A Dissertation entitled

Presidents' Perceptions of Alcohol Policies for College Sporting Events

by

Thomas S. Castor

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the

Doctor of Philosophy Degree in Health Education

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An Abstract of

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A particularly high-risk time on campus is the alcohol consumption associated with collegiate sporting events, specifically tailgating. The purpose of this dissertation was twofold; first, to identify and critically examine the literature on alcohol use at college sporting events, specifically football games; second, to assess college presidents' perceptions of alcohol policies regulating alcohol consumption during tailgating using the Health Belief Model.

The literature review was accomplished by using multiple search engines, including Academic Search Complete, PubMed, CINAHL, ERIC, Health Source, Sociological Collection, SocINDEX, APA PsycINFO, MEDLINE, and Google Scholar to examine articles published on alcohol use among college students at collegiate sporting events, or football game-day. To be included in the literature review, articles must have been published in the United States within the year 2000 to 2019.

A cross-sectional research design was used for the second study, which comprised of a 20-item survey questionnaire assessing college president's perceptions of alcohol use during college sporting events. The survey instrument included items assessing the *Stages of Change* from the Transtheoretical Model, as well as the perceived benefits, barrier,

severity, and susceptibility constructs from the Health Belief Model. A population census was conducted utilizing the 2019 NCAA Division-I Football Bowl Subdivision listing (N=130).

The critical literature review search yielded 25, scientific, peer-reviewed articles involving alcohol use associated with college football games. In many of the studies, researchers used cross-sectional study designs (72%), obtained convenience samples (32%), and did not include reliability and/or validity measures (48%). Data were collected either online (36%), with a paper and pencil questionnaire (32%), hybrid (in-person and online) (12%), or case-study (12%). Three topics emerged from the literature, including alcohol related epidemiological trends (drinking behavior on game-day, negative consequences, and gender), social norm perceptions, and alcohol policies.

In the second study, university presidents and chancellors from 130 Division I Football Subdivision (FBS) schools were selected to participate in a study assessing perceptions regarding safety issues pertaining to college sporting events. Respondents from 59 universities completed the survey, yielding a modest response rate of 49.6%. Collectively, respondents were categorized into senior-level administrators (presidents, chancellors, provosts), mid-level administrators (deans, department chairs, department directors), and specialists (substance abuse coordinators). Nearly two-thirds (62.7%; n=37) of the participants surveyed indicated their institution sold alcohol in the stadium, 12.5% (n=7) banned alcohol use during college sporting events, and the remaining schools allowed alcohol use with restrictions. Regarding tailgating, the majority (68.4%) of respondents indicated their institution had a policy regulating alcohol consumption. Multiple regression analyses were used to assess which constructs of the HBM were most

predictive of presidential support for alcohol policies on game-day. The perceived benefits was the only construct yielding statistically significant results for both presidential support for restrictive alcohol polices as well as opposition for the sale of alcohol within the stadium. Notably, the enforcement of alcohol regulations during college football games varied across the spectrum (rarely, sometimes, often, always).

Overall, event specific research, particularly studies addressing the alcohol use associated with college sporting events constitutes an emerging area of study. Results from the literature review demonstrate that college football games signify a time whereby fans consume alcohol at higher rates than they do during other social occasions. The scientific rigor employed by the researchers varied from study to study and several gaps in the literature were identified. In particular, a current national study identifying drinking patterns and alcohol related policies would allow universities to compare their institution to others and benchmark prevalence rates. Additionally, rigorous studies utilizing randomized control trials, thorough evaluation of interventions, especially related to policy implementation, and information from senior-level administrators about how to address game-day safety issues are lacking from the literature.

Findings from the second study indicated that universities were at various stages in terms of their readiness to address the alcohol consumption associated with tailgating. Multivariate analysis revealed the perceived benefits construct from the HBM was associated with support for implementing restrictive alcohol polices. Thus, emphasizing the benefits of policy implementation should be used to generate policy change for college sporting events. While the opinions of university presidents and other senior administrators are essential, additional information could be obtained by assessing

athletic directors and prevention specialists. Qualitative data may also provide information on why key stakeholders feel the way they do about various game-day prevention related policies. Ultimately the results from both studies can be used to create a safer game-day environment and reduce the liability universities may incur for the alcohol consumption that frequently occurs during college sporting events.

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List of Abbreviations

AOD.....Alcohol and Other Drugs
ATOD .....Alcohol, Tobacco, & Other Drugs

BAC.....Blood Alcohol Content
BrAC.....Blood Breath Alcohol Content

CDC.....The Center for Disease Control and Prevention

df.....Degrees of Freedom

GPA .....Grade Point Average

IRB.....Internal Review Board

N/A .....Not Applicable
NCAA .....National College Athletic Association
NCHA .....National College Health Assessment
NIAAA.....National Institute of Alcohol Abuse and Alcoholism
NIDA .....National Institute of Drug Abuse
NIH .....National Institute of Health

SAMHSA.....Substance Abuse and Mental Health Service Administration
SD.....Standard Deviation

US.....United States

List of Symbols

α.....Alpha
β.....Beta
X^2.....Chi-Square
R^2.....Coefficient of determination
©.....Copyright
=.....Equals
>.....Greater than
<.....Less than
P.....p-value
®.....Registered Trademark
N.....Sample size

Chapter One

Introduction

This chapter presents the study topic, research purpose, and a synopsis of the issues regarding the alcohol consumption practices and policies associated with college sporting events, specifically football. Sections within this chapter include the following: prevalence and consequences of alcohol use among college students, event-specific alcohol consumption, the prevalence of alcohol use and related consequences specific to college sporting events, and game-day related alcohol policies. Additionally, the significance of the problem, the purpose of the research, the definition of terms, research questions, limitations, and delimitations are discussed.

Prevalence of Alcohol Use on College Campuses

The breadth and depth of alcohol use among the college population remain a concern for university officials across the country. Hingson (2017) reports that approximately 35 percent of college students engage in binge drinking. However, research indicates the prevalence of alcohol use among college students varies from campus to campus as well as by demographics (Fuertes and Hoffman, 2016; Wechsler, Lee, Kuo, Seibring, Nelson, & Lee, 2002). The prevalence of underage consumption is relatively high among college students, as one study indicated that approximately 70% of college students regularly engage in underage drinking, with the highest demographic consisting of freshmen (Fuertes & Hoffman, 2016). Moreover, college students drink alcohol at rates much higher than their non-college attending peers of the same age (Byrd, 2016).

Binge Drinking/Heavy Episodic Drinking

Binge drinking (BD), also referred to as heavy episodic drinking (HED) or high-risk drinking (HRD), is defined by the National Institute on Alcohol Abuse and Alcoholism (n.d.) as a pattern of drinking that results in blood alcohol concentration (BAC) levels of 0.08 g/mL or higher. Typically, a BAC of 0.08 g/mL occurs after consuming four drinks for women and five drinks for men—in about two hours. Results from the *American College Health Association National College Health Assessment II* (2017) reveal that approximately two-fifths (38.3%) of college students consumed five or more drinks the last time they partied. One study identified the prevalence rates of binge drinking (BD) varying from 17.9% among college women to 35.6% of college men (Moure-Rodriguez, Carbia, Lopez-Caneda, Corral Varela, Cadaveira, & Caamaño-Isorna, 2018). Notably, the drinking rates among college students have decreased slightly over the past decade (Hinson, 2017).

Consequences of alcohol use among college students

The consequences related to consuming alcohol are well documented. In general, alcohol negatively affects one's health as well as their academic performance (Nelson & Wechsler, 2003). Fuertes and Hoffman (2016) reported that many college students experience alcohol issues across at least one of the following three areas: problematic drinking (14%), alcohol abuse (23%), and alcohol dependence (29%). The adverse health consequences associated with heavy episodic drinking also include motor vehicle crashes, falls, drownings, sexually transmitted diseases, unintended pregnancy, sexual assault, violence, and poor academic performance (Champion et al., 2009; House et al., 2014).

Event Specific Alcohol Consumption

Of particular concern is the alcohol consumption associated with special events. Event-specific alcohol consumption denotes a time where students and others engage in high-risk drinking behaviors to celebrate a holiday or momentous occasion. Research indicates that alcohol is more heavily consumed on special occasions, such as 21st birthdays, Thanksgiving, Halloween, and Spring Break, New Year's Eve, sporting events, etc. (Miller, & Gillentine, 2006; Neighbors, Oster-Aaland, Bergstrom, & Lewis, 2006; Oster-Aaland, & Neighbors, 2007). This behavior, which is also referred to as celebratory drinking, can vary across colleges and universities depending on specific rituals and traditions. Researchers have found that college students drink more alcohol during celebratory events and are more likely to experience negative health effects (Foster, Bass, & Bruce, 2011; Glassman, Dodd, Sheu, Rienzo, & Wagenaar, 2010; Neal & Fromme, 2007).

Game-day alcohol consumption

A unique example of event-specific drinking includes alcohol consumption that occurs at college sporting events. Recent studies have suggested that collegiate American football games represent a significant risk for heavy episodic drinking (Glassman, Werch, Jobi, & Bian, 2007; Neal & Fromme, 2007; Nelson & Wechsler, 2003). Research indicates fans, specifically college students, consume alcohol at higher rates during college sporting events (e.g., football) than they do ordinarily (Glassman, Braun, Reindl, & Whewell, 2011; Neal, Sugarman, Hustad, Caska & Carey, 2005; Woodyard & Hallam, 2010). Moreover, Merlo, Hone, and Cottler (2010) conducted a study across two universities in the US where they found that 48.5% of individuals at one university and

58.8% of individuals at a second university engaged in heavy episodic drinking during pre-game festivities. In a study assessing fans' blood alcohol concentration, approximately 90% of individuals tailgating at a collegiate football game consumed alcohol, and approximately 20% of these individuals had a blood alcohol concentration above the legal driving limit of 0.08 g/L before the game began (Glassman et al., 2011). In the same study, alcohol consumption remained relatively constant across gender as 58.1% of men, and 46% of women indicated typically drinking on game-day(s). In a related study, most sports fans reported drinking for two and a half hours on game-day, with approximately one in five people drinking for more than five hours. Notwithstanding, alcohol consumption among fans may fluctuate based on the following variables: school, time, weather, opponent, homecoming, bowl game, etc. (Glassman et al., 2010).

Consequences of game-day drinking

While alcohol has been shown to have detrimental effects on college students, the behavior of inebriated game-day attendees poses a unique public health challenge on college campuses. Researchers have found that negative behaviors related to alcohol consumption among game-day fans may consist of both individual and societal concerns including but not limited to: breaking laws, disorderly conduct, assault, rioting, driving under the influence, and open containers (Lawrenc, Hall, & Lancey, 2012; Glassman et al., 2007; Merlo et al., 2010; Nelson, Lenk, Xuan, & Wechsler, 2010). Furthermore, Haun and colleagues (2007) found that gender differences existed concerning alcohol-related consequences, whereby males drank more alcohol than females on game-day, yet females were more likely to experience adverse outcomes.

Policies Surrounding Alcohol Consumption at College Football Games

A variety of policy decisions need to be made concerning fan safety and the alcohol consumption associated with college sporting events such as: banning the sale of alcohol at the stadium, regulation of alcohol in luxury-box seats (private seating), texting alert systems used to report unruly fan behavior, no re-entry stadium policies, and designated alcohol consumption areas during tailgating. Oster-Aaland and Neighbors (2007) examined the impact of tailgating policy on students' drinking behaviors and found that limiting the use of alcohol to a designated parking lot did not impact drinking rates or related problems, but increased the perceptions of the amount of alcohol consumed by college peers. A comprehensive national study on the alcohol consumption behaviors of fans during college sporting events and an assessment of the related policies is needed to further assess the scope of the problem.

The sale of alcohol within the stadium on college campuses is a controversial issue. In 2015, Malone reported that approximately 34 college football stadiums permitted the sale of alcohol to the general public. While most college stadiums do not permit the sale of alcohol inside the stadium, in part because the majority of traditional college students are under the legal drinking age, the number of college stadiums that allow alcohol is on the rise (Kruzman and Tulp, 2017; Malone, 2015**)**. Indeed, the National College Athletic Association (NCAA) pilot-tested a policy in 2016 that permitted the onsite sale of alcohol in the stadium during certain end of season championship games, since then the alcohol ban has been lifted (NCAA, 2016). As of 2017, the board of governors revised the association-wide alcohol policy at championship

games and permitted each of the divisions the authority to pursue alcohol-related legislation as they see fit (NCAA, 2017).

Despite any previous NCAA regulations, the decision to sell alcohol at the home stadium/arena during collegiate sporting events ultimately is determined by each university. A study by Haung and Dixon (2013) conducted at one university found that the sale of alcohol resulted in an additional $576,001 in net revenue. Additionally, general admission revenue increased by 58%, and the concession revenue increased by 37%. Conversely, banning alcohol sales at the stadium may serve as a protective factor by regulating access to alcohol; thus, drastically reducing, if not eliminating, the consumption of alcohol during the game (Bormann & Stone, 2001; Glassman et al., 2010). For example, one university that banned alcohol sales reported a decrease in stadium ejections, arrests, and assaults (Bormann & Stone, 2001). Nevertheless, to increase ticket sales, a substantial number of universities have decided to sell alcohol in the stadium. Proponents of this policy maintain that it is better to sell alcohol by licensed vendors at the stadium than it is to have fans quickly consume a large number of drinks before the game, sneak alcohol into the stadium and/or leave the game prematurely because alcohol is not available (e.g., not returning to the stadium/arena after halftime).

Significance

In 2007, the U.S. Surgeon General released a *Call to Action* to prevent and reduce underage alcohol consumption among college students. This call to action stated that alcohol abuse among college students is the most significant public health concern on university campuses (United States Department of Health and Human Services, 2007). One particular problem involves alcohol consumption associated with college sporting

events. Research indicates college students and other fans tend to drink more on game-day than they do during other social occasions (Glassman et al., 2007). Indeed, nearly a fifth of college students (16%) engage in *extreme ritualistic alcohol consumption* (≥10 drinks for a male and ≥8 drinks for a female) on game day, which is twice the *binge-drinking* rate (Glassman et al., 2010). Additionally, high-risk drinking, which takes place on game-day, is associated with a variety of negative consequences students experience. These consequences are not limited to those who engage in alcohol consumption; they also result in secondary negative consequences, where non-drinkers become victims of other users' behavior. This phenomenon is referred to as *secondhand effect* (alcohol) and may include any of the following: sleep or study interrupted, having to take care of a drunken friend, being insulted or assaulted, being the victim of unwanted sexual advances, or having personal property vandalized (Champion et al., 2009; Wechsler et al., 2002).

While numerous studies have been conducted examining college students and alcohol use, to date, scant research exists examining the policies associated with alcohol consumption during college sporting events. The individual ultimately responsible for student safety and campus policies is the university president. Thus, the need to assess their perceptions regarding alcohol consumption during college sporting events and the related policies is crucial to enhancing public safety. Moreover, a document published by The Higher Education Center Alcohol and Other Drug Misuse Prevention and Recovery provided recommendations for college presidents to "be vocal, visible, and visionary" in addressing alcohol-related issues on college campuses (Carothers, Coleman, Dawson, Gee, Hines, & Pacheco, 1997). For these reasons, Reindl et al., (2014) surveyed college

presidents' perceptions regarding tobacco-free campuses, identifying them as key stakeholders whose support is instrumental in implementing or changing policies on college campuses.

Purpose

Article 1: The purpose of this study was to summarize the research conducted on alcohol consumption patterns and related policies during college sporting events, particularly football. The topical areas for this literature review include the prevalence of alcohol use during college sporting events, the associated consequences, as well as the related policy issues. Additionally, the scientific rigor of the studies, with a focus on the research methods, was conducted. The goal of this study was to identify the gaps in the literature and topics for future studies.

Article 2. The aim of this scientific inquiry was to examine the perceptions of NCAA Division I university presidents with regard to alcohol policies and enforcement associated with college sporting events. More specifically, Division I college presidents were assessed to determine their support for regulating alcohol use during college sporting events, particularly concerning tailgating. They were asked to assess barriers, benefits, severity, and susceptibility in regards to implementing an alcohol policy(s) regulating alcohol use during tailgating and ascertain what actions might help initiate alcohol policies and enforcement.

Definition of Terms

- Binge Drinking: The consumption of an excessive amount of alcohol in a short period (two hours), which is also referred to as heavy episodic drinking (National Institute on Alcohol Abuse and Alcoholism, 2004).

- Drink (Alcoholic): An alcoholic drink is defined as being 12-ounces of beer (5% alcohol content), 8-ounces of malt liquor (7% alcohol content), 5-ounces of wine (12% alcohol content), or 1.5-ounces, or a shot, of 80-proof (40% alcohol content) distilled spirits or liquor (National Institute of Alcohol Abuse and Alcoholism, n.d.).
- Event Specific Alcohol Consumption: Event-specific alcohol consumption (ESP) refers to the action of consuming alcohol during a special event (DeJong, & Langford, 2002). Furthermore, alcohol-themed events and parties such as New Year's Eve, St Patrick's Day, spring break, Halloween, or collegiate football games have been identified as momentous events (Moreno, Kacvinsky, Pumper, Wachowski, & Whitehill, 2013).
- Game-day: The day on which a sporting event is held, or a sports team plays a game (Dictionary, n.d.).
- Game-day policy: Policies, rules, and regulations surrounding the acceptable behaviors on days on which a sports team plays a game (Dictionary, n.d.).
- Health Belief Model: The Health Belief Model (HBM) posits that individuals will achieve an optimal behavior change if they successfully target perceived barriers, benefits, susceptibility, and severity. The HBM suggests that an individual's belief in a personal threat of an illness or disease in combination with a person's belief in the effectiveness of the recommended health behavior or action will predict the likelihood the person will adopt the behavior (Skinner, Tiro, & Champion, 2015. 5th ed., pp 75-94).
    - Perceived Barriers: A construct of the Health Belief Model (HBM); this refers to a person's feelings on the obstacles to performing the

recommended health action(s). Often a cost/benefit analysis is used by an individual to determine the perceived benefits and barriers, such that a person weighs the effectiveness of the actions against the perceptions that it may be expensive, dangerous, unpleasant, time-consuming, or inconvenient (Skinner, Tiro, & Champion, 2015. 5th ed., pp 75-94).

- Perceived Benefits: A construct of the Health Belief Model (HBM); this refers to a person's perception of the positive effects of various actions available to reduce the threat of illness or disease. Often the positive effects of taking action need to outweigh the perceived barriers, such that the person would accept the recommended health action if recommendations were perceived as beneficial (Skinner, Tiro, & Champion, 2015. 5th ed., pp 75-94).
- Perceived Severity: A construct of the Health Belief Model (HBM); this refers to a person's feelings about the seriousness of contracting an illness or disease. Often social consequences (e.g., family life, social relationships) and medical consequences (e.g., death, disability) are considered when evaluating the severity (Skinner, Tiro, & Champion, 2015. 5th ed., pp 75-94).
- Perceived Susceptibility: A construct of the Health Belief Model (HBM); this refers to a person's subjective perception of the risk of acquiring an illness or disease. Often feelings of personal vulnerability to an illness or disease are considered when evaluating susceptibility (Skinner, Tiro, & Champion, 2015. 5th ed., pp 75-94).

- Heavy Episodic Drinking: Heavy episodic drinking is a modern epithet for drinking alcoholic beverages with the intention of becoming intoxicated by heavy consumption of alcohol over a short period. This is quantified as five or more drinks for men or four or more drinks for women in one sitting (two hours) (NIAAA, 2004).
- High-risk Drinking: A pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 g/dL or higher: This typically occurs when men consume five or more drinks, and when women consume four or more drinks, in about two hours (Centers for Disease Control and Prevention, 2015).
- Tailgating: A social gathering in which food and drinks, which may include alcoholic beverages, are consumed in or near a parking lot before, during, or after a community event (e.g., sporting event or concert) (Merriam-Webster, n.d.).
- Transtheoretical Model (TTM): The original model posits that individuals move through five stages of change: precontemplation, contemplation, preparation, action, and maintenance. For each stage of change, different strategies are effective in moving the person to the next stage of change, ultimately terminating in the maintenance stage, or maintaining the desired behavior (Prochaska, Redding, & Evers, 2015. 5th ed., pp 125-148).
    - Precontemplation Stage: Individuals do not intend to take action in the foreseeable future (next six months). Often, individuals are unaware a problematic behavior exists, produces negative consequences, and underestimate the positive outcomes of making a behavior change (Prochaska, Redding, & Evers, 2015. 5th ed., pp 125-148).

- Contemplation Stage: Individuals realize a problematic behavior exits, and are intending to start the healthy behavior in the foreseeable future (next six months). Often individuals in this stage are considering the pros and cons of changing a behavior (Prochaska, Redding, & Evers, 2015. 5th ed., pp 125-148).
- Preparation Stage: Individuals are ready to take action within the next 30 days, and are taking steps toward engaging in the behavior change (Prochaska, Redding, & Evers, 2015. 5th ed., pp 125-148).
- Action Stage: Individuals are engaging in the desired behavior, or have recently changed their behavior (within the last six months) and intend to keep moving forward with that change. (Prochaska, Redding, & Evers, 2015. 5th ed., pp 125-148).
- Maintenance Stage: Individuals have sustained their behavior change (more than six months) and intend to maintain the behavior change going forward (Prochaska, Redding, & Evers, 2015. 5th ed., pp 125-148).

Research Questions (Article 1):

Research Question 1. What is the prevalence of alcohol use during college sporting events, and the associated health (e.g., sleep, mental health, and sexual health) and academic consequences (e.g., grade point average (GPA), class attendance, and course withdrawal rates)?

Research Question 2. Based on traditional research standards (sample selection and size, response rate, survey method, validity [internal & external] and reliability), what level of scientific rigor did the researchers employ when conducting their studies?

Research Question 3. What gaps in the literature exist concerning alcohol use and related policies associated with college sporting events?

Research Questions: (Article 2)

Research Question 1*:* What actions are Division-I universities taking to address the alcohol use associated with college sporting events?

Research Question 2*:* What Stage of Change, within the Trans-Theoretical Model, do college presidents indicate their university is at in establishing an alcohol policy regulating alcohol use during tailgating at college sporting events?

Research Question 3*:* What are the characteristics of universities regarding policy regulating alcohol use during tailgating at college sporting events?

Hypothesis 3.1 (H_o): There will be no statistically significant difference in tailgating policy regulating alcohol use by having a policy banning tobacco use.

Hypothesis 3.2 (H_o): There will be no statistically significant difference in tailgating policy regulating alcohol use by years serving as a college president.

Hypothesis 3.3 (H_o): There will be no statistically significant difference in tailgating policy regulating alcohol use by alcohol-related fatalities.

Hypothesis 3.4 (H_o): There will be no statistically significant difference in tailgating policy regulating alcohol use by university ticket sales (sell out) status for home football games.

Research Question 4*:* Which constructs of the Health Belief Model best predict presidential support for establishing a tailgating policy regulating alcohol consumption during tailgating at college sporting events?

Hypothesis 4.1 (H_o): The constructs from the HBM (perceived barriers, benefits, threat) will not yield statistically significant results in predicting presidential support for establishing a policy regulating alcohol consumption during tailgating at college sporting events.

Delimitations

Article 1: A specific set of delimitations exists with any study, and a literature review is no exception. For example, while a thorough review of the literature was completed, it is still possible that some articles were overlooked. This was minimized by using multiple search strategies and databases (e.g., web-based search engines and reviewing the reference section of each article to avoid missing any relevant articles). Additionally, this study was delimited to articles published in the year 2000 or more recent. Therefore, articles published prior to 2000 were not included unless deemed as a landmark study. Articles not pertaining to alcohol use during college sporting events were excluded.

Article 2: This study is delimited to the university presidents of full members of the Division I Football Bowl Subdivision. Therefore, the perceptions obtained in the current study cannot be viewed as representative of other college or university officials, including administrative staff, faculty, and board members. Additionally, this study only examined college or university presidents within the United States. As a result, the findings cannot be generalized to institutions of higher education outside

of the United States. This study was also delimited to four-year institutions, thus all schools that did not meet Division I criteria were excluded. Finally, this study pertains only to alcohol control policies; therefore, no conclusions can be made regarding other psychotropic substances.

Limitations

Article 1: This study included several inherent limitations. Despite a systematic search strategy, an article(s) may have been inadvertently overlooked. The inclusion/exclusion criteria may have resulted in omitting important studies. Moreover, focusing on limited search terms, other important areas of research may have been underreported or unassessed. Finally, unpublished work may exist, which was not assessed at the time during which the literature review was conducted.

Article 2: While efforts were made to avoid limitations, some inevitably remain. First, the cross-sectional research design used for this study precludes establishing causality between the variables. Second, self-reported data were collected for this study, which may result in an inaccurate recall, including under or over-reporting. Third, participants may provide socially desirable answers, thus, potentially skewing the results. Finally, participants may not have been able to identify their institution's policy surrounding game-day alcohol policies accurately, as the individual who participated in this study may have been a designee of the president and not the university president themselves. Thus, the participants' knowledge and perceptions may differ from that of the president.

Conclusion

Alcohol consumption, which occurs during college sporting events, particularly tailgating remains a serious public health concern as millions of fans attend these events. The negative outcomes of heavy alcohol use represent a persistent problem at colleges and universities across the United States. As a result of these issues, the need to summarize the literature and conduct new research is apparent. The findings from the literature review will provide an overall synopsis of the studies conducted on the alcohol consumption associated with college sporting events and identify the gaps in the literature. The outcomes will help guide future research and inform practitioners and university officials of key epidemiological trends. To address this unique public health issue, it is imperative to determine the perceptions of university presidents concerning alcohol use associated with college sporting events and the related policies and enforcement. The results from this study will provide administrators in higher education with information to design and implement interventions to address the high-risk drinking associated with college sporting events.

Summary

This chapter contains detailed information about the scope of the problem as it relates to alcohol consumption on collegiate game-day. Background information was presented, including the prevalence of alcohol use during college sporting events and the related consequences on health and academic corollaries. Furthermore, the purpose of this study, definitions of terms, research questions, and corresponding hypotheses, delimitations, and limitations were described.

Chapter Two

Event Specific Alcohol Consumption Associated with College Football: A Critical Review of the Literature, 2000-2019

This chapter provides a comprehensive review of the literature with regard to alcohol consumption associated with collegiate sporting events, particularly football. The scope of the problem is discussed with information highlighting the prevalence of alcohol consumption during college sporting events, game-day as a specific high-risk event, prevention efforts, alcohol-related fan behavior, and the consequences of game-day alcohol use. The methods, which include the inclusion and exclusion criteria for the studies; the results, with tables illustrating the key findings; and a discussion section, underscoring the meaning of the results, are each delineated. This manuscript will be submitted to the *Journal of College Student Development*, a copy of the journal guidelines can be found in Appendix A.

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Abstract

Introduction: The purpose of this literature review was to summarize the research concerning alcohol-related issues associated with college football. **Methods:** Ten databases were used to identify refereed journal articles. **Results:** The search parameters yielded 25 articles, which addressed topics such as epidemiological trends (consumption behaviors, negative consequences, gender differences regarding alcohol use), social norms, and policies. **Conclusion:** Findings provide an overall assessment of the research conducted regarding alcohol-use patterns and policies specific to college sports. Overall, randomized controlled trials, national data sets, evaluation studies, and qualitative research are needed to further advance the knowledge base in this area.

Introduction

Despite a myriad of prevention efforts, excessive alcohol use among college students remains a serious public health issue. Indeed, a significant percentage of college students compromise their health and academics by drinking too much. A particularly high-risk time for college students and others is the alcohol consumption associated with special events such as New Year's Eve, St Patrick's Day, spring break, Halloween, 21st birthdays, and weddings. This emerging area of research is commonly referred to as *event-specific drinking* or *celebratory drinking*; whereby, people drink significantly more than they would ordinarily because of the social occasion (DeJong, & Langford, 2002; Moreno, Kacvinsky, Pumper, Wachowski, & Whitehill, 2013).

A unique example of event-specific drinking includes the alcohol consumption associated with college football games, such as during tailgate parties. Tailgating is defined as a social gathering in which food and drinks, which may include alcoholic beverages, are consumed in or near a parking lot before, during, or after the game (Borsari, Boyle, Hustad, Barnett, O'Leary Tevyaw, & Kahler, 2007). Research indicates the majority of game-day attendees consume alcohol during college football games, with many consuming alcohol in high-risk patterns (Fuertes, & Hoffman, 2016; Glassman, Braun, Reindl, & Whewell, 2011; Glassman, Dodd, Sheu, Rienz, & Wagenaar, 2010; Merlo, Ahmedani, Barondess, Bohnert, & Gold, 2011; Neal &Fromme, 2007).

Colleges and universities are mandated by the Drug Free Schools and Communities Act Amendment (DFSCAA) of 1989 to implement programs to prevent the use of illicit drugs and alcohol abuse by students (Library of Congress, 2018). This statute requires the dissemination of information to the student body regarding specific

school policies associated with alcohol and other drugs. While individualized programs are likely being conducted per the DFSCAA of 1989, the results are typically unpublished. According to Saltz (2007), little has been done with respect to policy-oriented approaches to prevent alcohol abuse among college students; it theorized that it might be due to colleges and universities being closed or isolated communities within the greater surrounding area. Additionally, administrators may be overly cautious when adopting alcohol-related policies because they perceive them to be unpopular among key stakeholders who are often opposed (Saltz, 2007). These barriers, perceived or otherwise, may explain why prevention efforts specific to game-day may be less than optimal at many universities.

The purpose of this study was to summarize the existing research on the alcohol-related issues associated with college sporting events and to identify potential gaps in the literature. More specifically, the prevalence of alcohol use among college football fans on game-day, the related negative outcomes, and policies specific to college sporting events were examined. Furthermore, a critical analysis of the level of scientific rigor used to conduct the research will be assessed. This information may assist practitioners and researchers in implementing interventions and policies to address the high-risk behavior that often accompanies college sporting events.

Methods

Specific inclusion and exclusion parameters were created to conduct this critical literature review. The articles included in the review were limited to studies conducted in the United States (U.S.). Articles published prior to 2000 were not included because the content was outdated. Topically, the articles were narrowed to original research studies

(not reports/articles utilizing secondary data) assessing the alcohol use associated with college sporting events, particularly football games, because of high-risk behaviors, such as disorderly conduct, assaults, and even riots.

The search technique for this critical literature review consisted of examining specific databases, keywords, and inclusion/exclusion criteria. Databases used included: Academic Search Complete, CINAHL Plus with Full Text, Education Full Text, Education Research Complete, ERIC, EBSCO MEDLINE with Full Text, Psychology and Behavioral Sciences Collection, APA PsycINFO, SocINDEX with Full Text, Sociological Collection, SPORTDiscus with Full Text, Google Scholar, Web of Science, and ProQuest Nursing & Allied Health. These databases were selected in an attempt to identify all the possible studies conducted on this topic. The following Boolean phrases were used: (football NOT soccer) AND ("alcohol use" OR drinking OR "alcoholic beverage*") AND ("United States" OR America OR USA OR U.S.) AND (college or university) AND ("game day" OR game-day OR "day of game"). The articles included in this literature review were limited to the United States in an attempt to keep the dataset homogeneous.

An initial assessment of all study titles and abstracts was conducted to determine eligibility for inclusion and to eliminate duplicates across databases. If a study title was considered potentially eligible (e.g., was focused on football game-day activates, alcohol use during collegiate sporting events, institutional alcohol policies during college sporting events; and was conducted in the US), the abstract was reviewed. Upon completion of the abstract review, if the information in the abstract aligned with the focus of the present study, the full-text article was obtained and reviewed. In addition, the

reference list of each article was reviewed to determine if additional studies should be included in the review. Next, a data abstraction table was created to depict the author and year, purpose, study design, location, number of sites where data were collected (e.g., universities), sample size, methods, reliability, validity, main results, and limitations. To enhance the search and interrater reliability, the co-authors reviewed each of the articles for inclusion and exclusion criteria and corroborated the categorization of the various articles.

Results

Figure 1 illustrates the study selection process. Of the 52 articles identified in the initial literature search, 13 were excluded by the initial title review because they did not meet the search parameters. During the abstract review, an additional nine articles were omitted because they were either not relevant, did not include U.S. college students as study participants, included off-site locations away from the university, or addressed college sports, which typically do not involve tailgating, yielding 41 articles. Following abstract review, five full-text articles were omitted due to not meeting the inclusion criteria. The final number of articles included for critical review was twenty-five (n=25).

Institutions where the research was conducted varied. Nine (36%) were from universities in the Southeast, five (20%) from Midwest universities, three studies (12%) utilized multiple locations in the Midwest and Mid-Atlantic, one (4%) study was conducted at university from the Southwest, another occurred at a Mid-Atlantic university (4%), and, finally, three studies (12%) did not specify a location. Institution size was somewhat homogeneous, with seventeen (68%) conducted at large institutions, two (8%) performed at mid-sized institutions, two studies (8%) spanned across multiple

institutions, and the remaining (56%) university sizes were not specified. The, study populations ranged from as few as 89 to as many as 11,850 with an average sample size of 2365 (SD=3247).

Study purpose, setting, sample, design, measures, findings, and limitations are shown in Table 1. The twenty-five articles included in this review contained the following study designs: 18 of the studies was cross-sectional (72%), two were longitudinal (8%), three were case studies (12%), one was a time-series (4%), and one was retrospective (4%). Among the articles, researchers utilized the following methodological techniques: nine random samples (36%), eight convenience samples (32%), two stratified-random samples (8%), two were quasi-experimental (8%), and the remaining four did not specify a sampling technique (16%). Data collection methods were primarily survey-based, with nine utilizing online-survey questionnaires (36%), eight used paper and pencil surveys (32%), three were case studies whereby researchers reviewed documented records (12%), and four utilized a hybrid in-person/online format (16%). Response rates were reported in nineteen (76%) of the studies. The response rates ranged from 25% to 96%, with an average of 48.7%. Web-based response rates were, on average, 32% lower than the response rates of studies conducted in person (on-campus central intercept surveys) or mailed surveys. In 17 (68%) studies, researchers modified a standardized instrument to collect data. In two (8%) of the studies, researchers administered the CORE Alcohol and Drug Survey (Core Institute, n.d.). For the remaining studies (24%), researchers designed and implemented a tailor-made survey to answer the study's unique research questions.

Regarding validity and reliability, in 12 of the studies (48%) the authors did not provide any information on these topics. However, Cronbach's alpha levels were reported in five (20%), four (16%) of the studies utilized inter-rater reliability, three (12%) studies reported using test-retest measures conducted using Wilcoxon singed-rank test or Pearson correlation analyses, and one (4%) of the studies the authors mentioned an attempt to increase reliability measures but did not explicitly state them.

Measured Outcomes. In each of the twenty-five articles reviewed, the authors included information about the alcohol-related outcomes associated with college football sporting events. In 13 of the studies, the authors describe the alcohol consumption behaviors associated with college football games, including the prevalence of alcohol use on game-day and/or the relationship between alcohol use and the alcohol-related consequences. In three of the studies, researchers examined participants' knowledge or attitudes about game-day alcohol use, including knowledge of campus alcohol policies, and attitudes towards alcohol policies. Social norms or participant's perceptions of alcohol use on game-day, including normative behaviors of alcohol use on game-day, parental behavior modeling on game-day, and roles of perceived drinking norms, were explored in three of the studies. Alcohol prevention strategies, including evaluating the effects of banning alcohol sales in university sports stadiums, reviewing event-specific prevention strategies, and institutional investments in prevention infrastructure, were assessed in three of the studies. The authors, in three of the studies, assessed at the implications of alcohol use during college football game-day, including the financial implications of selling alcohol in the stadium, emergency room visits on football game-day, and patterns of alcohol-related offenses occurring on football game-day. Finally,

researchers from one study investigated a policy banning alcohol sales in the stadium and how that policy impacted tailgating numbers and fan attendance.

Key Findings. Three main research topics emerged from the literature, including epidemiological trends regarding alcohol use (consumption behaviors, negative consequences associated with alcohol use, and gender drinking differences), social norm perceptions of alcohol use on game-day, and alcohol policies/prevention strategies. The majority of the articles were observational; whereby, the researchers reported on the prevalence rates of alcohol consumption on game day. However, in several of the articles, researchers examined policies and archival data.

Of the articles addressing alcohol consumption rates during college sporting events, researchers found that as many as 45% of fans drank alcohol on game-day, with many of the participants reporting consuming a higher number of drinks on game-day than the last time they partied or socialized (Glassman et al., 2007). Other researchers noted that college students constituted almost half (47.2%) of individuals who consume alcohol on game-day, with about one-quarter of them being under the legal drinking age (Leavens et al., 2019; Oster-Aaland, & Neighbors, 2007). Notably, Glassman and colleagues (2011) reported that among the participants who indicated consuming alcohol on game-day, 59.2% were classified as high-risk drinkers, with about one-fifth (20.4%) engaging in extreme ritualistic alcohol consumption, a colloquial term that represents consuming twice the threshold for high-risk drinking (10 or more drinks for a male, eight or more drinks for a female on game day).

Throughout much of the literature, the alcohol consumption behaviors associated with college football games were referred to as “event-specific” or “celebratory”

occasions whereby alcohol is consumed in greater amounts than at other times throughout the year (Neal, & Fromme, 2007; Woodyard & Hallman 2010). Indeed, Neighbors et al., (2007) identified sporting events, spring break, birthday celebrations, weddings, graduations, and major accomplishments as other event-specific drinking occurrences in which people tend to drink more than they would ordinarily. Woodyard and Hallam (2010) conducted a study and found that college students consumed more alcoholic drinks on weekends than other weekdays, with 28.9% consuming seven or more drinks during a weekend episode, compared to 7% of students who drank that much on a weekday episode. According to the authors, the difference in drinking rates was due, in part, to the social festivities associated with college football games played on Saturdays (Woodyard and Hallam, 2010). Similarly, Neal and Fromme (2007) studied the drinking rates among college students over two seasons and found that high-profile games were amongst the heaviest days for alcohol consumption.

Seven of the studies included negative consequences associated with game-day alcohol use (Abar et al., 2011; Champion et al., 2009; Glassman et al., 2010; Haun et al., 2007; Hustad et al., 2014; Lawrence et al., 2012; & Leavens et al., 2019). In one study, researchers found that individuals who consumed alcohol on weekends when home football games were played, were more likely to experience negative alcohol-related consequences due to not only their own drinking behaviors but also the drinking behaviors of others (Champion et al., 2009). In another study, authors described the patterns of alcohol-related offenses occurring within the context of holidays and collegiate football games and found that home football games were associated with higher numbers of alcohol possession cases, crimes, and arrests than other times of the

year (Merlo et al., 2010). Similarly, the likelihood of experiencing negative consequences of alcohol use was higher among those who consumed alcohol while tailgating than among individuals that did not engage in alcohol consumption while tailgating (Lawrence et al., 2012). The consequences of alcohol consumption on game-day were widespread which included having a hangover, drinking and driving, memory loss, vomiting, injury, assault, arrests, and emergency room visits (Glassman et al., 2008a; Glassman et al., 2010; Haun et al., 2009; House et al., 2014; Hustad et al., 2014; Merlo et al., 2010). Lawrence and colleagues (2012) examined the negative secondhand consequences of alcohol consumption on college campuses, including football games, and found that the secondhand effects of alcohol extended outwards, not only affecting those in attendance but also to the larger surrounding community.

Researchers indicated gender differences exist related to alcohol consumption on game-day and the related consequences (Champion et al., 2009; Glassman et al., 2007; Haun et al., 2007; Neal et al., 2007; Nelson & Wechsler, 2003). For example, in one study, researchers indicated males (42.9%) engaged in high-risk drinking, on college football game-day, at substantially higher rates than females (25.9%) (Glassman et al., 2008a). In a similar study, females experienced more consequences when drinking on game-day, even though males consumed more alcohol (Haun et al., 2007). To address some of the limitations associated with self-reported data Glassman et al., (2011) examined the breath alcohol concentration (BrAC) of college football fans, and found that males exhibited higher average BrAC (0.057 mL/L) levels than females (0.047 mL/L), corroborating other research findings indicating that gender differences do exist related to game-day alcohol consumption.

Several studies were conducted on the normative behaviors associated with college sporting events. For instances, researchers conducted a study on students' perceptions of campus alcohol policies at one institution found that a large portion of students who knew and supported campus policies, perceived their friends to consume significantly less alcohol than students who did not know, or opposed their campus policies (Marshall et al., 2011). Similarly, Glassman and colleagues (2011) found that college students overestimated their own breath alcohol concentration (0.072 mL/L) as compared to their actual levels (0.054 mL/L) (BrAC), and misperceived the percentage of fans who were intoxicated by approximately 2.5 times the actual rate (Glassman, 2011). Furthermore, Abar et al. (2011) reported that parental participation at tailgating activities was associated with student drinking behaviors on game-day, whereby, if students perceived that their parent(s) were drinking heavily, they were more likely to drink excessively themselves.

In only a select few of the studies (12%; n=3) did researchers examine alcohol-related policies specific to college sporting events. In one study, the authors reported as many as two-thirds of the schools sampled prohibited alcohol use at all sporting events (Nelson et al., 2010). Prohibiting patrons from bringing in alcohol that was not sanctioned by the university, limiting the number of alcoholic beverages sold per transaction, and restricting the time in which alcohol would be sold in the stadium were identified as existing policies (Nelson et al., 2010). In a similar study, researchers found that halting alcohol sales within the stadium resulted in a 6% decrease in season ticket sales, while 19% of respondents reported that misconduct related to fans' alcohol use was a reason not to renew their season tickets (Bormann et al., 2001). Additionally, House

and colleagues (2014) found that when examining the effects of an alcohol ban by comparing the number of alcohol-related emergency department (ED) visits on football game-day using pre/post research design, that the alcohol ban had little effect on the risk of ED visits, as the number of alcohol-related ED visits remained stable, at approximately 10%, before and after the alcohol ban was implemented (House et al., 2014).

Conclusion

Although vast research has been conducted on college students' alcohol use, less is known about event-specific consumption patterns, particularly those associated with college sporting events. The purpose of this study was to review and summarize the research concerning alcohol-related issues pertinent to college sporting events, particularly college football, and identify gaps in the literature. While the articles identified in this literature review included predominantly epidemiologically based studies pertaining to alcohol use, the associated consequences, and gender differences, two additional themes emerged, including social norms and alcohol policies. The study design, location, sample size, reliability, validity, and limitations were also examined to assess the overall scientific rigor of the various studies.

The majority of the research focused on the consumption behaviors of those engaging in tailgating activities while at collegiate football events. Among these articles, the prevalence of alcohol consumption, identifying the number of drinks consumed, blood breath alcohol content levels, and attitudes towards alcohol consumption were reported. Additionally, the negative consequences of alcohol consumption during tailgating were assessed. These results were two-fold, including the primary implication of alcohol use on oneself, and the secondary effects on those around the user. Gender was

examined in several studies as both men and women drank more during college football events than they typically would; however, men drank at significantly higher rates than women. The preponderance of evidence indicates that people drink substantially more on game-day and experience more consequences than they do during other social events.

Of the non-epidemiological based studies, there were two major topics investigated, social norms and policy. Misperceptions of alcohol use and intoxication levels exist regarding the extent to which alcohol is permitted and consumed on game-day. Often, college students and fans overestimated the alcohol consumption which took place on game-day. Thus, university officials and prevention specialists should consider conducting a social norms marketing campaign to correct the misperceptions regarding alcohol use specific to game-day and offer alternative ways for fans to celebrate (e.g., alcohol-free areas). Additionally, the examination of alcohol policies were presented in a few of the articles. While most of the policies surrounded restricting alcohol during the sporting event, such as a ban on alcohol or restricted stadium sales, other researchers investigated the alcohol-related crime rates and emergency room visits following the game.

Regarding the rigor of the studies, the research methods, and scientific techniques varied. Cross-sectional studies consisted of approximately three-quarters of the published literature, while longitudinal and case studies together constituted roughly one-quarter of the remaining studies. A multitude of data collection techniques were utilized throughout the literature review. Convenience and random samples were the most common, each constituting about one-third of the collection techniques; stratified-random and quasi-experimental studies were used to a lesser extent. Largely, paper and pencil, and online

surveys were the most common data collection techniques, followed by mixed methods, and archival case studies. Finally, many of these studies utilized self-reported data; potentially introducing recall bias and social bias.

Study limitations exist with any research, and a literature review is no exception. Despite the exhaustive review methods employed for this study, an unknown number of research articles may have been inadvertently omitted. In an attempt to remedy this potential shortcoming, a robust and diverse search strategy utilizing a wide variety of academic journal databases, web-based search engines, and reviewing individual article reference sections were diligently employed. Unpublished studies on the subject matter may exist, yet assessing them was not possible. Further, because many of the studies are older or the researchers used a local sample, the alcohol consumption prevalence rates and the associated consequences are not generalizable. Moreover, definitive conclusions regarding the individual studies analyzed could not be made due to the nature of the review. Finally, inclusion was limited to studies conducted in the U.S.; thus, results cannot translate to sporting events outside U.S. collegiate football.

Event-specific prevention, particularly studies involving the alcohol consumption associated with college sporting events, is an emerging field of research. While a number of studies were robust, in the majority of articles, the authors did not provide validity and reliability measures or techniques. The need for more rigorous research, such as using an experimental design, random sampling, and nationally-based research studies is warranted. Gaps in the literature include the evaluation of interventions designed to reduce alcohol and/or drug use, the impact of enforcement has on alcohol and drug consumption, the perceptions university leaders have towards alcohol policies and the

related liability issues, the use of new or different theoretical constructs to explain behavior, and a lack of qualitative research on the subject matter. Regarding interventions, Neighbors and colleagues (2007) describe strategies for implementing event-specific prevention and reference a typology matrix created by DeJong and Langford (2002), which could be used to develop and evaluate interventions specific to game-day. In general, researchers should further explore the social and cultural aspects of alcohol use on game-day to better understand why people drink more during college football sporting events than on other occasions.

In summary, the findings from this literature review provide an overall assessment of the research conducted on alcohol use at collegiate football sporting events. Results from this literature review may inform practitioners and university officials with information on how to create a healthier atmosphere during college sporting events. Indeed, university officials often want to know what other campuses are doing to address controversial issues such as those associated with game-day. Equally important, universities with limited resources need to implement effective initiatives; thus, empirically-based studies, published in the literature, represent a fundamental first step in designing interventions. Moreover, securing internal or external funding through research grants may allow university personnel to conduct such studies. Notably, implementing restrictive alcohol policies during college sporting events and publicizing them may help mitigate excessive alcohol use and related consequences. Ultimately, as university personnel work to remedy this unique public health issue, college students, faculty, staff, visitors, and college football fans, in general, will benefit by watching football games and socializing in safer environments.

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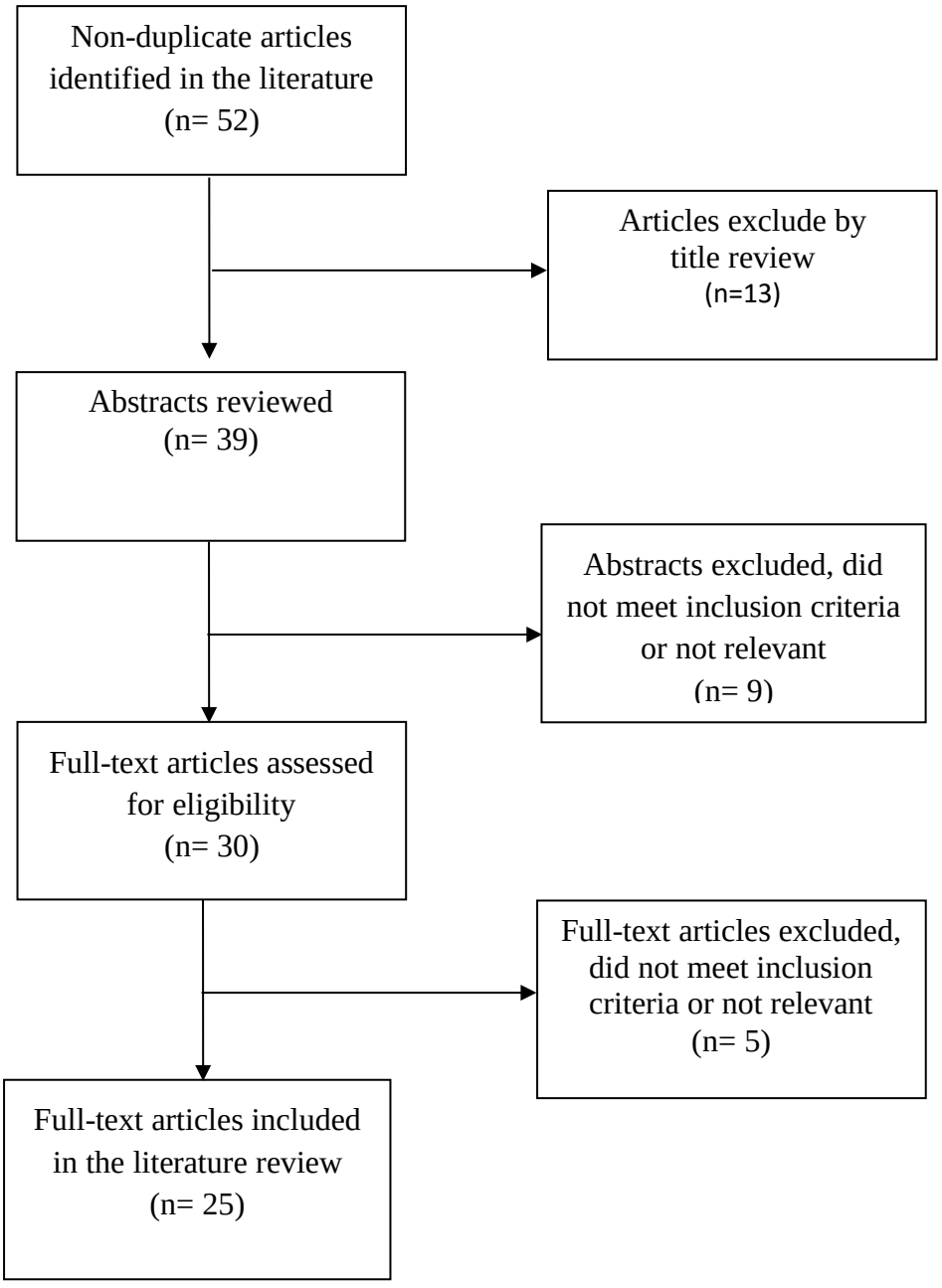

Figure 1: *PRISMA* Article Flow Chart

Table 1. Article Summary Table

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
(Abar et al., 2011)	Parental impacts.	A large mid-Atlantic university.	Freshmen.	500	Cross-sectional. Random Paper Survey.	Parental modeling of alcohol use was predictive of student alcohol use and consequences.	Parents engaged in HED at tailgates. Gender and parental HED were consistently associated with student outcomes. Males drank more and experienced greater consequences than females.	Homogeneous sample with limited ability for directionality and causal inferences. Student perceptions of parental behaviors.
Barry et al., 2019)	Impact of alcohol available in the college stadium.	A large university.	Police records.	1940	Secondary data analysis.	Trends in police incidents. Compare pre and post-policy crime and incidents occurring among rivalry games.	Years alcohol was sold at the campus stadium (2012–2013) averaged increased annual incidents. Liquor law violations and alcohol consumption by a minor were the most frequently cited offenses, representing approximately half (50.2%) of all crime incidents. Approximately half of all incidents were attributed to game weekends for rival teams.	Analysis focused on a single university. Limited generalizability to rural universities or areas.
Bormann et al., 2001)	Evaluate the effects of an alcohol ban.	Large university.	1995-1999 football season records.	1996: 191 1997: 748	Mixed method.	Assessed attitudes of individuals who did not renew season tickets.	Only 6% said the reason was the change in the alcohol policy. Attitudes regarding the alcohol policy did not differ by gender. Female students viewed the effect on crowd behavior more favorably than men. Arrests, assaults, ejections, and student referrals all fell dramatically after the ban.	Low response rate. Limited availability of pre-ban data. Anecdotal reports of students and season ticket holders.
Champion et al., 2009)	Examine differences in alcohol use and alcohol-related consequences weekends.	Two large universities (Mid-West & Mid-Atlantic).	Undergraduate college students.	3238	Cross-sectional Convenience sample. Web-based survey.	Explore the relationship between alcohol-use indicators and alcohol-related consequences.	A significantly greater percentage of students reported drinking on the HRW compared with the LRW. Significantly greater odds of increased days of drinking occurred on HRW. The odds were also greater for males than for females to drink on more days. The odds of getting drunk on more days on HRW were significantly greater than on LRW. Participants were significantly more likely to experience negative alcohol-related consequences due to their own drinking on HRW compared with LRW.	Self-reported data, presented from two large schools. Results are not generalizable to smaller schools or to schools.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
(Glassman et al., 2009)	Assess Theory of Planned Behavior (TPB) in student alcohol consumption on game-day.	Large southern university.	Students.	3000	Cross-sectional, SRS.	Attitudes, Subjective Norm, Perceived Behavioral Control & Behavioral Intention.	A significant correlation existed between Attitude Toward the Behavior and Subjective Norm, Subjective Norm and Perceived Behavioral Control, and Attitude Toward the Behavior and Perceived Behavior Control. Additionally, strong statistically significant direct effects of Attitude Toward the Behavior on Behavioral Intention, Subjective Norm on Behavioral Intention, and Behavioral Intentions on the number of drinks consumed.	Self-reported data subject to consumption estimates, social desirability, recall bias, and anonymity. Data were collected from 1 university and may not be representative of others.
(Glassman et al., 2011)	Determine the BrAC rates of college football fans of game day.	Large Midwest university.	Tailgate attendees.	536	Time Series Design, Convenience sample. Paper Questionnaire / intervention.	Prevalence of alcohol consumption and BrAC rates of tailgate fans.	90% (n=466) of the sample consumed alcohol during the two-hour tailgating season prior to the game. Mean BrAC of 0.053 prior to the game, decreased following the third football game. During the first and final games, BrAC rates were at their highest. Males had a higher BrAC rate than females (0.057 mL/L). Most (85%) support designated tailgating areas. Approximately 20% of the sample had a BrAC above 0.08. Participants significantly overestimated their own BrAC as compared to the breathalyzer. Participants significantly overestimated the number of fans who were intoxicated, resulting in 53% (2.5x the actual number). Only 10% of participants abstained from consuming alcohol.	Results not representative of other schools; survey questions may have been compromised due to underage participants, self-reported behaviors.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
(Glassman et al., 2008a)	Examined the Theory of Planned Behavior in predicting alcohol consumption on game-day.	Large university in the Southeast.	College students.	2083	Random Sample. Electronic survey. Cross-sectional study.	Examine if TPB predicts alcohol use among college students and determine the causal relationships among TPB variables.	A modest correlation between Attitude Toward the Behavior and Subjective Norm existed. No statistically significant correlations were found between PBC and the other TPB constructs. Intentions to drink on game-day predicted actual behavior. Positive expectancies concerning alcohol use and perceived acceptance of drinking predicted intentions (Behavioral Intention) to drink on game day.	Self-reported data, large sample size with a low response rate.
(Glassman et al., 2010)	Examine Ritualistic Alcohol Consumption (ERAC) rates.	Large Southeastern university.	Students age 18-24.	740	Cross-Sectional, random sample, online survey.	Identify alcohol consumption patterns of students on game-day.	Approximately one-fifth of all survey respondents (20.8%) indicated they typically drank alcohol on game day. The average time spent drinking on game day was 3.9 hours. 15.7% engaged in ERAC, with multiple instances of reported negative consequences, including: hangovers (32%), drinking and driving (16%), memory loss (13%), vomiting (11%), injury (85), fights (5%), reprimand by police (2%), and sexual exploitation (2%).	Self-reported data. Underclassmen are often underage and may lie about their actual age on a survey.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
Glassman et al., 2008	College Football Championship game drinking rates.	Large Southeastern university.	Students.	2096	Cross-sectional, convenience sample. Intercept and online survey.	Elucidate high-risk drinking behaviors of college students—aid in developing a set of best practices and recommendations for celebratory drinking events.	Half (49.5%) of the e-mail survey population reported not drinking at all. The average number of drinks consumed was 4.2. Participants spent, on average, 3.25 hours drinking on the night of the National Championship Game. The overall high-risk drinking rate was 32.5% for males (42.9%) and females (25.9%). Hangovers were the most commonly reported negative consequence. The odds ratio results from the multiple logistic regression analysis indicate that watching the game somewhere other than the designated campus venue (bars, house parties, home, etc.), was the strongest predictor of high-risk drinking.	Self-reported data, low response rate, results may not be representative of other universities.
Glassman et al., 2012	Expectancies college students have for drinking on game day.	Large university in the Southeast.	College students.	1984	Cross-sectional, SRS, online survey.	College students' motivation to consume alcohol as predicted by the Theory of Planned Behavior (TPB).	The majority (58.7%) of college students consumed alcohol on game day at least once. The average number of drinks consumed was 5.58, including an average of 2.82 before the game. 59.2%% were classified as high-risk drinkers. 20.4% engaged in ERAC. Strongest predictors of alcohol consumption included rowdy fan, social confidence, and fun.	Self-reported measures, low response rate, Game-day expectancies may intensify depending on the opponent and time.
Glassman et al., 2007	Identify and address social drinking rates among attendees and demographics.	One large university in the southeast.	Students and non-students.	762	Cross-sectional, quasi-experimental Sample. Online questionnaire.	Social drinking rates on game-day, participant demographics.	45% of participants indicated they typically drank alcohol on game day. Participants reported consuming more drinks during game-day than the last time they partied or socialized. Male fans reported consuming more drinks during game-day than did women—no other statistically significant interactions.	Modest response rate, self-reported data. The sample was collected from one large school in the southeast. Patterns may not be representative of other universities.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
Haun et al., 2007	Explore the behavior/consequences of game-day alcohol use.	Large university in the southeast.	Tailgating fans.	352	Convenience Sample, cross-sectional, paper/Pencil survey.	Examine differences in age and gender.	Males drink more than females, but females have more adverse consequences when drinking on game-days. Respondents ages 21-26 were more likely to perceive that friends drink excessively versus other age groups. Respondents ages 24-26 were more aware than other groups of anti-alcohol campus campaigns, but drink more on game-day, and are more likely to frequent bars and tailgating areas.	Self-reported data, convenience sample. One location that may not be representative of other universities.
Huang et al., 2013	Examine financial implications of selling alcohol on football game-days.	State university.	Athletic director.	N/A	Review of financial records. Mixed method online survey/ Archival.	Examines the financial implications of selling alcohol to the general public on football game-days.	The university neither strictly monitors nor sells alcohol in unsanctioned tailgating areas. The only areas for alcohol purchase are to premium seating and club areas. The impact of alcohol exclusion was evident in ticket sales. By selling alcohol to general admission patrons, the athletic department receives an additional $576,001 in net revenue. Without the concessionaire, the difference in revenue between alcohol and no alcohol is $1,956,525; however, if outsourced, the difference in revenue decreases to $576,001, approximately 70% less. General admission revenue increases by 58%, but in the larger scope of concession revenue, the increase is only 37%.	Premiums attributed to club seats cannot be solely explained by the availability of alcohol. Win-loss record in the immediately preceding year, as well as the overall success of the football team in the past couple of years could also impact ticket sales.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
House et al., 2014	Compares emergency department visits on football game-days.	University hospitals and Clinic's ED.	Visitors on football game-day, spanned 47 games from 2008-2011.	7284	Case Study, medical chart review/ Archival.	Compare alcohol-related emergency department visits on football game-day pre- and post-policy implementation.	Males and Females were equally represented during the study, although males were responsible for 70% of the alcohol-related ED visits. The mean age was of patients was 35.6 years. 1 in 10 ED visits on football game-days was alcohol-related. Patients 18-20 were almost four times as likely to have an alcohol-related visit as 41-50. Policies instituted to reduce the consequences of excessive alcohol use had little effect on the risk of an alcohol-related visit. The proportion of alcohol-related ED visits did not differ before or after the "Think Before You Drink" campaign.	Limited generalizability at a single Big 10 university. Single record reviewer who was not blinded to the study's hypothesis. The university ED implemented a new hospital-wide electronic medical record, which has resulted in incomplete records.
Hustad et al., 2014	Prevalence of pregaming and tailgating.	State university.	Two research studies.	611	Case study of students/ Archival.	PG and TG defined, alcohol use, alcohol consequences, drinking norms, and the role of drinking in college.	PG occurred on 3.41 days, and participants drank at a tailgate on 0.70 days in the past 30 days. Participants who reported PG reported consuming alcohol more frequently, reached higher eBACs, reported experiencing more alcohol-related consequences, and endorsed higher alcohol beliefs as compared to non-pre-gamers and non-tailgaters. Participants who reported *both* TG and PG drank alcohol more frequently, engaged in heavy drinking more frequently, reached higher eBAC, endorsed higher descriptive norms of peer drinking, reported more positive beliefs about drinking in college, and engaged in PG more frequently than participants who reported PG only as compared to non-pre-gamers and non-tailgaters.	DNR.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
Lawrence et al., 2012	Examines on-campus pregame activities during homecoming.	Large public Southeastern university.	Students.	567	Cross-sectional, convenience sample, paper-pencil questionnaire.	Examine if tailgaters were more likely to report binge drinking and negative consequences within the past 30 days as compared to non-tailgaters.	Those who tailgated were more likely to experience negative consequences on all but two items (Relationship Issues and Regretted Sexual Situations). Additionally, significant interactions were found in both interpersonal and academic consequences. A logistic regression model predicts that the odds of participants classified as tailgaters reporting binge drinking are 3.07 times higher than those classified as non-tailgaters.	Self-report data.
Leavens et al., 2019	Evaluate drinking behaviors and consequence of college game day tailgate attendees.	Midwest university.	Tailgate attendees.	89	Cross-sectional (Test-retest design), convenience sample, in-person and online questionnaire.	Identify drinking behaviors and consequences of college game-day attendees.	23.6% under the age of 21. 47.2% of the sample was college students. 81% belonged to fraternal or sororal organizations. Intention to drink but not get buzzed (34.8%), reach a slight buzz (28.1%), get a little drunk (21.3%), and get very drunk (15.7%). 40.4% engaged in HED within the past two weeks. BrAC was significantly associated with negative consequences. Having intentions of drinking leads to a higher likelihood of drinking while tailgating.	Small sample size. High non-response rates. Alcohol related consequences are often delayed and not represented immediately.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
Marshall et al., 2011	Examines students' knowledge and attitudes toward campus alcohol policies.	Public college.	Freshman students.	422	Paper/pencil questionnaire, convenience sample, cross-sectional design.	Students' knowledge, attitudes toward campus alcohol policies, how policies related to alcohol consumption, and alcohol social norms.	Almost all of the students were under the legal drinking age of 21. 38% reported consuming five or more drinks. Males reported drinking significantly more compared with females at social events. Students demonstrated considerable knowledge of campus rules and regulations, with 89% reporting general awareness of school policies. Knowledge and acceptance of campus rules were reported by 39%; knowledge of and opposition to campus rules were reported by 14%. In addition, 36% generally knew of the rules but had no opinion. The remaining 11% reporting being unaware of college rules. Overall, students who know and support campus alcohol policy consume significantly fewer drinks than those indicating other responses.	Results may not generalize college students in the United States. This sample represented a campus of predominantly Caucasian college students. Causal relations cannot be inferred.
Merlo et al., 2011	Assessed determinants of heavy episodic drinking among tailgaters.	Two large universities (southeast & Midwest).	Tailgaters and sporting event spectators.	466	Cross-sectional design., convenience sample, paper question-naire.	Determine if tailgates are engaging in HED.	Participants were primarily male, non-Hispanic white/Caucasian, and non-students. Participant ages ranged from 18 to 71 years, and most participants planned on attending the game. Overall, 48.5% of participants at School1 and 58.8% at School 2 reported heavy episodic drinking. Participants reported having 4.8 drinks at School1 and 5.3 drinks at School 2. The majority of participants reported consuming alcohol during collegiate American football tailgating; many participants reported heavy episodic drinking. At both sites, younger age was associated with heavy episodic drinking.	Findings may not be generalizable to other settings. The convenience sampling strategy may have resulted in selection bias. Self-reported data may possess recall bias.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
Merlo et al., 2010	Examining rates of alcohol-related football arrests.	Large university.	Public arrest records from 3 types of events.	944	Case study, review of public record/ Archival.	Frequency of arrests and offenses for crimes that are likely to be associated with alcohol consumption.	Home football game-days were associated with a higher average number of arrests than other events. On average, there were 70.3 arrests on each football game day (range 14–132), compared to 12.3 (SD = 8.8) arrests on control Saturdays (range 4–34), and 11.8 (SD = 6.3) arrests on holidays (range 4–22). Significant group differences were observed, including Alcohol Possession by a Minor, driving under the influence, open container violations, alcohol possession at the stadium, among others.	Conducted in one NCAA Division I university town, results may not be generalizable. Some of the holidays studied occur during times when many university students may leave town.
Neal & Fromme, 2007	Identify alcohol consumption levels and behavioral risks.	A large university in the southwest.	Freshman & Sophomore Students.	541	Quasi-experimental design, online survey.	Examine theoretically relevant predictors of game-day drinking.	Football game-days were among the heaviest days for alcohol consumption, particularly high-profile games. Consumption patterns during these games were on par with known heavy drinking context, such as event-specific times. Saturday, specifically game-day Saturdays, were associated with heavier alcohol consumption. However, both home and away football games were associated with an increase in alcohol consumption for men as compared to non-game day Saturdays. Both home and away football games were associated with event-specific drinking dates for men, but not for women.	Social environment influence. Data was not collected under the context of examining sport-related drinking on game-days. Data were collected over two seasons, both of which happened to be national championship seasons.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
Nelson et al., 2010	Alcohol control policies at U.S. intercollegiate sports events.	DNR	Students and administrators.	7261	Cross-sectional, random selection, mailed questionnaire.	Examine the association with student drinking at intercollegiate sporting events.	More than two in three schools reported that they prohibited alcohol use at all sports events associated with the college. Approximately one in four reported prohibiting alcohol use at some, but not all, sports events. Fewer than 8% had no prohibition against alcohol use at sports events. Colleges that fielded NCAA Division I athletic teams were less likely to prohibit alcohol at all events and more likely to be selective about the events where alcohol was prohibited. Colleges with large enrollments and public institutions were less likely to prohibit alcohol at all events. Among the 24 colleges that sold alcohol at sports events, most had restrictions on sales that included checking IDs (22), prohibiting outside alcohol (22), limiting the amount sold (19), and limiting the time alcohol was sold (22). Fewer than half the colleges reported that they permit alcohol at tailgate parties.	Self-reported data. Social desirability of students and administrators inflating the level of alcohol control policies. Lack of data collected on alcohol-consumption-related problems experienced.
Nelson & Wechsler, 2003	Examine the relationship between alcohol use and interest in collegiate sports.	National sample of college students.	College students from 119 colleges.	11,850	Cross-Sectional design, random selection, mailed questionnaire.	Examine if sports fans were more like to engage in alcohol use at college sporting events.	43% of sports fans were male. Sports fans were more likely to be under 21 as compared to non-sports fans. Among students who drank alcohol in the past year, sports fans were more likely to experience negative outcomes related to their alcohol use than nonfans. Schools were more often members of NCAA Division I with enrollments greater than 10,000 students. The percentage of students who engaged in binge drinking was significantly correlated with the percentage of students who were identified as sports fans. Students attending sports schools experienced secondhand effects of alcohol at higher rates than students at nonsports schools.	Reporting bias, self-reported behavior. The definition used to define sports fans was based on importance rather than attendance. Sports-schools were an aggregate of sports fans.

Table 1. Article Summary Table Cont.

Author(s) & Year	Purpose	Setting	Sample	*N*	Design	Measures	Findings	Limitations
Oster-Aaland & Neighbors 2007	Examine alcohol use following a university policy change, allowing alcohol use at football games.	Midsized public university in the Midwest.	Undergraduate students.	1000 (2003), 10,263 (2004).	Random Sample, online survey.	Assess students' perceptions of alcohol use following a university policy change.	30.7% (2003) and 43.6% (2004) were under the age of 21. No change in drinking prevalence rates following the policy change. Students report a neutral opinion on attending football games now that alcohol is permitted. Although actual reported drinking did not change from before to after the policy change, perceptions of the amount of alcohol consumed by tailgating students were higher after the policy change than before.	The study was conducted at one institution and may not be representative of other institutions. Limited in scope, participants who cared more about tailgating may have resulted in a selection effect.
Woodyard & Hallam, 2010	Examine differences between celebration events compared to typical drinking behaviors.	Southeastern university.	Undergraduate Students.	214	Stratified random sample, web-based questionnaire, cross-sectional.	Examine the quantity of alcohol consumed by students when drinking in celebration of an event or holiday and typical weekdays.	Significant differences existed in the number of drinks consumed between celebration drinking and typical weekend drinking. Contrary to weekend drinking, the quantity of alcohol consumed during a weekday drinking episode was significantly less than the amount of alcohol consumed during celebration events. Additionally, 10.7% of students consume more than ten drinks during a weekend drinking episode, whereas less than 1% consume that amount of alcohol during the weekdays. The two events in which the greatest number of students report not drinking were nonconference football games (51.86%) and Halloween (50.47%). There is also a greater percentage of students drinking more than seven drinks during weekend episodes than during weekday episodes, 28.9%, and 7.01%, respectively.	Self-report data. Categorical response variables limiting parametric statistics. Time-lapse between the occurrence of the Fall celebration events and the time the questionnaire was administered.

Appendix A

Journal of College Student Development Guidelines

Author Guidelines

Never submit manuscripts under consideration by another publication. The corresponding author must affirm non-duplication of submission in the cover letter.

Featured manuscripts should not exceed 30 pages of 1-inch margin, double-spaced, typewritten text **INCLUDING** references, tables, and figures. On the campus manuscripts should not exceed five to seven pages **INCLUDING** references, tables, and figures. Research in Brief manuscripts should not exceed 7-9 pages **INCLUDING** references, tables, and figures. To accommodate extensive literature reviews, multiple analyses, or other exceptions, Feature articles may sometimes be extended to 33 pages and Research in Brief articles may be extended to 10 pages.

All manuscript submissions and reviews are handled through our web-based Editorial Manager™ (EM) system. JCSD's EM web page may be accessed at the following here. Authors submit manuscripts and track progress through all stages of the review process. The Editorial Manager™ system includes step-by-step instructions throughout the submission process. Here are some suggestions that will assist you in the process:

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- Save each element of your submission as separate files. These may include:
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    - a separate cover sheet with information for the author(s) (required)

    - a cover letter
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- The manuscript submission is not complete until you have reviewed and approved the PDF files created by the journal management.
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Chapter Three

University Presidents' Perceptions of Alcohol Policies for College Sporting Events

This chapter consists of consists of a research study on university presidents' perceptions of alcohol use during college sporting events, particularly tailgating. More specifically, this chapter includes the introduction, methods, results, discussion, and conclusion of the present study. The purpose of this article is to: 1) examine university presidents' support for implementing a policy regulating the alcohol consumption associated with tailgating during college sporting events, 2) assess which constructs of the HBM are most predictive of university presidents' support for implementing such policies, 3) and to identify strategies for implementing said policy. The chapter concludes with a summary paragraph, references, tables, and figures. This manuscript will ultimately be submitted to the *Journal of American College Health;* a copy of the journal guidelines can be found in Appendix A.

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Abstract

Introduction: The purpose of this study was to assess college presidents' perceptions of implementing a policy regulating alcohol consumption during tailgating. **Methods:** Researchers used a cross-sectional research design to survey 130 Division-I Football Bowl Subdivision (FBS) schools. **Results:** Most of the institutions (68.4%) had a policy regulating alcohol use in place, although schools were at various stages of implementation. Multiple regression analysis revealed the perceived benefits of the HBM was the only construct predictive of regulating alcohol use during tailgates or alcohol sales within the stadium. **Conclusions:** To implement alcohol-related policies for college sporting events, the perceived benefits of the policy should be emphasized. In particular, explaining to university presidents and other campus leaders how a policy would foster a safer campus environment, protect bystanders (non-drinkers and/or those drinking responsibly) and alleviate confusion over where and when alcohol consumption is allowed on game-day, appears promising in advancing prevention efforts.

Introduction

The excessive alcohol use among college students and the associated consequences they experience signifies a serious public health concern for university officials. Of particular concern is the excessive drinking, which often accompanies special events such as 21st birthdays, New Year's Eve, St. Patrick's Day, spring break, Halloween, weddings, etc. This emerging area of research has been termed *event-specific* alcohol consumption, denoting a time whereby alcohol consumption is culturally tied to an event or social happening (Miller, & Gillentine, 2006; Neighbors, Oster-Aaland, Bergstrom, & Lewis, 2006; Oster-Aaland, & Neighbors, 2007). Researchers indicate that individuals who attend these events consume alcohol in greater amounts than they would ordinarily (Neal, Sugarman, Hustad, Caska, & Carey, 2005; Neighbors, Oster-Aaland, Bergstrom, & Lewis, 2006) and, as a result, are more likely to experience negative health consequences (Foster, Bass, & Bruce, 2011; Neal & Fromme, 2007).

Of particular concern within event-specific drinking occasions is the alcohol consumption at college football games, commonly referred to in popular culture as simply, "game-day." Game-day draws not only university students, but alumni, fans, and tailgating attendees alike to college campuses in vast numbers. Indeed, tens-of-thousands of individuals come to campus to watch the game, socialize with friends, and to eat and drink. Researchers found that fans who attended game-day festivities consume alcohol at higher rates than they do during other social occasions (Glassman, Werch, Jobli, & Bain, 2007; Glassman, Braun, Reindl, & Whewell, 2011; Neal, Sugarman, Hustad, Caska & Carey, 2005; Nelson & Wechsler, 2002; Woodyard & Hallam, 2010).

It has also been reported that large numbers of college students engage in heavy episodic drinking (HED) throughout the football season (Merlo et al., 2011). HED is defined as consuming four drinks for women and five drinks for men in one sitting (National Institute on Alcohol Abuse and Alcoholism, n.d). Merlo and colleagues (2011) surveyed college students at two schools and found that 40% and 58% of individuals at their respective universities engaged in heavy episodic drinking; whereas, only a relatively small portion (11.6%) abstained from consuming alcohol. Between the two schools assessed, fans had an average BrAC of 0.07 mL/dL, and 32% of students at one institution and 40% at the other school had a BrAC over the legal driving limit of 0.08 mL/dL (Merlo et al., 2011). In a similar study, researchers found that 16% of college students drank at twice the HED threshold, with males engaging in this behavior at 2.5 times the rates as females, and older students drinking at higher rates than their underage counterparts (Glassman et al., 2010).

A lack of policy and/or enforcement exists during college sporting events, football game-day in particular. Countless individuals illegally possess open containers as they drink alcohol in public areas (tailgate in campus parking lots), demonstrating that alcohol consumption, even if illegal, may be socially acceptable on game-day (Outside the Classroom, n.d.). To address this issue, one university passed a policy permitting alcohol to be legally consumed at select tailgating areas and found that alcohol consumption did not increase; however, students subsequently overestimated the amount of alcohol others consumed as well as the number of individuals drinking on game-day (Oster-Aaland & Neighbors, 2007). The results from a related study indicated that college students and football fans, in general, support designated tailgating areas that permit alcohol

consumption; however, the long-term implications of such a policy are unknown (Glassman, Werch, Jobli, & Bian 2007).

While vast numbers of studies have been conducted on college students and alcohol use, a dearth of research exists surrounding alcohol prevention policies and enforcement strategies at college sporting events. More specifically, no research has been conducted assessing the perceptions of university presidents' or senior administrations' support for implementing a policy(s) regulating alcohol use during tailgating on campus. The Higher Education Center for Alcohol and Other Drug Abuse and Violence Prevention (1997) provided recommendations for college and university presidents regarding alcohol and other drug prevention, urging them to be vocal, visible, and a visionary on prevention issues and thereby was the impetus for this study (Carothers, Coleman, Dawson, Gee, Hines, & Pacheco, 1997). High-stake policies rarely become implemented without senior approval, often at the level of the university president. Similar research conducted examining college presidents' support for a tobacco-free campus embodied yet another controversial public health policy unique to higher education (Reindl, Glassman, Price, Dake, & Yingling, 2014).

Thus, the objective of the current study was to examine the NCAA Division I Football Bowl Subdivision school's presidents' perceptions and attitudes regarding the implementation of alcohol control policies during collegiate tailgating events. The assessment included using constructs from the Health Belief Model (HBM), specifically the perceived benefits, barriers, severity, and susceptibility constructs. The Transtheoretical Model (TTM) was used to determine college presidents' readiness to adopt a policy regulating alcohol consumption during tailgating at college sporting

events. In addition, the use of other prevention strategies universities employ such as a no-re-entry policy, text messaging for problematic fan behavior, the sale of alcohol in the stadium/arena, alcohol-free tailgating areas, and other related initiatives were examined to aid university officials in developing and implementing protective health policies associated with college sporting events.

Methods

Participants. The participants for this study consisted of a census of FBS Division I university presidents. Participants were chosen from the NCAA's list of Division I schools under the Football Bowl Subdivision. All schools that fit the Division I football bowl subdivision criteria were included in this study, which consisted of 130 schools from 11 individual conferences. An individualized breakdown of the conferences and schools can be found in the appendices (Appendix B). In order to be included in the present study, schools had to be classified as full members from one of the following conferences: American Athletic Conference (12 members), Atlantic Coast Conference (15 members), Big Ten Conference (14 members), Big 12 Conference (10 members), Conference USA (14 members), Division I FBS Independents (6 members), Mid-America Conference (12 members), Mountain West Conference (11 members), Pac-12 Conference (12 members), Southeastern Conference (14 members), and the Sun Belt Conference (12 members). Given the scope of the current study, all other entities, including affiliate members, were excluded.

Research Design and Procedures. Researchers utilized a cross-sectional research design to collect self-reported data from Division-I university presidents on their perceptions of regulating alcohol used during college sporting events, including

tailgating. Participants were given a custom survey instrument assessing their level of support for game-day tailgating alcohol policies. Prior to the data collection phase, the university Institutional Review Board (IRB) approved the present study. Subsequently, best practices in survey research were utilized to decrease threats to external validity (Price et al., 2004). A multiple wave mailing procedure was used to enhance the response rate (Dillman, 2009). The first wave consisted of a pre-notification postcard from the director of the Higher Education Center for Alcohol and Other Drug Misuse Prevention and Recovery. The postcard informed university presidents of their inclusion in the present study and to alert them of the survey arriving in one week. The second wave included a personalized, signed cover letter, survey instrument, and a self-addressed return envelope with paid postage. The signed, personalized cover letter was printed on the Higher Education Center for Alcohol and Other Drug Misuse Prevention and Recovery letterhead and described the purpose and importance of the study. Mailing of the third wave occurred approximately two weeks after the first wave to all presidents who did not respond in the first two weeks. The third wave of mailings consisted of the same materials. The fourth wave occurred approximately two weeks after the third wave to non-respondents from the previous wave. The contents of the fourth wave consisted of an email containing a brief overview and an electronic version of the survey. Additionally, three subsequent email waves were sent to non-respondents in order to increase the response rate. Thus, a total of 7 waves were utilized to conduct this study. The data from the questionnaires were entered into IBM Statistical Package for Social Science (SPSS) Version 25 by the lead researcher.

Instrument. For this study, a four-page, 20 item survey instrument was designed and printed on light blue paper to increase the response rate (King, Pealer, & Bernard, 2001). The instrument utilized information acquired from a comprehensive literature review of alcohol use associated with college sporting events, in addition to theoretical constructs from the Health Belief Model (HBM) and the Transtheoretical Model (TTM). Specific constructs included; perceived benefits, perceived barriers, perceived susceptibility, and perceived severity from the HBM (Rosenstock et al., 1988). The TTM was used to assess universities' level of readiness to adopt alcohol policies related to collegiate sporting events, particularly tailgating. To enhance content validity, the survey was critiqued by a variety of experts, including a college health promotion specialist, a theoretical expert, a psychometric expert, and an alcohol and drug researcher.

Measures. To assess the Transtheoretical Model (TTM), the following question was asked: Currently, how would you characterize your campus's involvement in establishing a policy regulating alcohol use during tailgating at college sporting events? (Please select only one response). Response options included: Our institution has not considered implementing a policy regulating alcohol use during tailgating, our institution is considering implementing a policy regulating alcohol use during tailgating, our institution is planning to implement a policy regulating alcohol use during tailgating within the next year, our institution established a policy regulating alcohol use during tailgating within the past year, and our institution established a policy regulating alcohol use during tailgating over a year ago.

The HBM items were measured using a 4-point semantic differential or Likert-type scale. Specific item examples from the survey included the following: Please

identify how much of a barrier each of the following was (or would be) in establishing a campus policy regulating alcohol use during tailgating at your institution (perceived barriers), please identify how much of a benefit each of the following was (or would be) in establishing a campus policy regulating alcohol use during tailgating at your institution (perceived benefits), please indicate how serious each of the following is in regards to alcohol use during tailgating on your campus (perceived severity), and please indicate how likely each of the following is in regards to alcohol use during tailgating on your campus (perceived susceptibility). A reliability analysis was conducted with each of the constructs of the HBM, yielding a Cronbach's Alpha value ranging from 0.887-0.932. Additionally, demographic items were asked with an emphasis on institution characteristics, including conference affiliation, geographic region, and institution size.

Data Analysis. The Statistical Package for the Social Sciences (SPSS) 25.0 for Windows was used to conduct the data analysis. Descriptive statistics were calculated, which included frequencies, percentages, means, and standard deviations to describe the sample population. Pearson correlations were conducted to assess the relationships among constructs of the HBM. A principal components analysis was used to compress the variables and identify the optimal number of components within each construct. Multiple regression analyses were conducted to determine how much of the variance the model accounted for, and the corresponding standardized beta coefficient values were used to determine which of the HBM constructs was most predictive of universities implementing a policy regulating alcohol consumption during tailgating. Missing data were imputed using series mean procedures.

Results

Three categories of participants resulted from this study; the largest portion of participants consisted of senior-level administrators (Presidents/Chancellors/Vice-Presidents) (54.0%; n=32), followed by mid-level administrators (Dean/Department Chair/Directors) (20.3%; n=12), and finally specialists (ATOD experts/Health Promotion Specialist/Wellness coordinators) (15.3%; n=9) (Table 1). Twenty-eight (47.5%; n=28) of the universities had a president serving in their current position for more than five years. Institutions ranged in size; six (10.2%; n=6) were identified as small universities with less than 10,000 undergraduate students, twenty-two (37.3%; n=22) were medium-sized institutions with 10,000-20,000 undergraduate students, and twenty-seven (45.7%; n=27) were large institutions with more than 20,000 undergraduate students. Regarding college football fan attendance, seven (11.9%; n=7) of the institutions drew less than 10,000 fans on game-day, 12 (20.3%; n=12) ranged from 10,000-20,000, and 34 (57.6%; n=34) had attendance greater than 20,000 for home football games.

Regarding general prevention initiatives, the majority (66.1%; n=39) of institutions had a mission or core value statement that contained a health/wellness/well-being statement. Approximately two-thirds (62.7%; n=37) of the institutions completed the federal *biennial review* documenting substance abuse treatment and prevention efforts within the past two years. Over a third (37.3%; n=22) of the universities had an alcohol-related fatality at their institution within the past five years. The vast majority (81.4%; n=48) had a policy banning all tobacco use on campus, including smokeless tobacco and e-cigarettes.

With respect to specific prevention strategies implemented for college sporting events, over two-thirds of universities (66.1%; n=39) had a policy regulating alcohol use during tailgating. Moreover, a small minority (13.5%; n=7) of the respondents indicated their university banned alcohol consumption during tailgating entirely. Approximately half of the universities (52.5%; n=31) indicated they provide an alcohol-free tailgating area for home football games. The majority of institutions (73.2%; n=41) had a no re-entry policy prohibiting fans from re-entering the stadium after they left, and over half of the universities (52.5%; n=31) restricted the promotion of alcohol marketing at sporting events. Over two-thirds of schools (66.1%; n=37) promoted 'safe-ride' transportation services, and half (50%; n=28) had a texting alert system to report problematic fan behavior to authorities. Finally, one-third of the sample (33.3%; n=19) indicated their institution did not sell alcohol in the stadium.

Table 2 shows how presidents and other school officials responded to the Health Belief Model items (barriers, benefits, susceptibility, severity) associated with establishing a campus policy to regulate alcohol use during tailgating. Respondents indicated the *major benefit* of implementing an alcohol-related policy restricting alcohol use during tailgating was minimizing the impact that alcohol use had on others (secondhand effects) (42.9%; n=24), followed by reducing ambiguity concerning alcohol use on campus (33.9%; n=19). Conversely, over two-fifths (43.6%; n=24) of respondents reported lack of alumni support as a *major barrier* to implementing a policy restricting alcohol use during tailgating, followed by enforcement issues (21.8%; n=12). Respondents perceived that underage alcohol consumption (23.6%; n=13) and sexual assaults (16.4%; n=9) were *very serious* (perceived severity) pertaining to the alcohol

consumption associated with college sporting events. Finally, respondents revealed that it was *very likely* (perceived susceptibility) that alcohol use during tailgating would result in underage alcohol consumption (38.2% n=21) and driving under the influence of alcohol after the game (14.5%; n=8).

While 68.4% (n=39) of the universities indicated they had a policy regulating alcohol use during tailgating, fifteen (26.3%) were in the pre-contemplation phase indicating they were not considering implementing a policy, three (5.3%) were in the contemplation phase by indicating they were considering implementing a policy, zero (0.0%) were in the preparation phase by indicating their intention to implement a policy, four (7%) were in the action phase by indicating they had established a policy within the past year, and thirty-five (61.4%) were in the maintenance phase, indicating they had established a policy longer than one year ago.

A principal component analysis was conducted with the 45 survey items. Five components were extracted based on the results using a varimax rotation. Items were regarded as contributing to their component if their loading eigenvalues were greater than 0.40. Five items did not represent a single factor and were loaded on multiple components; thus, they were removed from the analysis. The five components were labeled as: follows perceived barriers, perceived benefits, perceived threat (perceived severity and perceived susceptibility constructs were combined), support for restrictive alcohol policies, and support for alcohol sales. These components represented the independent variables the multiple regression analyses.

Table 3 illustrates the Spearman correlation coefficients (Mukaha, 2012) computed among each of the HBM constructs, support for alcohol sales, and support for

restrictive alcohol policies at the $\alpha < 0.05$ and $\alpha < 0.01$ significance levels. The inter-correlation matrix revealed a statistically significant relationship between the benefits and each of the other constructs. A negligible positive correlation existed between benefits and barriers (0.263), a low positive correlation was found between benefits and perceived threat (0.313), a low positive correlation was present between benefits and support for an alcohol policy (0.354), and a low negative relationship existed between benefits and support for alcohol sales (-0.328). Additionally, a low positive correlation was present between perceived threat and barriers (0.410), and a low negative correlation existed between support for restrictive alcohol policies and support for alcohol sales (-0.347). None of the correlation values exceeded 0.800, thus limiting concerns of multicollinearity (Grace-Martin, 2019).

A multiple regression analysis was used to examine the relationship among the HBM constructs, and support for alcohol policies during college football sporting events and is represented in Table 4. The HBM model variable included perceived benefits, perceived barriers, and perceived threat. Perceived threat included the combination of perceived susceptibility and perceived severity constructs. Perceived benefits was the only construct that was predictive of support for restrictive alcohol policies ($\beta= 0.0132$, $p= 0.004$) and alcohol sales ($\beta= -0.082$, $p=0.018$). Notably, perceived benefits and barriers were inversely related; as the beta value for support for restrictive alcohol policies increased, the beta value for support for alcohol sales decreased. Approximately 11% of the variance in both support for restrictive alcohol policies ($R^2=0.113$, $F(3,55) =3.467$, $p<.01$) and support for alcohol sales polices ($R^2=0.113$, $F(3,55) =3.470$, $p<.05$) was explained by the combined HBM constructs.

Discussion

Event-specific alcohol consumption embodies a time of excessive alcohol consumption, particularly those associated with college sporting events. The purpose of this study was to examine college presidents' perceptions regarding the alcohol policies associated with collegiate football game-day, including tailgating. The HBM was used to assess college presidents' perceived benefits, barriers, and threats regarding implementing prevention-based alcohol policies. Presidents were queried on this topic because they have tremendous influence over university policies. Further, quite often in higher education, senior administrators make high-stakes decisions based on the practices and beliefs of other universities. Thus, the field of college health may benefit from learning the empirical-based beliefs of university presidents rather than speculation.

While this survey was addressed to college presidents, data were not solely representative of college presidents as they were able to delegate the task to someone they deemed appropriate. Thus, three categories of respondents existed, including senior-level administrators, mid-level administrators, and specialists. Notably, the majority of responses originated from senior-level administrators consisting of college or university presidents, chancellors, or vice-presidents. Regarding institutional size, the vast majority of respondents indicated their institution was either medium or large, consisting of 10,000 or more students, and in some instances drawing game-day attendance numbers in excess of 100,000 fans. This is a large number of people on campus, many of which consuming excessive amounts of alcohol for extended periods of time, creating a potentially dangerous environment.

University representatives were asked to provide general information on the prevention practices they implemented. The majority of respondents indicated that their university had a mission statement or core values statement specifically addressing health/wellness (71%), completed a federal *biennial review* within the past two years documenting substance abuse treatment and prevention efforts (66%), and had a policy banning all tobacco use on their campus (86%). While prevention practices were quite common, approximately only a third of the universities surveyed indicated they always enforced policies regulating alcohol use on their campus. Prevention and enforcement efforts may have been tied to alcohol-related fatalities. Indeed, over one-third of the universities acknowledged that an alcohol fatality occurred at their institution within the past five years; whereas, approximately one-quarter were unsure.

Of particular interest, was the existence of policies and strategies universities had in place specific to college sporting events. The TTM was used to assess the universities readiness to change their tailgating policy. While the majority of universities indicated they had a policy regulating alcohol use during tailgating, others were at various stages of the planning process. For schools that did not have policy regulating alcohol consumption during tailgating and had no intention of addressing the issue (i.e., precontemplation stage) campus officials may need information (i.e., "consciousness raising"/awareness) regarding the seriousness of the issue, particularly issues pertaining to liability. Other, *Processes of Change*, should be used to advance schools through the various *Stages of Change* (Prochaska, Redding, & Evers, 2015). Moreover, to motivate schools to change, practitioners should develop discrepancies between the goals and ideals campuses have for student safety and well-being versus what happens in reality on game-day (i.e.,

cognitive dissonance) (Draycott & Dabbs, 1998). Likewise, because an entire institution needs to address game- day safety, rather than an individual, the *Community Readiness Model*, should be used to assess the campus community's level of readiness and determine what can be done to advance the institution through the various stages (Chilenski, Greenberg, & Feinberg, 2007).

Additionally, most of the respondents indicated their university had implemented various alcohol prevention efforts during football games such as provided an alcohol-free tailgating area (55%), implemented a text-alert system to report unruly fan behavior (50), limited the number of alcoholic beverages that could be purchased at one time (82%), restricted the time when alcoholic beverages could be purchased (95%), enacted a no re-entry policy to the stadium (73%), provided a form of "safe-ride" transportation after the game (66%), and restricted the promotion of alcohol marketing at sporting events (56%). Approximately two-thirds of the universities sold alcohol in the stadium or arena, while very few (13%) of the universities had a policy banning all alcohol use while tailgating. It is apparent that universities are addressing alcohol use during college sporting events in a variety of ways.

Respondents provided some noteworthy results concerning the perceived barriers, benefits, and threats to implementing alcohol-related policies on game-day. Lack of alumni support emerged as the most common major barrier, which could be linked to financial/social/political support. Indeed, alumni are key stakeholders because they often promote the university and are asked to make financial contributions. Conversely, minimizing the impact of alcohol use on others (43%) and reducing ambiguity concerning alcohol use on campus (34%) were perceived as major benefits of

implementing a tailgating policy. In other words, university officials value providing clear guidelines about under which circumstances, if any, alcohol can be consumed on game-day, while attempting to minimize the secondhand effects. Underage alcohol consumption was frequently identified by respondents as a likely and serious consequence related to tailgating. Concern over underage drinking may be due to the difficulties with enforcing laws on game-day and the associated liability issues.

The results from the multivariate analysis revealed that the perceived benefits was the only HBM construct predictive of implementing an alcohol policy regulating alcohol consumption during tailgating. This finding is unique because, typically, the perceived barriers construct yields significant results in explaining behavior or, in this case, implementing policy (Skinner, Tiro, & Champion, 2015. 5th ed., pp 75-94). Moreover, as the perceived benefits increased, support for restrictive alcohol policies decreased, conversely as benefits decreased, the endorsement for alcohol sales increased. Thus, to implement a policy regulating alcohol consumption during tailgating at college sporting events, it is more important to promote the benefits of a policy than focusing on barriers or other HBM constructs.

Several noteworthy limitations exist in this study. First, cross-sectional data was utilized; therefore, causal conclusions cannot be made. Second, due to a relatively small sample size, the findings from this study may not be generalizable to other institutions of higher education. Third, as data were self-reported, participants may have provided socially desirable responses. Indeed, presidents and senior administrators are concerned with liability issues and public image and may not want to acknowledge any shortcomings even with a confidential survey. Fourth, the individual taking the survey,

who could have been a presidential designee, may not have known, nor took the time to look up the institution's policies concerning alcohol use during college sporting events; thereby, potentially skewing results. Finally, while the respondents indicated their institutions' policy regarding regulating alcohol use during tailgating, it is possible some institutions were merely following state laws regarding open container and the related laws regarding drinking alcohol in public; consequently, making it difficult to accurately determine the institutions' commitment to this issue.

The present study provides some fundamental information regarding university presidents' perceptions of the alcohol policies associated with college sporting events. Rigorous research designs are necessary to evaluate prevention-related initiatives; thus, financial and political capital is necessary to make progress in this area. Researchers should assess the various alcohol policies implemented during college sporting events and determine the extent to which they influence drinking behavior. Furthermore, examining harm-reduction strategies, such as allowing alcohol to be consumed at certain times and in designated areas, may result in a safer environment rather than ignoring open container laws. While college presidents are an influential population, pivotal information may also be obtained from athletic directors, alumni, and key stakeholders within the broader community. Additionally, due to implications of COVID-19 and other infectious agents, special attention should be given to game-day activities. Individuals are unlikely to engage in social distancing or other precautionary measures, such as wearing a mask while tailgating; thereby increasing the likelihood of an outbreak. Thus, specific policies need to be created to address infectious disease transmission during college sporting events, which promote and protect fans inside and outside the stadium.

The results from this study indicate that the key to passing or modify tailgating policy regulating alcohol consumption is to focus on the benefits of implementing a restrictive alcohol policy. For policies to be effective, they must be properly enforced and reflect citizens' values. Regulating the alcohol use that occurs on college campuses during football game-day rather than disregarding its occurrence is a fundamental first step in advancing prevention efforts. Further, not enforcing existing policies regarding alcohol use (e.g., open container) is confusing to fans and sends mixed messages to students about when it's okay to ignore or break the rules. Regardless of whatever individual policy schools choose to implement, they should be well communicated with students, alumni, and fans in general. Accordingly, school officials should examine their current alcohol policy(s) and make modifications based on safety and the values of its stakeholders.

In conclusion, U.S. college sports, particularly football, are popular events whereby tens-of-thousands of people come to campus to watch their team and to socialize. Many tailgate and drink alcohol in excess, creating a serious public health issue. Addressing alcohol use on college football game-day is imperative to promoting student health and well-being. A variety of empirically-based reports exist, which can help university officials and prevention specialists to design and implement evidence-based interventions. For example, to elicit the support of university presidents the Higher Education Center for Alcohol and Other Drug Abuse and Violence Prevention (1997) seminal publication entitled *Be vocal, Be Visible, and Be Visionary: Recommendation for College and University Presidents on Alcohol and Other Drug Prevention* includes a series of recommendations for addressing substance abuse on campus. In an effort to

make game-day safety a priority, an objective should be added to the substance abuse section of *Healthy Campus 2030* (American College Health Association, 2018), to address this issue. Furthermore, the National Institute on Alcohol Abuse and Alcoholism's (NIAAA) *CollegeAIM* Alcohol Intervention Matrix (2019) delineates individual and environmental strategies to help universities identify effective alcohol interventions. Regardless of the resources utilized, presidents and other university leaders need to take a pro-active stance regarding prevention issues, including during college sports events, because they are ultimately responsible for the safety of students, faculty, staff, and visitors.

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Table 2. *Background and Institutional Information*

Institutional Information	Yes	No	Unsure
Does your institution's mission or core values contain a health/wellness/well-being statement?	39 (70.9%)	15 (27.3%)	1 (1.8%)
Has your institution completed the biennial review documenting substance abuse treatment and prevention efforts within the last two years?	37 (66.1%)	8 (14.3%)	11 (19.6%)
Does your campus have a policy banning all tobacco use (e.g., smokeless tobacco, e-cigarettes)?	48 (85.7%)	6 (10.7%)	2 (3.6%)
Has there been an alcohol-related fatality at your institution within the past five years?	22 (38.6%)	20 (35.1%)	15 (26.3%)
Do your institution's home football games typically sell out?	17 (28.3%)	37 (61.7%)	3 (5%)
Does your institution provide an alcohol-free tailgate area for home games?	31 (55.4%)	21 (37.5%)	4 (7.1%)
Does your institution have a no re-entry policy, prohibiting fans from returning to the stadium/arena, after they leave?	41 (73.2%)	13 (23.2%)	2 (3.6%)
Does your institution have a texting alert system to report problematic fan behavior?	28 (50.0%)	21 (37.5%)	7 (12.5%)
Does your institution have a policy banning alcohol consumption during tailgating?	7 (12.5%)	49 (87.5%)	0 (0.0%)
Does your institution promote "safe-ride" transportation after games?	37 (66.1%)	15 (26.8%)	4 (7.1%)
Does your institution restrict the promotion of alcohol marketing at college sporting events?	31 (56.4%)	19 (34.5%)	5 (9.1%)

Table 2. *Background and Institutional Information Cont.*

Institutional Information	Yes	No	Unsure
Does your institution's mission or core values contain a health/wellness/well-being statement?	37 (62.7%)	19 (33.3%)	1 (1.8%)
Does your institution limit the number of alcoholic beverages a patron may purchase at one time?	33 (82.5%)	2 (5.0%)	5 (12.5%)
Does your institution limit the time when alcoholic beverages are sold?	33 (84.6%)	3 (7.7%)	3 (7.7%)
Does your institution prohibit the sale of alcohol to anyone who appears intoxicated?	38 (95.0%)	1 (2.5%)	1 (2.5%)

Institution Size	Small (<10,000)	Medium (10,000-20,000)	Large (>20,000)
Approximately, how many Bachelor's degree-seeking (full-time or part-time) students attend your institution?	6 (10.9%)	22 (40%)	27 (49.1%)
Approximately, how many Graduate degree-seeking (full-time or part-time) students attend your institution?	44 (83%)	8 (15.1%)	1 (1.9%)
How many fans typically attend a home football game?	7 (13.2%)	12 (22.6%)	34 (64.2%)

Enforcement	Never	Rarely	Sometimes	Often	Always	N/A
To what extent do the university police/security enforce a regulating alcohol consumption during tailgating?	0 (0%)	8 (13.3%)	17 (28.3%)	12 (20%)	18 (30%)	2 (3.3%)

Presidential Experience	Less than 5 years	More than 5 years
Please indicate the number of years the president has served in their position at the current institution:	25 (47.2%)	28 (52.8%)

Table 3. *HBM Frequency Table*

Perceived Barriers	**Not a barrier**	**Minor Barrier**	**Moderate Barrier**	**Major Barrier**
Lack of student body support	35.7% (n=20)	26.8% (n=15)	28.6% (n=16)	8.9% (n=5)
Lack of student leader support	39.3% (n=22)	28.6% (n=16)	21.4% (n=12)	10.7% (n=6)
Lack of faculty support	40.0% (n=22)	32.7% (n=18)	21.8% (n=12)	5.5% (n=3)
Lack of alumni support	29.1% (n=16)	12.7% (n=7)	14.5% (n=8)	43.6% (n=24)
Lack of senior admin support	43.6% (n=24)	25.5% (n=14)	18.2% (n=10)	12.7% (n=7)
Lack of board of trustee support	30.9% (n=17)	27.3% (n=15)	25.5% (n=14)	16.4% (n=9)
Lack of community support	41.1% (n=23)	28.6% (n=16)	17.9% (n=10)	12.5% (n=7)
Lack of financial support	47.2% (n=25)	24.5% (n=13)	22.6% (n=12)	5.7% (n=3)
Competing priorities	25.5% (n=14)	40.0% (n=22)	27.3% (n=15)	7.3% (n=4)
Enforcement issues	20.0% (n=11)	23.6% (n=13)	34.5% (n=19)	21.8% (n=12)
Legal issues	26.8% (n=15)	28.6% (n=16)	30.4% (n=17)	14.3% (n=8)
Physical layout of campus	35.7% (n=20)	30.4% (n=17)	28.6% (n=16)	5.4% (n=3)
Anticipated revenue loss	46.3% (n=25)	27.8% (n=15)	16.7% (n=9)	9.3% (n=5)
Perceived Benefits	**Not a benefit**	**Minor Benefit**	**Moderate Benefit**	**Major Benefit**
Minimize impact of alcohol use on others	7.1% (n=4)	21.4% (n=12)	28.6% (n=16)	42.9% (n=24)
Reduce prevalence of alcohol use on campus	10.9% (n=6)	29.1 (n=16)	34.5% (n=19)	25.5% (n=14)
Decrease student absence	39.3% (n=22)	32.1% (n=18)	19.6% (n=11)	8.9% (n=5)
Reduce insurance claims	24.1% (n=13)	48.1% (n=26)	22.2% (n=12)	5.6% (n=3)
Decrease resources used for property management	10.7% (n=6)	42.9% (n=24)	33.9% (n=19)	12.5% (n=7)
Reduce risk of vandalism on campus	16.1% (n=9)	46.4% (n=26)	25.0% (n=14)	12.5% (n=7)
Allow police to target enforcement	14.3% (n=8)	23.2% (n=13)	41.1% (n=23)	21.4% (n=12)
Reduce ambiguity concerning alcohol use on campus	7.1% (n=4)	26.8% (n=15)	32.1% (n=18)	33.9% (n=19)
Improve reputation of the institution	21.4% (n=12)	33.9% (n=19)	19.6% (n=11)	25.0% (n=14)
Quality of fans' experience at the event	16.4% (n=9)	23.6% (n=13)	36.4% (n=20)	23.6% (n=13)
Perceived Severity	**Not at all serious**	**Somewhat serious**	**Serious**	**Very serious**
Underage alcohol consumption	7.3% (n=4)	49.1% (n=27)	20.0% (n=11)	23.6% (n=13)
Driving under the influence of alcohol	13.0% (n=7)	46.3% (n=25)	25.9% (n=14)	14.8% (n=8)
Unruly fan behavior	27.3% (n=15)	45.5% (n=25)	25.5% (n=14)	1.8% (n=1)
Fan transported to ER for alcohol overdose	45.5% (n=25)	29.1% (n=16)	20.0% (n=11)	5.5% (n=3)
Disorderly conduct/public intoxication	22.2% (n=12)	46.3% (n=25)	24.1% (n=13)	7.4% (n=4)
Arrests/citations	41.1% (n=23)	37.5% (n=21)	17.9% (n=10)	3.6% (n=2)
Vandalism	58.9% (n=33)	30.4% (n=17)	8.9% (n=5)	1.8% (n=1)
Assaults/fights	42.9% (n=24)	39.3% (n=22)	12.5% (n=7)	5.4% (n=3)
Sexual assaults	30.9% (n=17)	32.7% (n=18)	20.0% (n=11)	16.4% (n=9)
Campus appearance	44.6% (n=24)	33.9% (n=19)	17.9% (n=10)	3.6% (n=2)
Campus atmosphere promoting alcohol use	38.2% (n=21)	36.4% (n=20)	20.0% (n=11)	5.5% (n=3)
Perceived Susceptibility	**Very unlikely**	**Unlikely**	**Likely**	**Very Likely**
Underage alcohol consumption	3.6% (n=2)	14.5% (n=8)	43.6% (n=24)	38.2% (n=21)
Driving under the influence of alcohol	5.5% (n=3)	41.8% (n=23)	38.2% (n=21)	14.5% (n=8)
Unruly fan behavior	5.5% (n=3)	43.6% (n=24)	41.8% (n=23)	9.1% (n=5)
Fan transported to ER for alcohol overdose	10.9% (n=6)	67.3% (n=37)	16.4% (n=9)	5.5% (n=3)
Disorderly conduct/public intoxication	5.5% (n=3)	38.2% (n=21)	43.6% (n=24)	12.7% (n=7)
Vandalism	14.3% (n=8)	60.7% (n=34)	19.6% (n=11)	5.4% (n=3)
Assaults/fights	7.1% (n=4)	53.6% (n=30)	30.4% (n=17)	8.9% (n=5)
Sexual assaults	10.9% (N=6)	56.4% (n=31)	27.3% (n=15)	5.5% (n=3)
Campus appearance	10.7% (n=6)	37.5% (n=21)	42.9% (n=24)	8.9% (n=5)
Campus atmosphere promoting alcohol use	7.5% (n=4)	47.2% (n=25)	32.1% (n=17)	13.2% (n=7)

Table 4. *Correlation of HBM composite measures and university presidential agreement*

HBM	Restriction Policy	Support Policy	Barriers	Benefits	Seriousness	Severity	Perc. Threat
Restriction Policy	1						
Support Policy	-0.347**	1					
Barriers	-0.080	0.052	1				
Benefits	0.354**	-0.328*	0.263*	1			
Seriousness	0.215	-0.188	0.364**	0.346**	1		
Severity	-0.085	-0.199	0.386**	0.218	0.669**	1	
Perc. Threat	0.082	-0.211	0.410**	0.313*	0.925**	0.901**	1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Note: Restriction Policy = Total Alcohol Policy Restriction Sum Score, Support Policy = Total Alcohol Policy Support Sum Score, Barriers = Total Barrier Sum Score, Benefits = Total Benefit Sum Score, Seriousness = Total Seriousness Sum Score, Severity = Total Severity Sum Score, Perc Threat = Total Perceived Threat Sum Score.

Table 5. *Multiple Regression Analysis of HBM Constructs*

	Independent Variable	Stand. β	*95% CI*	*t*	*p*	R^2
Support for restrictive alcohol policies	Barriers	-0.200	5.555 to 10.641	-1.458	0.151	0.113
	Benefits	0.132	0.044 to 0.221	2.992	0.004**	
	Perceived Threat	0.008	-0.046 to 0.062	0.290	0.773	
Support for alcohol sales policies	Barriers	0.036	-0.009 to 0.082	1.593	0.117	0.113
	Benefits	-0.082	-0.149 to -0.015	-2.446	0.018*	
	Perceived Threat	-0.029	-0.070 to 0.12	-1.433	0.157	

Note: *indicates the p-value is significant at the 0.05 level (2-tailed),** indicates the p-value is significant at the 0.01 level (2-tailed).

Appendix A: Journal of American College Health Author guidelines

Instructions for authors

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The *Journal of American College Health* provides information related to health in institutions of higher education. The journal publishes articles encompassing many areas of this broad field, including clinical and preventive medicine, environmental and community health and safety, health promotion and education, management and administration, mental health, nursing, pharmacy, and sports medicine.

The *Journal of American College Health* is intended for college health professionals: administrators, health educators, nurses, nurse practitioners, physicians, physician assistants, professors, psychologists, student affairs personnel, and students as peer educators, consumers, and preprofessionals.

The journal publishes (1) scientific or research articles presenting significant new data, insights, or analyses; (2) state-of-the-art reviews; (3) clinical and program notes that describe successful and innovative procedures; and (4) viewpoints, book reviews, and letters to the editor. All content must go through a rigorous peer-review process before being selected for publication.

Types of Articles

Major Articles. Theoretical, scientific, and research manuscripts and reviews will be considered as major articles. The preferred length is 15 to 20 double-spaced pages (4,000–6,000 words), including tables, figures, and references.

Case Reports. The *Journal of American College Health* seeks to publish cases with clinically valuable lessons for college health professionals. Therefore, we encourage submissions that outline cases which present a diagnostic, ethical or management challenge, or that highlight aspects of mechanisms of injury, pharmacology or histopathology that are deemed of particular educational value for college health

professional. These papers are limited in length to 2,000 words (excluding the title page, abstract, acknowledgments, references, tables, and figures). Case Reports may address, but are not limited to: important clinical lessons learned from practice, emerging pathogenesis pertinent to college health, lessons learned from practice, rare conditions, and novel diagnostic criteria or measurement practices.

Brief Reports. Brief Reports may fall into one of two categories: (1) describe new methods, techniques, or topics of general interest to the field of college health or (2) present the results of experiments/investigations that can be concisely reported with up to one table or figure. These papers are limited in length to 2,000 words (excluding the title page, abstract, acknowledgments, references, tables, and figures). Overall, Brief Reports are intended to highlight interesting findings that do not warrant the space required of an original article.

Viewpoint. Viewpoint is a forum for opinions. Topics may be ethical, organizational, social, professional, or economic. Debate on controversial subjects is welcome. Manuscripts vary from 4 to 10 pages (1,000–2,500 words), but we prefer concise presentations. Tables and figures are unnecessary. References should follow the same format as that used in major articles.

Letters to the Editors. Letters to the Editors in response to published articles are also welcome. they should be brief (500–1,000 words), and they may be edited.

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2. Follow the *American Medical Association Manual of Style (AMA)*, 10th edition, in medical and scientific usage. Please consult our guidance on keywords here.

3. Abstract must be no longer than 150 words, be written in AMA format, and include these words as subheadings: Objective, Participants, Methods, Results, and Conclusions. The Participants section must include the month and year in which research was conducted.

4. Text in research articles must be divided into these headings: Methods, Results, and Comment (which must include the subheadings Limitations and Conclusions).

5. Proofread carefully, double-checking all statistics, numbers, symbols, references, and tables. Authors are responsible for the accuracy of all material submitted.

6. Indicate approval of the appropriate institutional review board (IRB) for all studies involving human participants and describe how participants provided informed consent.

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Author listings in references should be formatted as indicated below.

1 author	Smith A.
2 to 6 authors	Smith A, Jones B, Smythe C, Jonesy D, Smitty E, Jonesi F.
7 or more authors	Smith A, Jones B, Smythe Cet al.

Models from US National Library of Medicine (NLM) resources (e.g., MEDLINE, Index Medicus) should be employed for abbreviating journal titles in the reference section. Examples of common reference types appear below.

Journal article	12. Taylor J, Ogilvie BC. A conceptual model of adaptation to retirement among athletes: a meta-analysis. *J Appl Sport Psychol.* 1994;6(1):1–20. doi:10.1080/10413209408406462.
Book	2. Duke JA. *Handbook of Phytochemical Constituents of GRAS Herbs and Other Economic Plants*. Boca Raton, FL: CRC Press; 2001.
Book with titled volume and edition	18. Bowlby J. *Loss: Sadness and Depression.*Vol. 3 of *Attachment and Loss.* 3rd ed. New York, NY: Basic Books; 1982.
Edited book chapter	34. Gordon S, Lavallee D. Career transitions in competitive sport. In: Morris T, Summers J, eds. *Sport Psychology: Theory,*

	Applications and Issues. 2nd ed. Brisbane, Australia: Wiley; 2004:584–610.
Edited book chapter with volume and edition	26. Remael A. Audiovisual translation. In: Gambier Y, van Dooslaer L, eds. *Handbook of Translation Studies*. Vol. 1. 2nd ed. Amsterdam, Netherlands: John Benjamins; 2012:12–17.
Online/Website	8. United States Census Bureau. American housing survey: 2013 detailed tables . United States Census Bureau Web site. http://www.census.gov/newsroom/press-releases/2014/cb14-tps78.html. Published October 16, 2014. Accessed October 21, 2014.
Dissertation/Thesis	26. Allison N. *Bacterial Degradation of Halogenated Aliphatic Acids* [dissertation]. Nottingham, UK: Trent Polytechnic; 1981.
Conference presentation	4. Alfermann D, Gross A. Coping with career termination: it all depends on freedom of choice. Paper presented at: 9th Annual World Congress on Sport Psychology; January 23, 1997; Netanya, Israel.
Paper/Report	55. Grigg W, Moran R, Kuang M. *National Indian Education Study*. Washington DC: National Center for Education Statistics; 2010. NCES publication 2010-462.
Newspaper	22. Protzman, F. Clamor in the East: East Berliners explore land long forbidden. *New York Times*. November 10, 1989:A1, A14.

Patent	67. Pfeifer A, Muhs A, Pihlgren M, Adolfsson O, Van Leuven F, inventors; AC Immune S.A, Katholieke Universiteit Leuven, assignees. Humanized tau antibody. US patent 9,657,091. May 23, 2017.
Computer software with developer	10. Noguera J, Cumby C. *SigmaXL* [computer software]. Version 8.0. Kitchener, Canada: SigmaXL, Inc; 2017.
Computer software without developer	76. *SPSS Amos* [computer software]. Version 22.0. Armonk, NY: IBM; 2013.
Dataset	3. Wang, G-Y, Zhu Z-M, Cui S, Wang J-H. Data from: glucocorticoid induces incoordination between glutamatergic and GABAergic neurons in the amygdala [dataset] . Dryad Digital Repository. https://doi.org/10.5061/dryad.k9q7h. Published August 11, 2017. Accessed December 22, 2017.

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Appendix B

List of Division I FBS Schools

School	Team	City	State	Conference
Boston College	Eagles	Chestnut Hill	Massachusetts	ACC
Clemson	Tigers	Clemson	South Carolina	ACC
Duke	Blue Devils	Durham	North Carolina	ACC
Florida State	Seminoles	Tallahassee	Florida	ACC
Georgia Tech	Yellow Jackets	Atlanta	Georgia	ACC
Louisville	Cardinals	Louisville	Kentucky	ACC
Miami (FL)	Hurricanes	Coral Gables	Florida	ACC
North Carolina	Tar Heels	Chapel Hill	North Carolina	ACC
NC State	Wolfpack	Raleigh	North Carolina	ACC
Pittsburgh	Panthers	Pittsburgh	Pennsylvania	ACC
Syracuse	Orange	Syracuse	New York	ACC
Virginia	Cavaliers	Charlottesville	Virginia	ACC
Virginia Tech	Hokies	Blacksburg	Virginia	ACC
Wake Forest	Demon Deacons	Winston-Salem	North Carolina	ACC
UCF	Knights	Orlando	Florida	American
Cincinnati	Bearcats	Cincinnati	Ohio	American
Connecticut	Huskies	Storrs	Connecticut	American
East Carolina	Pirates	Greenville	North Carolina	American
Houston	Cougars	Houston	Texas	American
Memphis	Tigers	Memphis	Tennessee	American
Navy	Midshipmen	Annapolis	Maryland	American
South Florida	Bulls	Tampa	Florida	American
SMU	Mustangs	University Park	Texas	American
Temple	Owls	Philadelphia	Pennsylvania	American
Tulane	Green Wave	New Orleans	Louisiana	American
Tulsa	Golden Hurricane	Tulsa	Oklahoma	American
Baylor	Bears	Waco	Texas	Big 12
Iowa State	Cyclones	Ames	Iowa	Big 12
Kansas	Jayhawks	Lawrence	Kansas	Big 12
Kansas State	Wildcats	Manhattan	Kansas	Big 12
Oklahoma	Sooners	Norman	Oklahoma	Big 12
Oklahoma State	Cowboys	Stillwater	Oklahoma	Big 12
TCU	Horned Frogs	Fort Worth	Texas	Big 12
Texas	Longhorns	Austin	Texas	Big 12

School	Team	City	State	Conference
Texas Tech	Red Raiders	Lubbock	Texas	Big 12
West Virginia	Mountaineers	Morgantown	West Virginia	Big 12
Illinois	Fighting Illini	Urbana–Champaign	Illinois	Big Ten
Indiana	Hoosiers	Bloomington	Indiana	Big Ten
Iowa	Hawkeyes	Iowa City	Iowa	Big Ten
Maryland	Terrapins	College Park	Maryland	Big Ten
Michigan	Wolverines	Ann Arbor	Michigan	Big Ten
Michigan State	Spartans	East Lansing	Michigan	Big Ten
Minnesota	Golden Gophers	Minneapolis	Minnesota	Big Ten
Nebraska	Cornhuskers	Lincoln	Nebraska	Big Ten
Northwestern	Wildcats	Evanston	Illinois	Big Ten
Ohio State	Buckeyes	Columbus	Ohio	Big Ten
Penn State	Nittany Lions	University Park	Pennsylvania	Big Ten
Purdue	Boilermakers	West Lafayette	Indiana	Big Ten
Rutgers	Scarlet Knights	Piscataway	New Jersey	Big Ten
Wisconsin	Badgers	Madison	Wisconsin	Big Ten
UAB	Blazers	Birmingham	Alabama	C-USA
Charlotte	49ers	Charlotte	North Carolina	C-USA
FIU	Panthers	Miami	Florida	C-USA
Florida Atlantic	Owls	Boca Raton	Florida	C-USA
Louisiana Tech	Bulldogs	Ruston	Louisiana	C-USA
Marshall	Thundering Herd	Huntington	West Virginia	C-USA
Middle Tennessee	Blue Raiders	Murfreesboro	Tennessee	C-USA
North Texas	Mean Green	Denton	Texas	C-USA
Old Dominion	Monarchs	Norfolk	Virginia	C-USA
Rice	Owls	Houston	Texas	C-USA
Southern Miss	Golden Eagles	Hattiesburg	Mississippi	C-USA
UTEP	Miners	El Paso	Texas	C-USA
UTSA	Roadrunners	San Antonio	Texas	C-USA
Western Kentucky	Hilltoppers	Bowling Green	Kentucky	C-USA
Liberty	Flames	Lynchburg	Virginia	FBS Independent

School	Team	City	State	Conference
Army West Point	Black Knights	West Point	New York	Independent
BYU	Cougars	Provo	Utah	Independent
Massachusetts	Minutemen	Amherst	Massachusetts	Independent
New Mexico State	Aggies	Las Cruces	New Mexico	Independent
Notre Dame	Fighting Irish	South Bend	Indiana	Independent
Akron	Zips	Akron	Ohio	MAC
Ball State	Cardinals	Muncie	Indiana	MAC
Bowling Green	Falcons	Bowling Green	Ohio	MAC
Buffalo	Bulls	Buffalo	New York	MAC
Central Michigan	Chippewas	Mount Pleasant	Michigan	MAC
Eastern Michigan	Eagles	Ypsilanti	Michigan	MAC
Kent State	Golden Flashes	Kent	Ohio	MAC
Miami (OH)	RedHawks	Oxford	Ohio	MAC
NIU	Huskies	DeKalb	Illinois	MAC
Ohio	Bobcats	Athens	Ohio	MAC
Toledo	Rockets	Toledo	Ohio	MAC
Western Michigan	Broncos	Kalamazoo	Michigan	MAC
Air Force	Falcons	Colorado Springs	Colorado	Mountain West
Boise State	Broncos	Boise	Idaho	Mountain West
Colorado State	Rams	Fort Collins	Colorado	Mountain West
Fresno State	Bulldogs	Fresno	California	Mountain West
Hawai'i	Rainbow Warriors	Honolulu	Hawai'i	Mountain West
Nevada	Wolf Pack	Reno	Nevada	Mountain West
UNLV	Rebels	Las Vegas	Nevada	Mountain West
New Mexico	Lobos	Albuquerque	New Mexico	Mountain West
San Diego State	Aztecs	San Diego	California	Mountain West
San Jose State	Spartans	San Jose	California	Mountain West
Utah State	Aggies	Logan	Utah	Mountain West
Wyoming	Cowboys	Laramie	Wyoming	Mountain West
Arizona	Wildcats	Tucson	Arizona	Pac-12
Arizona State	Sun Devils	Tempe	Arizona	Pac-12

School	Team	City	State	Conference
California	Golden Bears	Berkeley	California	Pac-12
UCLA	Bruins	Los Angeles	California	Pac-12
Colorado	Buffaloes	Boulder	Colorado	Pac-12
Oregon	Ducks	Eugene	Oregon	Pac-12
Oregon State	Beavers	Corvallis	Oregon	Pac-12
USC	Trojans	Los Angeles	California	Pac-12
Stanford	Cardinal	Stanford	California	Pac-12
Utah	Utes	Salt Lake City	Utah	Pac-12
Washington	Huskies	Seattle	Washington	Pac-12
Washington State	Cougars	Pullman	Washington	Pac-12
Alabama	Crimson Tide	Tuscaloosa	Alabama	SEC
Arkansas	Razorbacks	Fayetteville	Arkansas	SEC
Auburn	Tigers	Auburn	Alabama	SEC
Florida	Gators	Gainesville	Florida	SEC
Georgia	Bulldogs	Athens	Georgia	SEC
Kentucky	Wildcats	Lexington	Kentucky	SEC
LSU	Tigers	Baton Rouge	Louisiana	SEC
Ole Miss	Rebels	Oxford	Mississippi	SEC
Mississippi State	Bulldogs	Starkville	Mississippi	SEC
Missouri	Tigers	Columbia	Missouri	SEC
South Carolina	Gamecocks	Columbia	South Carolina	SEC
Tennessee	Volunteers	Knoxville	Tennessee	SEC
Texas A&M	Aggies	College Station	Texas	SEC
Vanderbilt	Commodores	Nashville	Tennessee	SEC
Appalachian State	Mountaineers	Boone	North Carolina	Sun Belt
Arkansas State	Red Wolves	Jonesboro	Arkansas	Sun Belt
Coastal Carolina	Chanticleers	Conway	South Carolina	Sun Belt
Georgia Southern	Eagles	Statesboro	Georgia	Sun Belt
Georgia State	Panthers	Atlanta	Georgia	Sun Belt
Louisiana-Lafayette	Ragin' Cajuns	Lafayette	Louisiana	Sun Belt
Louisiana-Monroe	Warhawks	Monroe	Louisiana	Sun Belt

School	Team	City	State	Conference
South Alabama	Jaguars	Mobile	Alabama	Sun Belt
Texas State	Bobcats	San Marcos	Texas	Sun Belt
Troy	Trojans	Troy	Alabama	Sun Belt

Appendix C

College President Cover Letter

The University of Toledo
College of Health and Human Services
School of Population Health
2801 W. Bancroft St.
Toledo, OH 43606-3390
V: 419-530-8590
F: 419-530-4759

Date

First Name Last Name

Address Line 1

City, State, Zip

Dear President,

I am a doctoral student at The University of Toledo, working on my dissertation with assistance from the director of The Higher Education Center, Dr. James Lange. The **purpose** of this research is to examine perceptions of college and university presidents concerning the adoption of alcohol regulation policies on game day sporting events. You have been selected as a school participating in the NCAA's Division-I Football Bowl Subdivision to participate in this study.

Enclosed, please find the survey and a postage-paid return envelope. In addition, we will provide you with an executive summary of the research findings. We hope that you will accept it as a token of our appreciation in providing us with important information that will ultimately assist colleges and universities nationwide with prevention efforts. Completion of the enclosed questionnaire should take approximately 10 minutes of your time. We prefer for you to complete the survey rather than a designee, but any information your institution can provide is greatly appreciated.

Responses are **strictly confidential,** and only aggregate data will be reported. Your refusal to participate in this study will involve no penalty or loss of benefits to which you are otherwise entitled and will not affect your relationship with the University of Toledo. The University of Toledo Human Subjects Committee approved this study. If you have questions at any time, you may contact the Principal Investigator, Dr. Tavis Glassman, at (419) 530-2770. If you have questions about your rights as a research participant, please feel free to contact SBE IRB coordinator at (419) 530-3844

We would appreciate it if you could please respond within the next week! Thank you again for your time and professional courtesy.

Sincerely,

Appendix D

Survey Instrument

Campus Tailgating and Alcohol Policies for College Sporting Events

Directions: Please answer the following questions about your campus' alcohol policies concerning college sporting events a.k.a. *Game-Day*. Your responses are confidential; only group data will be reported.

Tailgating on campus can be defined as a social gathering occurring in parking lots prior to, during, or following sporting events and commonly involves the consumption of food and alcoholic beverages among students, faculty, staff, alumni, and fans.

1. Currently, how would you characterize your campus' involvement in establishing a policy regulating alcohol use during tailgating at college sporting events? *(Please select only one response).*

   ____ Our institution has **not considered** implementing a policy regulating alcohol use during tailgating.

   ____ Our institution is **considering** implementing a policy regulating alcohol use during tailgating.

   ____ Our institution is **planning** to implement a policy regulating alcohol use during tailgating **within the next year**.

   ____ Our institution **established** a policy regulating alcohol use during tailgating **within the past year**.

   ____ Our institution **established** a policy regulating alcohol use during tailgating **over a year ago**.

2. Please indicate your level of agreement or disagreement with the following: *(Please check the appropriate box for each item).*

[Beliefs]	Strongly Disagree	Disagree	Agree	Strongly Agree
Drinking alcohol should NOT be permitted during tailgating.				

Campus police should enforce a policy banning alcohol consumption during tailgating.				
Universities should restrict/limit the consumption of alcohol during tailgating to designated areas on campus.				
Universities should restrict/limit the time in which alcohol may be consumed while tailgating on campus.				
Universities should permit the legal sale of alcohol inside the stadium/arena.				
Universities should permit the legal sale of alcohol in designated tailgating areas on campus.				
Campus policies regulating alcohol use during tailgating are becoming the standard for universities.				

3. Please identify how much of a **barrier** each of the following was (or would be) in establishing a campus policy regulating alcohol use during tailgating at your institution: *(Please check the appropriate box for each item).*

[Potential Barriers]	Not a Barrier	Minor Barrier	Moderate Barrier	Major Barrier
Lack of a point person to champion the cause.				
Lack of student body support.				
Lack of student leader(s) support.				
Lack of faculty support.				
Lack of staff support.				
Lack of parent support.				
Lack of alumni support.				
Lack of senior administrative support.				
Lack of board of trustees support.				
Lack of support by human resources.				
Lack of local community support.				
Lack of financial resources.				
Competing priorities.				
Enforcement issues.				
Legal issues.				
Physical layout of the campus.				
Anticipated loss of revenue from fewer fans attending the games.				

Other (please specify):

4. Please identify how much of a **benefit** each of the following was (or would be) in establishing a campus policy regulating alcohol use during tailgating at your institution: *(Please check the appropriate box for each item).*

[Potential Benefits]	Not a Benefit	Minor Benefit	Moderate Benefit	Major Benefit
Minimizes the impact of alcohol use on others.				
Reduces the prevalence of alcohol use on campus.				
Decreases rate of student absences due to sickness.				
Reduces insurance claims.				
Decreases resources used to clean up litter.				
Promotes institutional leadership on health issues.				
Reduces the risk of vandalism on campus.				
Other (please specify):				

5. Please indicate how <u>serious</u> each of the following is in regards to alcohol use during tailgating on your campus: *(Please check the appropriate box for each item).*

[Perceived severity]	Not at all serious	Somewhat serious	Serious	Very serious
Underage alcohol consumption.				
Driving under the influence after the game.				
Unruly fan behavior.				
Fan transported to the ER for alcohol overdose.				
Disorderly conduct/public intoxication.				
Vandalism.				
Assaults/fights.				
Sexual assaults.				
Campus appearance (e.g., litter, vomit, public urination, etc.).				

Campus atmosphere is promoting alcohol use.				

6. Please indicate how <u>likely</u> each of the following is in regards to alcohol use during tailgating on your campus: *(Please check the appropriate box for each item).*

Perceived susceptibility]	Very Unlikely	Unlikely	Likely	Very Likely
Underage alcohol consumption.				
Driving under the influence after the game.				
Unruly fan behavior.				
Fan transported to the ER for alcohol overdose.				
Disorderly conduct/public intoxication.				
Vandalism.				
Assaults/fights.				
Sexual assaults.				
Campus appearance (e.g., litter, vomit, public urination, etc.).				
Campus atmosphere is promoting alcohol use.				

7. Please indicate which of the following the president/chancellor has engaged in at your current institution: *(Please check the appropriate box for each item).*

[Prevention Efforts/Engagement]	Yes	No	Unsure
Ensured school officials collect data on student substance use at least once every two years.			
Appointed a campus-wide task force addressing substance use that includes administrators, faculty, staff, law enforcement, and students.			
Ensured resources are budgeted for substance abuse treatment and prevention efforts.			
Took opportunities to publically speak or write about substance abuse prevention.			
Participated in policy change at the federal, state, or local level regarding substance abuse prevention.			

8. Please indicate which of the following policies exist at your institution: *(Please check the appropriate box for each item).*

[College Sporting Event Policies]	Yes	No	Unsure
Does your institution provide an alcohol-free tailgating area for home football games?			
Does your institution sell alcohol in the stadium/arena?			

Does your institution have a no re-entry policy, prohibiting fans from returning to the stadium/area after they leave?			
Does your institution have a texting alert system to report problematic fan behavior?			
Does your institution have a policy banning or regulating alcohol consumption during tailgating?			
Does your institution promote "safe-ride" transportation after the game?			

9. To what extent do the university police enforce policies regulating alcohol consumption during tailgating?

____ Never ____ Rarely ____ Sometimes ____Often ____ Always ____N/A

Background

10. Does your institution's mission or core values contain a health/wellness/well-being statement?

Yes____ No____ Unsure____

11. Has your institution completed the *biennial review* documenting substance abuse treatment and prevention efforts within the last two years?

Yes____ No____ Unsure____

12. Does your campus have a policy banning all tobacco use?

Yes____ No____ Unsure____

13. Has there been an alcohol-related fatality at your institution within the past five years?

Yes____ No____ Unsure____

14. Approximately, how many Bachelor's degree-seeking (full-time or part-time) students attend your institution?

Number of **bachelor's** students: _____

15. Approximately, how many Graduate degree-seeking (full-time or part-time) students attend your institution?

Number of **graduate** students: _____

16. Which of the following degrees does your institution offer? (*Please check all that apply)*

_____ Bachelor's _____ Master's _____ Specialist _____Doctoral

17. How many fans typically attend a home football game?
Number of **fans**: _____

18. Do your institution's home football games typically sell out? (Please indicated one).
Yes: _____ No: _____ Unsure: _____

19. Please indicate the number of years the president has served at the current institution and previous institutions:
_____ year(s) at **present** institution ____ Unsure

_____ year(s) at **other** institutions ____ Unsure

* Note: If you are not the college president, please identify the title of your position.
Position title:
_____

Please indicate the number years serving in your current position:
_____ year(s) at **present** institution

_____ year(s) at **other** institutions

20. What additional insights can you provide regarding campus tailgating policies regulating alcohol use?

Thank you for your time, your opinions are highly valued!

Appendix E

IRB Approval

300063-UT Approved
01/16/2019 - 01/15/2020

ICF Version Date: 1/16/2019

School of Population Health
2801 W. Bancroft St.
Toledo, Ohio 43606
MS #119
Phone # 419-530-8590
Fax # 419-530-4759

ADULT RESEARCH SUBJECT - INFORMED CONSENT FORM

University Presidents' Perceptions of Alcohol Polices for College Sporting Events

Principal Investigator: Tavis Glassman, Ph.D. Phone: 419-530-2770

Purpose: You are invited to participate in the research project entitled, University Presidents' Perceptions of Alcohol Polices for College Sporting Events which is being conducted at the University of Toledo under the direction of Dr. Tavis Glassman. The purpose of this study is to examine college/university presidents' perceptions of alcohol policies for college sporting events.

Description of Procedures: This research study will take place via online survey questionnaire (SurveyMonkey). The survey should take no longer than 15 minutes to complete. You will be asked to fill out a questionnaire evaluating your perceptions of alcohol policies for college sporting events.

Potential Risks: There are minimal risks to participation in this study, including loss of confidentiality as identifying variables will be collected. However, the results of this study are confidential and only aggregate data will be reported. You could feel mildly anxious by answering questions regarding your views of alcohol policies for college sporting events. In the event that you feel too anxious or upset, you may choose to stop completing this survey at any time.

Potential Benefits: The only direct benefit to you if you participate in this research may be that you will learn about other university's alcohol policies. Others may benefit by learning about the results of this research. Participants who complete this research study will be emailed an executive summary of the findings.

Confidentiality: The researchers will make every effort to prevent anyone who is not on the research team from knowing that you provided this information, or what that information is. Although we will make every effort to protect your confidentiality, there is a low risk that this might be breached. Data will be stored in a secure filing cabinet in a locked office and input into password protected statistical analysis software.

Voluntary Participation: Your refusal to participate in this study will involve no penalty or loss of benefits to which you are otherwise entitled and will not affect your relationship with The University of Toledo. In addition, you may discontinue participation at any time without any penalty or loss of benefits.

Contact Information: Before you decide to accept this invitation to take part in this study, you may ask any questions that you might have. If you have any questions at any time before, during or after your participation you should contact a member of the research team (Tavis Glassman, Ph.D. Phone: 419-530-2770).

If you have questions beyond those answered by the research team or your rights as a research subject or research-related injuries, the Chairperson of the SBE Institutional Review Board may be contacted through the Office of Research on the main campus at (419) 530-2844.

Chapter Four

Conclusions

This chapter provides context for the results of the two studies included within this dissertation. The contents have been divided into the following sections: summary of the study, accepted hypotheses, rejected hypothesis, discussion, recommendations, synthesis of articles, future research, and summary.

Overview and Summary of the Studies

Article 1. The first article was a critical review of the literature on alcohol use associated with tailgating at collegiate sporting events, specifically football. To date, a literature review on this topic has not been published, thereby advancing the knowledge base in this area. The alcohol use associated with collegiate football sporting events, including tailgating, is particularly problematic. The consumption behaviors that occur on game-day fall under the classification of *event-specific drinking*, whereby people typically consume alcohol in greater amounts due to the social circumstances and rituals associated with the occasion (Miller, & Gillentine, 2006; Neighbors, Oster-Aaland, Bergstrom, & Lewis, 2006; Oster-Aaland, & Neighbors, 2007). This behavior occurs by both students and by college football fans in general (e.g., faculty, staff, alumni, supporters of the visiting team, etc.). Thus, the rationale for conducting this critical literature review was to summarize the topics published on this subject, the methods researchers used, including study design, location, target population, psychometrics, measured outcomes, and limitations.

For this critical literature review, the following research questions were investigated:

1. What is the prevalence of alcohol use during college sporting events, and the associated health (e.g., sleep, mental health, and sexual health) and academic consequences (e.g., grade point average (GPA), class attendance, and course withdrawal rates)?
2. Based on traditional research standards (sample selection and size, response rate, survey method, validity [internal & external] and reliability), what level of scientific rigor did the researchers employ when conducting their studies?
3. What gaps in the literature exist concerning alcohol use and related policies associated with college sporting events?

The search techniques used for this systematic literature review included the use of unique inclusion and exclusion criteria, databases, and key terms. Academic Search Complete, PubMed, CINAHL, ERIC, Health Source, Sociological Collection, SocINDEX, APA PsycINFO, MEDLINE, and the search engine Google Scholar were the databases used for this article. Search terms included the following Boolean phrases: (football NOT soccer) AND ("alcohol use" OR drinking OR "alcoholic beverage*") AND ("United States" OR America OR USA OR U.S.) AND (college or university) AND ("game day" OR game-day OR "day of game"). The reference section of each of the articles was also reviewed to identify additional studies to include for the systematic review. The database examination occurred in January 2019.

Articles were included in the analysis if they were published after 2000 and specifically focused on college football game-day activities, including alcohol use during collegiate football sporting events, institutional alcohol policies during college football sporting events, were conducted in the United States, and represent original studies.

While findings from earlier published studies exist, the results are outdated and are not as relevant as more current studies.

Of the fifty-two articles identified in the literature search, thirteen were excluded by the title review (n=13). After abstract review was complete, nine additional articles were eliminated because they were either not relevant, did not include a US population as the study participants, or were not specific to football game-day (n=9). Thus, thirty full-text articles were reviewed, with five being excluded from this study because they were not applicable to this inquiry (n=5). The final number of articles included in the literature review analysis was twenty-five.

In each of the twenty-five studies, the researchers included alcohol use indicators. Thirteen of the studies primarily focused on student alcohol use during football games, in seven of the studies, researchers examined fans drinking behavior during tailgating events, in two of the studies first-year college students knowledge and perceptions of alcohol policies were assessed, in one study researchers investigated the drinking behaviors of underclassmen under the age of 21, one study was conducted on the stadium's alcohol sales policies and the implications on fan behavior, and in another study, researchers reviewed police records following football games to assess the number of alcohol-related incidents related to game-day activities.

Three main research topics emerged from the literature, including the epidemiological trends of alcohol consumption on game-day (fan drinking behaviors, negative consequences, and gender differences), social norms, and policies. The plurality of the literature was conducted on the epidemiological consumption behaviors of tailgaters on collegiate football game-day; specifically, researchers reported on the

prevalence of alcohol use, which occurred during college football sporting events. Overall, the findings indicate that alcohol use during college sporting events was prevalent with many fans drinking in excess (Glassman et al., 2012; Glassman et al., 2007; Hustad et al., 2014; Leavens et al., 2019; Merlo et al., 2011; Neal & Fromme, 2007; Nelson & Wechsler, 2003), many of which could be classified as high-risk drinkers and extreme ritualistic drinkers (Glassman et al., 2012). Fan demographics and the related drinking behaviors were also commonly reported on in the literature with approximately half of all game-day attendees consisting of college students and that males consumed alcohol in greater amounts than females (Champion et al., 2009; Haun et al., 2007; Neal et al., 2007; Nelson et al., 2003). Policies concerning alcohol use during college sporting events and the associated prevention-related activists were examined in only a few of the studies.

In terms of rigor, many of the researchers utilized a cross-sectional method with a convenience sample of campus participants. In only one-third of the studies did the researchers use random sampling techniques (36%). The data collection techniques the researchers used were typically either in-person (paper and pencil)(32%) or online (electronic survey)(36%). In many of the studies, researchers either used or modified a standardized instrument such as CORE Alcohol and Drug Survey®, National College Health Assessment®, or the Harvard College Alcohol Survey®. The majority of the studies were conducted at one location and did not encompass multiple sites or consist of a national sample. Finally, in a substantial number of articles, the authors did not report on reliability and validity measures.

Article 2. The results from the literature review conducted within this dissertation indicate the event-specific drinking associated with college sporting events constitutes a serious public health issue. Further, a gap in the literature was identified in which the opinions of university presidents concerning alcohol policies specific to game-day has not been examined. The Higher Education Center for Alcohol and Other Drug Abuse and Violence Prevention (1997) urges college and university presidents, to be *vocal, visible, and a visionary* regarding alcohol and other drug prevention initiatives, thus surveying them on this subject is an important contribution to the field (Carothers, Coleman, Dawson, Gee, Hines, & Pacheco, 1997).

Thus, the purpose of the current study was to examine NCAA Division I Football Bowl Subdivision (FBS) university presidents' perceptions and attitudes regarding the implementation of alcohol control policies during collegiate football tailgating events. The Transtheoretical Model (TTM) was used to determine university presidents' readiness to adopt a policy regulating alcohol consumption during tailgating at college sporting events. The Health Belief Model (HBM), specifically the perceived benefits, barriers, and threat constructs, were used to assess the feasibility of implementing said policy.

Participants for this study consisted of U.S. Division I, Football Bowl Subdivision (FBS) university presidents or chancellors. Participants were chosen from the NCAA's list of Division I schools under the FBS, consisting of 130 schools from 10 conferences. This population was chosen because these institutions represent the preeminent collegiate football programs in the United States. Included within the FBS are the *Power Five* (Big Ten, Big 12, Atlantic Coast, Pac-12, and Southeastern Conference), the less prominent,

Group of Five (American Athletic, Conference USA, Mid-America, Mountain West, and Sun Belt Conference), and a number of independent schools. To obtain/maintain FBS membership, schools must meet the following requirements: have an average home attendance of at least 15,000, sponsor at least 16 varsity intercollegiate teams, provide at least 200 athletic scholarships (or spend at least $4 million on athletic scholarships) per year, and provide at least 90% of the maximum number of football scholarships, which is currently 85 (NCAA, n.d.).

Research Questions

Research Question 1. What actions are Division-I universities taking to address the alcohol use associated with college sporting events?

Research Question 2. What Stage of Change, within the Trans-Theoretical Model, do college presidents indicate their university is at in establishing an alcohol policy regulating alcohol use during tailgating at college sporting events?

Research Question 3. What are the characteristics of universities, regarding policy regulating alcohol use during tailgating at college sporting events?

Hypothesis 3.1 (H_o): There will be no statistically significant difference in tailgating policy regulating alcohol use by geographical region.

Hypothesis 3.2 (H_o): There will be no statistically significant difference in tailgating policy regulating alcohol use by conference affiliation.

***Hypothesis 3.3 (H_o)*:** There will be no statistically significant difference in tailgating policy regulating alcohol use by having a policy banning tobacco use.

***Hypothesis 3.4 (H_o)*:** There will be no statistically significant difference in tailgating policy regulating alcohol use by years serving as a college president.

***Hypothesis 3.5 (H_o)*:** There will be no statistically significant difference in tailgating policy regulating alcohol use by alcohol-related fatalities.

Hypothesis 3.6 (H_o): There will be no statistically significant difference in tailgating policy regulating alcohol use by university ticket sales (sell out) status for home football games.

Research Question 4*:* Which constructs of the Health Belief Model best predict presidential support for establishing a tailgating policy regulating alcohol consumption during tailgating at college sporting events.

***Hypothesis 4.1 (H_o)*:** The constructs from the HBM (perceived barriers, benefits, threat) will not yield statistically significant results in predicting presidential support for establishing a policy regulating alcohol consumption during tailgating at college sporting events.

Following university internal review board (IRB) approval, self-reported data were obtained using a custom survey instrument designed to assess university presidents' perceptions of regulating alcohol used during college sporting events, explicitly tailgating. Using a traditional four-wave mailing procedure (Dillman, 2009), best practices in survey research were used to limit threats to external validity (Price et al., 2004). Thus, a four-page survey consisting of twenty questions was printed on blue paper and mailed to the office of the president of each of the respected universities. Following the traditional mailing, additional electronic emails were sent to non-respondents in an attempt to increase response rates.

Measures were created based on the constructs from the HBM, including perceived benefits, barriers, severity, and susceptibility. Perceived severity and

susceptibility were combined to create the perceived threat construct. Additionally, the TTM was used to assess each university's current *stage of readiness* to adopt or amend existing alcohol policies related to game-day activities. Analyses were conducted using Statistical Package for the Social Sciences (SPSS), version 25, and assumed a Type 1 error of 0.05. While limited demographic variables were collected to describe the sample population, frequencies, percentages, means, and standard deviations were conducted. A binary logistic regression analysis was conducted to determine if university presidential support for alcohol policies were predictive of the university's stage of readiness. A multiple regression analysis was conducted to determine if each of the constructs from the HBM were predictive of university presidential support for alcohol policies.

Three categories of participants resulted from this study, including senior-level administrators consisting of university presidents (60.4%; n=32), chancellors, or vice-presidents, mid-level administrators consisting of deans, department heads, or directors (22.6%; n=12), and specialists consisting of ATOD experts, health promotion, and wellness coordinators (17.0%; n=9). School size was relatively homogeneous, with many indicating their institution was large in terms of the study body. Many universities attracted anywhere from 20,000 to 100,000 fans on game day.

The TTM was used to assess presidents' readiness to adopt an alcohol policy regulating alcohol use during tailgating at college sporting events. Results from the TTM were dichotomized into two categories, those with and without a policy. The majority of universities had an existing policy regulating alcohol use on their campus (66.1%; n=39). When the stages were examined independently, fifteen were in pre-contemplation

(25.4%; n=15), three were in contemplation (5.1%; n=3), zero were in preparation, four were in action (6.8%; n=4), and thirty-five were in maintenance (59.3%; n=35).

Next, the HBM was used to assess perceived barriers, benefits, and threats. Multiple regression analyses were used to identify which of the HBM's constructs was most predictive of support for restrictive alcohol policies on game-day. Perceived benefits yielded statistically significant results for both restrictive alcohol policies (β= 0.0132, *p*= 0.004), and support for alcohol sales (β= -0.082, *p*=0.018). Notably, these two variables had an inverse relationship, as one beta level increased, the other decreased.

Failed to Reject Hypotheses

Article 1. No hypotheses existed for the literature review.

Article 2. Researchers failed to reject the following null hypotheses.

***Hypothesis 3.3 (H_o)*:** There will be no statistically significant difference in tailgating policy regulating alcohol use by having a policy banning tobacco use.

***Hypothesis 3.4 (H_o)*:** There will be no statistically significant difference in tailgating policy regulating alcohol use by years serving as a college president.

***Hypothesis 3.5 (H_o)*:** There will be no statistically significant difference in tailgating policy regulating alcohol use by alcohol-related fatalities.

Hypothesis 3.6 (H_o): There will be no statistically significant difference in tailgating policy regulating alcohol use by university ticket sales (sell out) status for home football games.

Rejected Hypotheses

Article 1. No hypotheses existed for the literature review.

Article 2. The following null hypotheses were rejected.

***Hypothesis 4.1 (H_o)*:** The constructs from the HBM (perceived barriers, benefits, threat) will not yield statistically significant results in predicting presidential support for establishing a policy regulating alcohol consumption during tailgating at college sporting events.

Discussion

Article 1. The focus of this critical literature review was to examine the existing literature concerning the alcohol consumption associated with collegiate sporting events, specifically football games. Overall, three topical areas arose from the literature, including epidemiological trends in game-day alcohol use epidemiological trends of alcohol consumption on game-day (fan drinking behaviors, negative consequences, and gender differences), social norms, and policies. Regarding the prevalence of alcohol use, several studies revealed that people typically drink more during college sporting events than they would during other social occasions, and in turn, experience more consequences. People who may drink on game day may include students, faculty, staff, alumni, visiting fans from the opposing team, and others. The negative consequences people experience due to their own alcohol consumption, impact not only themselves but others—"secondhand effects." Notably, males were more likely to consume alcohol and in larger amounts than females.

In several of the studies, researchers assessed drinking norms. Often fans, including students, overestimated the amount of alcohol consumption that occurred on game-day; thus, warranting the implementation of social norms marketing interventions to correct misperceptions regarding alcohol use on game-day. Furthermore, in a limited number of studies, researchers assessed the policies surrounding game-day alcohol use,

including designating specific areas for alcohol use during tailgating, and the effects a ban on alcohol sales has on patrons. Publicizing alcohol-related policies, as they relate to sporting events, may prove to be effective in not only reducing alcohol use but may also remove ambiguity regarding fan behavior, thereby positively shifting norms and campus culture.

Throughout the literature, the research methods and study design varied greatly. Many of the studies conducted were exploratory and lacked scientific rigor. Indeed, in approximately one-third of the articles, researchers utilized a convenience sample, thereby limiting the generalizability of the findings. In two-thirds of the studies, researchers employed a cross-sectional design, negating inferences regarding causality. In a number of studies, a relatively small sample was obtained, increasing the likelihood of Type II error. In the majority of articles, self-reported data were collected; thus, potentially introducing social and recall biases into the studies. Much of the research was conducted at a single institution, limiting the external validity of the findings, thus warranting the need for a current national study. Finally, in very few of the studies, did the researchers utilize an experimental design making it difficult to accurately assess the impact of the intervention.

Results from this critical literature review may assist university officials and prevention specialists in several ways. First, the results indicate the alcohol consumption taking place during college sporting events among fans and college students occurs at dangerous levels for the individual and the public at large. Approximately half of the sample restricted alcohol marketing at college sporting events and offered alcohol-free tailgating areas for visitors. The majority of respondents indicated their institution had a

no-reentry stadium policy, prohibiting individuals from leaving and re-entering the stadium. Perhaps, the synthesis of the studies will inspire university leaders to take action to address the high-risk environment associated with college sporting events. More specifically, presidents and other senior administrators should provide the financial and political capital necessary to implement effective interventions. For example, the results of the literature review indicate that some universities sell alcohol at the stadium and permit alcohol use while tailgating at certain locations and time, yet the impact of these policies are not well studied.

University officials need to proactively determine the extent to which they will permit alcohol use on campus during college sporting events and, if so, under what conditions. Conspicuously missing from the literature are studies addressing enforcement issues related to alcohol consumption during college sporting events. Policies work best when they are well promoted and consistently enforced. Students receive mixed messages when alcohol policies are strictly enforced throughout the week but are ignored during home football games. Learning what policies universities are implementing and how they are enforcing them, to mitigate the dangerous alcohol consumption that occurs on game-day would be extremely beneficial; thus, more research is needed to address these gaps in the literature.

As with any type of research, inherent limitations exist; this also is true of literature reviews. First, it is possible that, despite the comprehensive search strategy employed for this study, some relevant articles may have been inadvertently omitted. The likelihood of this occurring was minimized by using a diverse database search strategy, including the use of key terms and Boolean phrases. Second, focusing on a limited area

of research may have left other areas under assessed or unreported. For example, perhaps too much emphasis was placed on alcohol use during football games and not enough on other sporting events. Third, there was a variation in the study population, response rates, campus size, and reliability and validity measures, making it difficult to make definitive conclusions regarding certain findings reported in the literature. Fourth, because of the nature of this inquiry, the inclusion/exclusion criteria omitted studies conducted prior to 2000; thus, trends over time were not assessed. Finally, unpublished studies and interventions undoubtedly exist, thereby limiting conclusions regarding the extent to which universities are addressing this issue.

Article 2. The implementation of alcohol policies at the university level poses unique challenges and opportunities for campus health officials and prevention specialists. Specifically related to college sporting events, by identifying how universities are addressing alcohol consumption, which occurs during tailgating, other universities may adopt and utilize similar strategies. The purpose of this scientific inquiry was to examine university presidents' opinions of restrictive alcohol policies associated with collegiate football events. The decision to survey university presidents was made because presidents are one of the most influential individuals to enact policy change on campus. Moreover, it is the president's duty to implement protective policies on campus that promote the welfare and safety of students and fans.

With reference to prevention initiatives, most universities (68.4%) had a policy regulating alcohol consumption during tailgating; however, approximately one-third did not. Further, when examined by *stage of readiness*, one-quarter of the sample was classified in the pre-contemplation phase as they had not considered implementing an

alcohol-related policy on game-day, and very few were in the contemplation stage. Most of the universities were in the action or maintenance stage of the TTM by indicating they had established an alcohol-related policy for game-day within the past year or longer. This finding is encouraging as it indicates universities are attempting to address this issue, albeit they are at different stages of implementation, and intervention fidelity may also vary.

Regarding perceptions, the benefits construct of the HBM was the only construct that was predictive of support for restricting alcohol consumption during tailgating, as well as for selling alcohol in the stadium. Notably, endorsement for implementing restrictive alcohol policies and for promoting alcohol sales were inversely related; as backing for alcohol restriction increased, the support for alcohol sales decreased. The results from this study are unique because, typically, the barriers construct is the most influential construct in predicting behavior, but in this study, it was not statistically significant. Indeed, the benefits construct was more useful than the barriers construct or other HBM constructs when attempting to explain and predict alcohol policy change concerning college sporting events. Therefore, practitioners should focus on promoting the advantages of implementing restrictive alcohol policies, such as creating a safer atmosphere for bystanders and reducing the ambiguity concerning alcohol policies specific to game-day, among other benefits.

Results from this study may assist university officials in creating a safer environment during college sporting events. Health educators and substance abuse prevention coordinators can use this information to design and implement interventions targeting event-specific alcohol use on campus. In review, the findings from this study

indicate that university presidents are concerned with the health and safety of fans during college sporting events. Markedly, most of the respondents (68%) indicated their university had a policy restricting alcohol use while tailgating. Minimizing the impact of alcohol use on others (43%), and reducing the ambiguity concerning alcohol use on campus (34%) resulted as major benefits to policy implementation. Major barriers included lack of alumni support (44%) and lack of enforcement efforts (22%). The most serious and likely (perceived threat) outcomes of excessive alcohol use during tailgating, included underage alcohol consumption (22%), driving under the influence (15%), and sexual assaults (16%). Also included in this study, were the various prevention techniques universities used to address alcohol-related issues on campus. Foremost, most universities (66%) had a health and wellness statement contained within the university's mission or core value, and many of the universities (63%) had completed their *biennial review* within the last two years, documenting prevention and treatment efforts concerning drug and alcohol issues at their institution. Specific to college sporting events, most universities restricted alcohol marketing at sporting events, and approximately half provided *alcohol-free tailgating* areas to fans. Similarly, most universities (66%) promoted 'safe-ride' transportation services, and half (50%) had a *texting alert* system in place used to report problematic or unruly fan behavior to authorities.

Several noteworthy limitations exist due to the inherent constraints associated with collecting self-reported data and utilizing a cross-sectional research design. Because of the sensitive nature of the survey, questions may have led respondents to underreport, over-report, or experience imperfect recall of their existing policies, rates of substance use, and university characteristics. Second, causal inferences cannot be gleaned from

cross-sectional data analysis. For example, whether the findings from this study are the result of state laws or differences in culture from university to university, is impossible to surmise based on the methods employed for this study. Third, university presidents were not the only ones to complete the survey; therefore, the results and opinions may differ based on the individual who completed the questionnaire. Fourth, the modest sample size (n=59) and response rate (49.5%) pose threats to internal and external validity. Finally, the study was conducted exclusively with institutions from the FBS; thus, the findings may not be generalizable to U.S. universities with smaller sports programs.

Synthesis of the Articles

Both of the studies conducted within this dissertation related to alcohol use during college sporting events. In the first study, within this dissertation, the literature on this topic was reviewed, including a summary of topics published and rigor of the research. Three main topics emerged from the literature, including game-day alcohol epidemiology (fan drinking behaviors, negative consequences, and gender differences), social norms, and policies. Absent from the literature was any information regarding university presidents' opinions about safety issues related to college sporting events, particularly alcohol policies.

Therefore, a cross-sectional study was conducted to examine university presidents' perceptions of regulating the alcohol policies associated with collegiate football sporting events, particularly tailgating. The results revealed that, while most universities had a policy regulating alcohol use on game-day, a substantial portion did not. Further, an inverse relationship existed whereby the benefits associated with restrictive alcohol policies associated with college sporting events increased while the

support for alcohol sales decreased. Additionally, the perceived benefits construct of the HBM was the only construct predictive of support for restrictive alcohol policies on game-day. Typically, with research utilizing the HBM, the barriers construct is most predictive of behavior; however, in the present study, this was not the case. This could be due to psychometric issues within the survey or the utilization of the HBM. Although the survey was designed using best practices and reviewed by content experts, including a theoretical expert, psychometrician, a substance abuse specialist, and a college health expert. Nevertheless, certain questions may have been overlooked, which resulted in various HBM constructs not being statistically significant. Further, data were compressed into factors using a principal component analysis. The factors that emerged from the PCA may not have been solely representative of a single HBM construct. Regardless, when attempting to implement alcohol policies concerning college sporting events, promoting the benefits associated with restrictive alcohol policies such as minimizing the individual harm drinking might have on others (i.e., secondhand effects) and reducing ambiguity regarding alcohol use on campus could prove helpful in implementing and sustaining policy changes. In summary, regarding the synthesis of the two studies, the literature review was used to guide the research questions and purpose for the second study. The second study conducted among university presidents now adds to the body of literature concerning event-specific alcohol usage among college students.

Recommendations for Future Research

Article 1. Findings from the critical literature review provide an overall assessment of the research conducted on alcohol use associated with collegiate football games, also known as game-day. The field would benefit from evaluation research

conducted on existing university alcohol-related policies and interventions. The National Institute on Alcohol Abuse and Alcoholism's (NIAAA) *College Alcohol Intervention Matrix* (CollegeAIM) (2019) provides a guide for selecting and implementing alcohol-related interventions. In particular, this document provides an evolving information base that assists in classifying *individual* and *environmental* strategies that can be used when assessing, selecting, planning, implementing, and evaluating various interventions to address harmful and underage drinking among college students. A nationally convened multi-year collaboration of researchers, AOD officials, and the NIAAA created this framework and continue to update the recommendations based on emerging literature. By utilizing this resource, university officials and prevention specialists can identify the strategies that are most likely to reduce drinking and harmful effects, examine how their current strategies compare to others and identify potential strategies to implement. Thus, researchers should attempt to add to this knowledge base by examining which interventions are most effective in reducing alcohol use and associated negative consequences, specific to college sporting events.

Moreover, multiple research opportunities exist concerning event-specific prevention, particularly college sporting events. For example, a nationwide study assessing drinking rates specific to game-day is a glaring omission from the research. Epidemiological data from such a study would facilitate benchmarking—allowing universities to compare their institution with national standards and prevalence data. Other areas gaps in the literature include a lack of randomized controlled trials, which are needed to rigorously evaluate the efficacy of various interventions. Further, qualitative studies conducted with college football fans, are needed to better understand why people

feel compelled to drink more on game day than they typically would for other social events. Finally, polydrug use, or the use of drugs in conjunction with alcohol, during college sporting events, has not been studied; this is an area ripe for investigation.

Article 2. This study provides information concerning university presidents' perceptions of alcohol-related policies on collegiate football game-day. Data were representative of senior-level administrators, mid-level administrators, and university specialists. With various university representatives completing the survey, it's likely that prevention responsibilities and duties vary from institution to institution, potentially indicating a lack of commitment and/or structure/standardization to prevention efforts. While obtaining information from presidents is imperative, learning about the beliefs of other university personnel pertaining to this issue, such as athletic directors and ATOD coordinators, may prove useful in advancing prevention efforts.

Additionally, even though the HBM was useful in examining this issue, future research could be conducted with other behavioral theories, such as the Integrated Behavioral Model (IBM) or the Social Cognitive Theory (SCT). The IBM could be used to determine university officials' attitudes, norms, control, and self-efficacy regarding implementing protective health policies at college sporting events (Skinner, Tiro, & Champion, 2015. 5th ed., pp 75-94). The Social Cognitive Theory could be utilized to assess outcome expectations regarding alcohol policies as well as the collective efficacy the institution has in remedying this unique public health issue (Bandura, A. 1986).

Conclusion

The results from both studies indicate that alcohol use associated with college sporting events is a serious public health issue. Hopefully, the results of this study will

inspire researchers, practitioners, and university administrators to take action. Researchers should conduct studies evaluating the outcomes of various event-specific prevention strategies associated with game-day. University officials need to proactively address event-specific alcohol use by implementing protective health policies and evidence-based interventions. Finally, the information within this dissertation provides information on how other universities are addressing prevention-related issues associated with college sporting events. By sharing the results of this research, university officials and other campus leaders can gain additional information on how to address this controversial issue.

Chapter Summary

This chapter provides an overview of the major findings reported in studies one and two within this dissertation. A detailed account of the key findings was delineated, and summaries of the hypotheses were provided—a synthesis of how the two studies related to one another were described. Finally, recommendations for researchers and practitioners were offered, followed by opportunities for future research.

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