator: Jason Massey   Email: jason.massey@usm.edu

1. <u>Purpose</u>: The purpose of this investigation is to make information about responsible drinking more accessible to college students. By answering the short survey, participants can assist in helping to develop useful and effective programming concerning the use of alcohol.

2. <u>Description of Study</u>: The time required to respond to the questionnaire survey is less than 5 minutes. There is no follow up to this survey, no restrictions to normal activity, nor any invasive techniques as a part of this survey.

3. <u>Benefits</u>: By participating in this survey, participants will be able to consider their own behavior when it comes to alcohol consumption. Responses will also assist in focusing on more effective communication platforms to share responsible actions when it comes to drinking alcohol.

4. <u>Risks</u>: There is no known physical, psychological, social, or financial research-related risks associated with the participation of this study. Time (5 minutes) is the only inconvenience and has been mediated by careful questionnaire selection and construction.

5. <u>Confidentiality</u>: All participant responses are completely confidential. Participants will only be known by their responses to the demographic questions in the questionnaire. Responses will be recorded in an excel spreadsheet which will be password protected. Once all data has been uploaded and tested, responses will be deleted from the server on which the questionnaire resides, and no hard copies will ever be developed.

6. <u>Alternative Procedures</u>: If you are interested in scoring your own responses regarding your tendency toward alcohol, please visit https://auditscreen.org/page.php?Using-Audit-1 and your answers will be automatically tabulated, and the results made known to you immediately.

7. <u>Participant's Assurance</u>: This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5125, Hattiesburg, MS 39406-0001, 601-266-5997.

CONSENT TO PARTICIPATE IN RESEARCH
I understand that participation in this project is completely voluntary, and I may withdraw at any time without penalty, prejudice, or loss of benefits. Unless described on the solicitation email, all personal will be kept strictly confidential, including my name and other identifying information. All procedures to be followed and their purposes were explained to me. Information was given about all benefits, risks, inconveniences were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected. Any new information that develops during the project will be provided to me if that information may affect my willingness to continue participation in the project.

For any questions you may have, you can contact the principal investigator Jason Massey at jason.massey@usm.edu or Dr. Thomas O'Brien at thomas.obrien@usm.edu.

Year in college:
>Freshmen
>Sophomore
>Junior
>Senior

First semester at USM:
>2016
>2017
>2018
>2019
>Other prior to 2016

Are you a transfer student?
>Yes
>No

Sex:
>Female
>Male

Age:
>18-20
>21-23
>24 and Over

Do you belong to a Greek organization?
>Yes
>No

Do you play an organized sport?
>Yes
>No

1. How often do you have a drink containing alcohol? (Note: 1 standard drink = a 12 oz. beer, 4.5 fl. oz. of wine or 1.5 fl. oz. of liquor).

( ) Never [Skip to Qs 9-10]
( ) Monthly or less
( ) 2 to 4 times a month
( ) 2 to 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, 8, or 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

Skip to Questions 9 and 10 if Total Score for Questions 2 and 3 = 0

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 from 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 you had been drinking?

( ) Never
( ) Less than monthly
( ) Monthly
( ) Weekly
( ) Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

( ) No
( ) Yes, but not in the last year
( ) Yes, during the last year

10. Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?

( ) No
( ) Yes, but not in the last year
( ) Yes, during the last year

11. Have you gone through an alcohol education program at USM that teaches you to drink responsibly?
( ) Yes
( ) No
( ) I don't remember

12. Who influences your consumption of alcohol? (Check all that apply)

( ) Friends
( ) Parents
( ) Significant other
( ) Counselor
( ) No one specifically

13. What influences your consumption of alcohol? (Check all that apply)

( ) Information from a pamphlet
( ) Information from the internet
( ) Information from your mobile device such as from an app
( ) Information from a formal program such as a class
( ) No information in particular

14. What would influence you to drink more? (Check all that apply)

( ) Increasing the chance of 'hooking up' with someone
( ) Attending a sporting event
( ) The ability to be more social in a group of people
( ) To get relief from a stressful day
( ) Nothing, I try not to drink more than I should

15. What would influence you to drink less? (Check all that apply)

( ) Fear of getting a DUI
( ) Wanting to be healthier
( ) Having an unexpected sexual experience
( ) Hurting someone else
( ) Nothing, I either do not drink or do not drink excessively

> ➢ An app that shares updated information about consuming alcohol and its effects could be used on a campus such as USM for students. The information could assist in learning how to consume alcohol in a responsible manner such as reminding you to eat and drink water before and during the consumption of alcohol. The app can also supply information of how to consume alcohol in a legal manner that can keep students from getting arrested. Information concerning the effects drinking has on one's health can also be shared through the app. With this in mind, please respond to the questions 16, 17, and 18.

16. How often would you use an app to learn about how your drinking behavior compares with the most current drinking behavior other students?

( ) Never
( ) Once
( ) Three times
( ) More than three times
( ) On a regular basis

17. How often would you use an app to learn about how your drinking behavior influences your health?

( ) Never
( ) Once
( ) Three times
( ) More than three times
( ) On a regular basis

18. Would you pay an annual fee to use an app to learn about how your drinking behavior influences your health?

( ) Yes
( ) No

APPENDIX B Invitation Email

Email Subject Line: Survey on Alcohol Use at USM
Greetings Fellow USM Student,

My name is Jason Massey and I am currently conducting a study on alcohol consumption behavior. As a member of the student population at USM, you have been selected to participate in a survey that compares your drinking behavior with others at USM.

By participating in this survey, you are adding to the depth of knowledge that illustrates the overall drinking behavior of students at USM and what, if anything, can be done to assist you in making informed decisions when consuming alcohol.

To access the consent form, please click on the link below.

[Link to survey](#)

Best Regards,
Jason

APPENDIX C - How to Score and Interpret the AUDIT

The World Health Organization's Alcohol Use Disorders Identification Test (AUDIT) is a very reliable and simple screening tool which is sensitive to early detection of risky and high risk (or hazardous and harmful) drinking. It has three questions on alcohol consumption (1 to 3), three questions on drinking behavior and dependence (4 to 6) and four questions on the consequences or problems related to drinking (7 to 10).

The Supplementary Questions do not belong to the AUDIT and are not scored. They provide useful clinical information associated with the client's perception of whether they have an alcohol problem and their confidence that change is possible in the short-term. They act as an indication of the degree of intervention required and provide a link to counselling or brief intervention following feedback of the AUDIT score to the client.

Scoring the AUDIT
• The columns in the AUDIT are scored from left to right.
• Questions 1 to 8 are scored on a five-point scale from 0, 1, 2, 3, and 4.
• Questions 9 & 10 are scored on a three -point scale from 0, 2 and 4.
• Record the score for each question in the "score" column on the right, including a zero for questions 2 to 8 if 'skipped'.
• Record a total score in the "TOTAL" box at the bottom of the column. The maximum score is 40.

Consumption score
Add up questions 1 to 3 and place this sub-score in the adjacent single box in the far-right column (maximum score possible = 12). A score of 6 or 7 may indicate a risk of alcohol-related harm, even if this is also the total score for the AUDIT (e.g. consumption could be over the recommended weekly intake of 28 for men and 14 for females in the absence of scoring on any other questions). Drinking may also take place in dangerous situations (e.g. driving, fishing/boating). Scores of 6 to 7 may also indicate potential harm for those groups more susceptible to the effects of alcohol, such as young people, women, the elderly, people with mental health problems and people on medication. Further inquiry may reveal the necessity for harm reduction advice.

Dependence score
Add up questions 4 to 6 and place this sub-score in the adjacent single box in the far-right column (maximum score possible = 12). In addition to the total AUDIT score, a secondary 'dependence' score of 4 or more as a subtotal of questions 4 to 6, suggests the possibility of alcohol dependence (and therefore the need for more intensive intervention if further assessment confirms dependence). Alcohol-related problems score Any scoring on questions 7 to 10 warrants further investigation to determine whether the problem is of current concern and requires intervention.

APPENDIX D - Excerpt of the biennial review of the university of Southern Mississippi's alcohol and other drug programs 2016-18 about the biennial report overview

The Drug-Free Schools and Campuses Regulations of the Drug Free Schools and Communities Act (34 CFR Part 86) requires all institutions of higher education to provide evidence that the institutions have developed policies, programs and sanctions related to the use of alcohol and other drugs. At the minimum, an institution of higher education (IHE) is required to distribute the following in writing to all its students and employees:

• Conduct standards clearly prohibiting the unlawful possession, use or distribution of illicit drugs and alcohol by students and employees;
• Detailed descriptions of the sanctions imposed pursuant to local, state and/or federal law for unlawfully possessing or distributing illicit drugs and alcohol;
• Description of drug or alcohol counseling, treatment or rehabilitation or re-entry programs available to employees or students; and
• A clear statement indicating that sanctions will be imposed by the institution on any students and employees, along with a description of those sanctions, up to and including expulsion or termination of employment and referral for prosecution for violations of the conduct standards.

CONSEQUENCES
If an institution of higher education fails to submit necessary certification when requested to do so or violates its certification, the Secretary of Education may terminate all forms of financial assistance.

OBJECTIVES OF THE REVIEW
The law requires that the institution conduct a biennial review of its programs with the following objectives:

• Determine the effectiveness of and implement any needed changes to the alcohol and drug prevention program
• Ensure that the sanctions developed are enforced consistently

71

PURPOSE

The University of Southern Mississippi (USM) is committed to maintaining an

alcohol- and drug-free community that provides students, faculty and staff a safe

environment which supports academic excellence. The use of alcohol and other illegal

drugs can lead to high-risk behaviors that impact not only the individual, but also the

community as a whole. The purpose of this document is to provide a review and

summation of programs and activities related to alcohol and drug prevention on the

campuses of The University of Southern Mississippi from 2016-18 and to comply with its

acknowledged legal obligation to conduct a biennial review to determine if the institution

is fulfilling the requirements of the previously referenced federal regulations.

INFORMATION REVIEWED

The following information was examined for the 2016-18 biennial review:
- Prevention initiatives that were offered during the review period
- Alcohol and drug incidents reported in Maxient, the public safety incident
reporting software for colleges and universities, and to the University Police Department
(UPD)
- University policies related to drug and alcohol use on campus and the sanctions
imposed for failure to comply
- Survey data on future recommendations from various campus stakeholders

STATEMENT OF ALCOHOL AND OTHER DRUG PROGRAM GOALS

The University of Southern Mississippi values engagement that fosters personal

growth, professional development, and a lifelong commitment to wellness. At Southern

Miss, many directives and programs are in place to foster healthy lifestyle choices,

including those focused on alcohol and drugs. Goals related to alcohol and other drug

(AOD) programming include the following:

- Educating the campus community on alcohol and drugs and university policies
- Reducing problematic behaviors through
    - the consistent enforcement of policies regarding underage drinking
      and illicit drug use,

72

    o encouraging harm reduction behaviors in those at risk, and

    o identifying and assisting those at risk through referral services

 • Creating environments that include alcohol-free events and options

 • Adopting policies that reflect national recommendations

 • Supporting students in recovery from substance misuse

GOAL ONE: EDUCATING THE CAMPUS COMMUNITY

Annual Notification

The annual notification is a requirement mandating that the institution provide

specific information regarding alcohol and drugs to each employee and student in writing

each year. The annual notification must include the following:

 • Standards of conduct

 • Disciplinary sanctions for violations of the standards of conduct

 • Possible legal sanctions and penalties

 • Statements of the health risks associated with alcohol and drug misuse

 • Programs available to students and employees

The annual notification is sent via the USM Mailout every fall, spring and

summer semester. The USM Mailout is distributed by email to all faculty and staff on

Wednesdays, to all students on Thursdays, and to the entire campus community on

Fridays. The annual notification is available in Appendix A.

Athletics

Southern Miss Athletics strives to promote and protect the safety, health and well-

being of each and every student-athlete. At the beginning of each academic year during

each sports' team meeting, athletic trainers educate student-athletes on impermissible

drug use in compliance with the National Collegiate Athletic Association (NCAA) and

departmental policies and regulations. Throughout the year, sports medicine will provide

supplemental educational information, as needed, relative to the types of problems

associated with alcohol and drug use.

During the 2016-17 academic year, several student-athletes, coaches and Athletics staff participated in a five-hour Green Dot Bystander Intervention Training. The program provided training to students regarding the ways to intervene to prevent sexual assault, especially when alcohol is involved. During the 2017-18 academic year, student-athletes participated in several AOD programming efforts. On January 30, 2018, Athletics partnered with Pine Grove to sponsor "Rebound with Chris Herren," a former collegiate and NBA player who shared his story of addiction to drugs and alcohol, as well as the impact of those struggles on his career, his family and himself. The event was open to the campus and Hattiesburg community, and 247 student-athletes were in attendance. In the week leading up to Spring Break, eight student athletes partnered with the Office of Health Promotion to participate in "Don't Be Stupid Week." This educational event was held in the Union for all students and provided information on alcohol and drugs as it related to their use and abuse during Spring Break. On April 17-19, 2018, 15 student-athletes participated in Alcohol Awareness Week. Offered to all students, this interactive event was sponsored by the Office of Health Promotion and the Psychology department, who provided information and simulations illustrating the effects of drugs and binge drinking. In anticipation of the event, student athletes promoted the event and handed out information.

Greek Life

The Office of Greek Life works through USM-specific social event management programming and in support of each organization's national mandates for education on risk management, social event management, and social health-related issues. This

encompasses, but is not limited to, alcohol-related risk, risk surrounding illicit drugs, sexual health and others.

Gulf Park

A "Drunk Busters" event allowed members of the campus community to wear goggles that simulated a .08% blood alcohol content (BAC) while performing simple tasks, such as picking things up from the floor and walking in straight lines to illustrate the debilitating effects of alcohol.

Housing and Residence Life

The mission of Housing and Residence Life is to provide a high quality physical, social and cultural environment that encourages and supports the holistic development of the residential student. The resident assistant (RA) programming model includes a health and wellness component that requires RAs to host AOD awareness programs. In 2016-17, there were 29 programs with 422 students in attendance. In 2017-18, there were 37 programs with 582 students in attendance. Specific programs are available in Appendix B.

Office of Health Promotion at Moffitt Health Center

The Office of Health Promotion sponsors a group known as the Wellness Ambassadors, which is compiled of health educators, graduate assistants and peer health educators. The Wellness Ambassadors provide programs and resources to help encourage the campus community to make healthy lifestyle choices. During the 2016-18 academic years, the Wellness Ambassadors successfully conducted outreach aimed at increasing awareness of the risks of using alcohol and drugs. Outreach efforts included tabling to promote harm reduction, programs in residence halls, and National Alcohol Screening Day. Harm reduction activities included using drunk goggles to simulate various BACs

and a pour station to help students better understand standard drink sizes. In 2016-17, 27 hours of outreach were conducted specific to AOD, and in 2017-18, 31 hours of outreach were conducted specific to AOD.

Orientation and Transition Programs
The Office of Orientation and Transition Programs is dedicated to facilitating students' holistic development through academic support, illuminating strengths and building community. At new student Orientations, students and families were exposed to educational sessions and tabling that provided educational information about health-related resources on campus. All incoming freshmen attending Orientations over the summer on the Hattiesburg campus also participated in a program called "Belonging at Southern Miss." The program is a reader's theater, which is a spoken word performance that covers a variety of topics new students will face, including high-risk drinking, stress and sexual assault. Students then participated in a small-group discussion about how to navigate those types of situations while in college. Finally, at Golden Eagle Welcome Week, new students were again exposed to departments and student organizations, which provide educational information about health-related resources on campus.

Physical Plant
In January 2018, the Office of Health Promotion held a 30-minute educational session for all employees of the Physical Plant relative to alcohol and drugs. Approximately 85 staff members attended across the three sessions.

Student Empower Plus
Student Empower Plus was an interactive online course mandatory for all students to help them understand the dangers and consequences of alcohol abuse and drugs, the signs of a problem, and how to get help. Underage students learned essential skills, like

alternatives to drinking. For students 21 or older, the course provided education on how

to drink responsibly. The course emphasized personal responsibility while encouraging

students to help friends make good decisions regarding drinking. In 2016-17, 5,222

students were assigned the course, and 3,169 (60.7%) completed the program. In 2017-

18, 5,195 students were assigned the course, and 1,635 (31.5%) completed the program.

University Police Department

UPD facilitates educational programs, activities and crime prevention events

focused on alcohol and drug awareness, personal and property safety, sexual assault

prevention, fire safety and other requested topics throughout the campuses and residence

halls during the academic year. "Drugs, Alcohol and the Law" is a program meant to

address how various state laws apply to the campus community. As part of the course,

officers also discuss the dangers of certain types of drugs, and visual aids are used during

this program to educate students on how to identify certain drugs based on their

appearance. In 2016-17, more than 360 individuals attended various programs sponsored

by UPD; a detailed list of these programs is available in Appendix B.

GOAL TWO: REDUCING PROBLEMATIC BEHAVIORS

Alcohol and Drug Policies

Alcohol and Drug Policy. The purpose of the alcohol and drug policy is to advise

all employees, students and visitors of The University of Southern Mississippi that they

are prohibited from manufacturing, selling, possessing, distributing or using illegal drugs

or controlled substances in the workplace (i.e. by students or employees of the

University), in classrooms, on University premises, at official University functions, while

conducting University of Southern Mississippi business, in University vehicles, or

relative to any activity sponsored by the University. Moreover, neither employees nor students are permitted to use alcohol or illegal substances or abuse legal substances, including those not prescribed to the person using said drugs, if doing so results in impairment of their work performance, scholarly activities or student life, as well as their conduct. The full policy is available in Appendix C and includes information regarding violations, controlled substance and alcohol testing, and amnesty.

Athletics. The University of Southern Mississippi's Department of Intercollegiate Athletics has developed and implemented a Drug Testing and Intervention Program, referred to as "The Program," for its student-athletes to promote their physical and mental well-being. "The Program" is designed to develop and maintain an environment that encourages student-athletes to avoid the use of unauthorized controlled substances, performance-enhancing drugs, alcohol, tobacco and unapproved dietary supplements. Because of the serious nature of substance misuse, "The Program" also includes significant sanctions and penalties that serve as a deterrent to drug use. The University of Southern Mississippi works in conjunction with the NCAA in its Drug Testing Programs, both on-campus and during its post-season championship events. While the NCAA's Drug Testing Programs and The University of Southern Mississippi's Program are separate and distinct programs, all Southern Miss student-athletes are subject to the rules and regulations of both. Finally, student-athletes are referred for mandatory assessment by the University's Student Counseling Services, if deemed necessary by the Drug Testing Committee. An action plan is created for each student-athlete based on recommendations from the Student Counseling Services and Sports Medicine. The full description of "The Program" is available in Appendix D.

The Code of Student Conduct (CSC). The CSC has been established to foster

and protect the core missions of The University of Southern Mississippi, to foster the

scholarly and civic development of the University's students in a safe and secure learning

environment, and to protect the people, properties and processes that support the

University and its missions. The CSC applies to the on-campus conduct of all students

and registered student organizations, including conduct using University computing or

network resources. The CSC also applies to the off-campus conduct of students and

registered student organizations. The CSC explicitly prohibits conduct relating to alcohol

and drugs and assigns responsibility for investigating violations to UPD and/or other

appropriate law enforcement agencies, as well as the dean of students and/or other

designated University personnel. Sanctions are applied commensurate with the violation

and take into account any mitigating circumstances and any aggravating factors.

Sanctions may include any of the following: informal admonition, formal reprimand,

probation, restitution, campus or community service, educational restorative justice,

suspension and expulsion. Relevant sections of the CSC are available in Appendix E.

Reporting an Incident

All students, faculty and staff are encouraged to report incidents of alcohol and

drug misuse. If uncertain if The University of Southern Mississippi is aware of a potential

incident regarding a violation of laws of the State of Mississippi and/or The University of

Southern Mississippi policy, please contact one of the following nonemergency numbers:

Hattiesburg Campus Dean of Students Office: 601.266.6028 Human Resources:

601.266.4050 University Police Department: 601.266.4986

Gulf Park Campus Human Resources: 228.865.4581 Student Affairs: 228.214.3341 University Police Department: 601.266.4986 When calling, please provide as much information as possible about the person being reported, location, time and date. Incidents may also be reported using the Campus Action Referral and Evaluation System (CARES), which is a team of campus professionals that will respond to reports of concern regarding academic progress and wellbeing of students. To report an incident, an online report can be completed at usm.edu/cares.

Incidents

Brief Alcohol Screening and Intervention for College Students (BASICS) In the spring semester of 2018, Moffitt Health Center partnered with the Psychology department to bring BASICS to Student Health Services. BASICS is an empirically supported prevention and intervention program focused on high-risk students with slight, yet detectable, evidence of an alcohol problem with the goal of reducing hazardous drinking through harm reduction. In the spring semester, 12 students completed the program.

Maxient. To address student conduct issues, Housing and Residence Life, the Dean of Students Office and the CARES team uses Maxient. Within Maxient, charges and sanctions related to alcohol and drugs are tabulated for each academic year. Details are listed in the tables below. Formal reprimands included warnings and educational restorative justice, including classes, the Judicial Educator (online training modules), programs and papers. Referrals were to on-campus resources, such as Student Counseling Services. Probation included restrictions, suspensions and housing and/or disciplinary probation. Restitution consisted of community service.

University Police Department Citations. The number of alcohol and drug citations that were violations of state laws issued by University Police Department between August 1, 2016, through July 31, 2017, and August 1, 2017, through July 31, 2018, are shown in Table 3.

GOAL THREE: CREATING ENVIRONMENTS

The Department of Housing and Residence Life offers several programs that provide alcohol-free alternatives and are listed in Appendix B. The Southern Miss Activities Council (SMAC) is a student-run, student-funded organization that focuses on offering a variety of educational and entertaining programs to complement the Southern Miss academic experience, while bringing programs to educate and enlighten the student body. Events offered include concerts, movies, speakers, novelty acts and many more events open to all students free of charge. The Collegiate Recovery Community (CRC) hosted several sober tailgates each fall and provided an alcohol- and drug-free environment for students to come together and enjoy football.

GOAL FOUR: ADOPTING POLICIES

The University's Alcohol and Drug Policy was revised in 2017 to include an amnesty policy. The policy states that in the event of alcohol intoxication, alcohol-related injury or drug overdose, medical attention should be sought, and neither the impaired student nor the student providing assistance will face disciplinary action for the possession, use or provision of alcohol or the possession or use of other drugs. In order to be granted amnesty, the student must complete a mandatory follow-up coordinated by the Office of the Dean of Students. Amnesty will not be granted if a student is belligerent toward emergency responders.

GOAL FIVE: SUPPORTING STUDENTS IN RECOVERY

The Collegiate Recovery Community (CRC) is a program for students recovering from addictive disorders, including alcohol, drugs and eating disorders. The program is designed to assist these students with any struggles they may have in maintaining sobriety while being successful college students. The CRC has a dedicated space for students in recovery to meet to hold meetings and social gatherings. The "Blue House" also hosts several Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) meetings during the week, which are open to both the Hattiesburg campus and community. The CRC maintained an average of eight members each semester during the review period.

CONCLUSIONS

Strengths

Strengths that were identified by various campus entities included the following:

• Increasing levels of collaboration between departments/entities aimed at intentionally addressing AOD through various programming efforts
• Using an empirically supported intervention program (BASICS) to address high-risk drinking behaviors in college students
• Adding an amnesty policy to place an emphasis on the well-being and safety of students by granting limited immunity to those needing medical attention for potentially life-threatening emergencies
• Having Athletics provide a wide range of educational topics via life skills and student development programs, which provide information that will not only be preventative, but also proactive in asking students to be responsible regarding the use of alcohol
• Athletics partnering with other campus and community organizations to adequately present this topic to student-athletes

Weaknesses

Weaknesses that were identified by various campus entities included the following:

• Insufficient expert presenters available to provide up-to-date information in an entertaining way capable of connecting with students

• A need for ongoing efforts, including a closer partnership with the University Police Department to capitalize on their successful AOD programs, which former participants reported to be approachable, fun and helpful

• Diminished completion rates of the Student Empower course, which contained alcohol and drug education content, due to completion not being mandatory

Recommendations

The following recommendations are made:

• Continue to explore means of increasing levels of collaboration • Gather additional data to evaluate efforts

• Expand the BASICS program to include brief intervention for students using marijuana

• Identify a means of improving completion rates of online training modules, such as Student Empower • Apply for a NCAA Choices grant as a means of integrating athletics into campus-wide efforts to reduce alcohol abuse over a three-year period

The full USM biennial report for 2016-18 can be found at

https://www.usm.edu/student-affairs/biennial-review-southern-miss-alcohol-and-other-

drug-programs.php

REFERENCES

Abel, W. D., Weaver, S., Roomes, T. R., Agu, C. F., Smith, P. W., Oshi, D. C., Harrison, J., Smith, K., Mitchell, G., Belinfante, A., Rae, T., & Oshi, S. N. (2018). Risk Factors Associated with Frequent Alcohol Binge Drinking Among Jamaicans: Does Gender Matter? Asian Pacific *Journal of Cancer Prevention*, 19, 39-44. doi: 10.22034/APJCP.2018.19.S1.39

Agabio, R., Giuseppina, T., Floris, F., Mura, G., Sancassiani, F., & Angermeyer, N. C. (2015). A Systematic Review of School-Based Alcohol and Other Drug Prevention Programs, *Clinical Practice & Epidemiology in Mental Health*, 11, 102-112.

Babor, T. F., de la Fuente, J. R., Saunders, J., & Grant, M. (1992). AUDIT the Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Health Care, Programme on Substance Abuse – World Health Organization.

Boyle, S. C., LaBrie, J. W., Froidevaux, N. M., & Witkovic, Y. D. (2016). Different Digital Paths to the Keg? How Exposure to Peers' Alcohol-related Social Media Content Influences Drinking Among Male and Female First-year College Students, *Addict Behavior*, 57, 21-29. Doi: 10.1016/j.addbeh.2016.01.011

Carey, K. B., Scott-Sheldon, L. A., Garey, L., Elliot, J. C., & Carey, M. P. (2016). Alcohol interventions for mandated college students: A meta-analytic review, *Journal of Consulting and Clinical Psychology*, 84, 619-632. doi: 10.1037/a0040275

Chib, A. & Sapphire, H. L. (2018). Theoretical Advancements in mHealth: A Systematic Review of Mobile Apps, *Journal of Health Communication*, 00, 1-47.

doi: 10.1080/10810730.2018.1544676

Garcia, T. A., Litt, D. M., Davis, K. C., Norris, J., Kaysen, D., & Lewis, M. A. (2019).

Sexual Behavior And Its Association With Alcohol Use and Related

Consequences Among Adolescents and Young Adults in the United States,

Frontiers in Psychology, 10, 1-16. doi: 10.3389/fpsyg.2019.01872

Haas, A. L., Wickham, R. E., Zamboanga, B. L., Read, J. P., & Borsari, B. (2018).

Heterogeneity of Pregamers by Consumption and Reinforcement Reasons: A

Latent Profile Analysis, Alcoholism: Clinical and Experimental Research, 7,

1217-1277. doi: 10.1111/acer.13773

Heflin, H., Shewmaker, J., & Nguyen, J. (2017). Impact of Mobile Technology on

Student Attitudes, Engagement, and Learning, *Computers & Education*, 107, 91-

99. doi: 10.1016/j.compedu,2017.01.006

Helbostad, J. L., Vereijken, B., Becker, C., Todd, C., Taraldsen, Pijnappels, M., Aminian,

K., & Mellone, S. (2017). Mobile Health Applications to Promote Active and

Healthy Ageing, *Sensors*, 17, 1-13. doi 10.3390/s17030622

Hildebrand, M. & Noteborn, G. C. (2015). Exploration of the (Interrater) Reliability and

Latent Factor Structure of the Alcohol Use Disorders Identification Test (AUDIT)

and the Drug Use Disorders Identification Test (DUDIT) in a Sample of Dutch

Probationers, *Substance Use and Misuse*, 50, 1294-1306. Doi 10.3109/10826084.

2014.998238

Jang, J. B., Patrick, M. E., Keyes, K. M., Hamilton, A. D., & Schulenberg, J. E. (2015).

Frequent Binge Drinking Among US Adolescents, 1991 to 2015, *Pediatrics*, 139,

1-9. doi: 10.1542/peds.2016-4023

Kazemi, D. M., Borsari, B., Levine, M. J., Li, S., Lamberson, K. A., & Matta, L. A. (2017). A Systematic Review of the mHealth Interventions to Prevent Alcohol and Substance Abuse, *Journal of Health Communication*, 22, 413-432. doi: 10.1080/10810730.2017.1303556

Krieger, H., Young, C. M., Anthenien, A. M., & Neighbors, C. (2017). The Epidemiology of Binge Drinking Among College-Age Individuals in the United States, *Alcohol Research: Current Reviews*, 39, 23-30.

Kuitunen-Paul, S. & Roerecke, M. (2018). Alcohol use disorders identification test (AUDIT) and mortality risk: a systematic review and meta-analysis, *Journal of Epidemial Community Health*, 72, 856-863. doi: 10.1136/jech-2017-210078

Lee, C. M., Cronce, J. M., Baldwin, S. A., Fairlie, A. M., Atkins, D. C., Patrick, M. E., Zimmerman, L., Larimer, M. E., Leigh, B. C. (2018). Psychometric Analysis and Validity of the Daily Alcohol-related Consequences and Evaluations Measure for Young Adults, *Psychological Assessment*, 29, 253-263. doi: 10.1037/pas0000320

Lo, C. & Globetti, G. (1995). The Facilitating and Enhancing Roles Greek Associations play in college drinking, *International Journal of Addictions*, 30, 1311-1322.

Meijer, H. A. W. & Schijven, M. P. (2017). Systematic Review on the Effects of Serious Games and Wearable Technology Used in Rehabilitation of Patients with Traumatic Bone and Soft Tissue Injuries, *Archives of Physical Medicine and Rehabilitation*, November.

Miller, L. B., Brennan-Cook, J., Turner, B., Husband-Ardoin, M., & Hayes, C. S. (2018). Utilizing an Evidence-Based Alcohol Screening Tool for Identification of Alcohol

Misuse, *Journal of Addictions Nursing*, 29, 9.-95. doi 10.1097/JAN.000000000 0000217

Newton, N. C., Conrod, P. J., Slade, T., Carragher, N., Champion, K. E., Barrett, E. L., Kelly, E. V., Nair, N. K., Stapinski, L. & Teesson, M. (2016). The Long-term Effectiveness of a Selective, Personality-targeted prevention Program in Reducing Alcohol Use and Related Harms: A Cluster Randomized Controlled Trial, *Journal of Child Psychology and Psychiatry*, 57, 1056-1065. doi: 10.1111/jcpp.12558

Patrick, M. E. & Azar, B. (2017). High-Intensity Drinking, *Alcohol Research: Current Reviews*, 39, 49-55.

Rodriguez, L. M., Neighbors, C., Rinker, D. V., Lewis, M. A., Lazorwitz, B., Gonzales, R. G., & Larimer, M. E. (2015). Remote vs. In-lab Computer-delivered Personalized Normative Feedback Interventions for College Student Drinking, *Journal of Consulting and Clinical Psychology*, 83, 455-463. doi: 10.1037/ a0039030

Rundle-Thiele, S., Schuster, L., Dietrich, T., Russell-Bennett, R., Drennan, J., Leo, C., & Connor, J. P. (2015). Maintaining or Changing a Drinking Behavior? GOKA's Short-term Outcomes, *Journal of Business Research*, 68, 2155-2163.

Saunders, J.B. & Aasland, O. G. (1987). WHO Collaborative Project on the Identification and Treatment of Persons with Harmful Alcohol Consumption; Report on Phase I the Development of a Screening Instrument, Prepared for the Division of Mental Health, World Health Organization, Geneva on behalf of the WHO Collaborative Team of Investigators.

The University of Southern Mississippi, 2018. Biennial Review of the University of

Southern Mississippi's Alcohol and Other Drug Programs 2016-2018. Retrieved

from https://www.usm.edu/sites/default/files/groups/division-student-

affairs/pdf/16-18_biennial _report_final.pdf

Tyler, K. A., Schmitz, R. M., & Adams, S. A. (2015). Alcohol Expectancy, Drinking

Behavior, and Sexual Victimization Among Female and Male College Students,

Sociology Department, Faculty Publications, 262, 1-25.

Tyler, K.A., Schmitz, R. M., Adams, S.A., & Simons, L. G. (2017), Social Factors,

Alcohol Expectancy, and Drinking Behavior: A Comparison of Two College

Campuses, *Journal of Substance Use*, 22, 357-364. doi: 10.1080/14659891.

1223762