An Examination of Parents' Influence Strategies on College Students' Dangerous Drinking

by

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ABSTRACT

Dangerous drinking on college campuses is a significant public health issue. Over the last decade, the National Institute on Alcohol Abuse and Alcoholism and the U.S. Department of Health and Human Services have called on universities, community leaders, policymakers, parents and students to work together to develop effective, research based alcohol prevention and/or intervention programs. Despite such calls, parent-based prevention programs are relatively rare on college campuses, and there is a paucity of research on the ways in which parents influence their emerging adult children's drinking behaviors. The present project is designed to help address this need. Grounded in social cognitive theory, this exploratory study focuses on alcohol communication and poses numerous questions regarding the alcohol messages exchanged between college students and their parents, as well as how such messages associate with college students' dangerous drinking.

Undergraduate students ages 18 to 25 who were enrolled in communication classes were recruited for the study and asked to recruit a parent. The sample included 198 students and 188 parents, all of whom completed an online survey. Results indicated the majority of college students have had alcohol conversations with a parent since the student graduated from high school. Parents viewed such conversations as significantly more open, direct, and ongoing than did students; though both generally agreed on the content of their alcohol communication, reporting an emphasis on the negative aspects of drinking,

particularly the dangers of drinking and driving and the academic consequences of too much partying. Frequent discussions of drinking risks had significant, positive associations with students' dangerous drinking, whereas parents' reports of discussing rules about alcohol had a significant negative association with students' alcohol consumption. There were strong significant associations between the types alcohol topics discussed and students' perception that their parents approved of their drinking, as well as parents' actual approval. Perceived approval had a significant, positive association with students' dangerous drinking; however, actual parental approval was not a significant predictor of students' drinking outcomes. Parents' alcohol consumption had a significant positive association with students' alcohol consumption. Implications for parents, public health practitioners, and future research are discussed.

DEDICATION

This dissertation is dedicated, in part, to my family: to my mom, Dana, for teaching me the true meaning of strength and resilience; to my dad, James, for teaching me the true meaning of the vow "in sickness and in health;" to my sister, Adriana, for teaching me dedication and acceptance; to my brother, Tony, for teaching me humility; and to my second sister, Carey, for teaching me grace and perseverance.

Most of all, I dedicate this dissertation to my husband, Robert. I cannot thank you enough for your unwavering patience, kindness, and support. You continued to believe in me long after I stopped believing in myself. Thank you for your love and friendship. Thank you for being my husband.

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An Examination of Parents' Influence Strategies on College Students' Dangerous Drinking

Despite widespread attempts to combat college drinking, excessive alcohol consumption continues to be a pervasive problem on campuses across the country. Studies indicate that approximately 80% of college students drink, and more than 40% of them are heavy drinkers (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2002a; O'Malley & Johnston, 2002; Presley & Pimentel, 2006; U.S. Department of Health and Human Services [USDHHS], 2007; Wechsler, Lee, Kuo, & Lee, 2000). Heavy episodic drinking, sometimes also referred to as binge drinking, occurs when men consume five drinks or more in a sitting, and when women consume four drinks or more in a sitting (Knight, Wechsler, Kuo, Seibring, Weitzman, & Schuckit, 2002; NIAAA, 2007; Wechsler et al., 2000). The more alcohol college students consume, the more likely they are to experience negative consequences related to drinking and/or to inflict those negative consequences on others (Presley & Pimentel, 2006; Wechsler et al., 2000). Such consequences reveal the health, academic, and social costs of college drinking.

Health consequences related to college students' excessive alcohol consumption range from the minor to the severe. The most serious involve death or physical injury. Hingson, Heeren, Winter, and Wechsler (2005) estimated there were more than 1,700 alcohol-related unintentional injury deaths amongst college students in 2001, a 6% increase from 1998. There was also an increase in the

number of college students who reported driving while intoxicated: 2.3 million, or 26.5%, in 1998, to 2.8 million, or 31.4%, in 2001 (Hingson et al., 2005). Additionally, some 500,000 students suffered alcohol-related unintentional injuries, and more than 600,000 were assaulted by a student who had been drinking (Hingson et al.). Sexual assault risks also increase when students consume alcohol excessively (Benson, Gohm, & Gross, 2007; Gidycz, Loh, Lobo, Rich, Lynn, & Pashdag, 2007; Perkins, 2002). Some studies indicate college students are less likely to use a condom when having sex while intoxicated; as such, they increase their risks of sexually transmitted diseases and unwanted pregnancies (Abbey, Saenz, & Buck, 2005; Dye & Upchurch, 2006; Poulson, Eppler, Satterwhite, Wuensch, & Bass, 1998). Other less serious physical health consequences are often the most commonly experienced; they include hangovers, nausea, vomiting, and blackouts (Perkins, 2002; Presley & Pimentel, 2006).

In addition to such health consequences, college students often experience negative social and academic consequences due to excessive drinking. Alcohol is central to the so-called hook-up culture, where young adults engage in casual sexual activity with people they are not committed to romantically; in most hookups, one or both parties are under the influence of alcohol and/or drugs (Littleton, Tabernik, Canales, & Backstrom, 2009; Norval & Marquardt, 2001; Paul & Hayes, 2002; Paul, McManus, & Hayes, 2000; Stepp, 2007). Many college students, especially women, experience shame, regret, confusion and emptiness after hooking up (Littleton et al., 2009; Norval & Marquadt; Paul &

Hayes). Excessive alcohol consumption increases the likelihood that a young woman will agree to unwanted sexual activity with a partner (Davis, George, & Norris, 2004; Flack et al., 2007). Receiving unwanted sexual advances is also a problem for students who do not drink (Lederman & Stewart, 2005; NIAAA, 2002c; Wechsler et al., 2000). Additional "secondhand effects" frequently reported by students who are not heavy drinkers but who live with or near peers who have had too much to drink, include having to take care of an intoxicated friend or roommate, being insulted or assaulted, property damage or vandalism, and being interrupted while sleeping or studying (Lederman & Stewart; NIAAA, 2002c; Wechsler et al., 2000). Academic consequences for those who do drink excessively include missing class, performing poorly on exams, and/or falling behind in classes (Perkins, 2002; Presley & Pimentel, 2006; Wechsler et al., 2000). Given the wide range of negative consequences associated with college drinking, efforts are needed to mitigate college students' alcohol consumption and the problems related to their consumption.

In an attempt to address such problems, the NIAAA issued *A Call to Action: Changing the Culture of Drinking at U.S. Colleges* in 2002, calling on colleges and universities, community leaders, policymakers, parents and students to work together to develop effective prevention and/or intervention programs that are research based. The NIAAA (2002a) advocated a three-in-one approach whereby each intervention targets three groups simultaneously: individual students, especially those who are at risk, the general student body as a whole,

and the larger college community. This three-in-one framework is based on the understanding that problematic drinking amongst college students is influenced by a variety of factors that occur at the individual level, family level, college level, and community level (NIAAA, 2002a). Despite this understanding of the complex etiology and/or epidemiology of college drinking, most current prevention efforts focus either on the individual student, attempting to change his or her knowledge, attitudes, and/or skills (Larimer & Cronce, 2007; NIAAA, 2002c, 2007); or on college students' peers, frequently using the social norms marketing approach to change students' misperceptions regarding how much their peers drink or approve of drinking (Berkowitz, 2004; NIAAA, 2007; Wechsler, Nelson, Lee, Seibring, Lewis & Keeling, 2003). While such prevention efforts often contribute to decreases in college students' alcohol consumption and/or experience of negative consequences, overall results have been mixed, and college drinking continues to be a pervasive problem.

Rationale

The present project is designed to help turn attention to family level influences on college drinking, or more specifically, to turn attention to the role that parents might play in being a protective influence on their college children's drinking behaviors. It is also designed to turn attention to the important role communication plays in parents' influence strategies. As noted by Miller-Day (2005), several scholars have expressed the need for research regarding the "content and style" of substance use communication between parents and their

children (p. 3). As such, this study has two primary goals: (1) to explore the alcohol messages exchanged between college students and their parents, and (2) to examine how such messages associate with college students' alcohol consumption and experience of alcohol-related negative consequences. Such a study is warranted for numerous reasons.

First, involving parents in prevention efforts so that they can help protect their children is part of the goals and strategies discussed in *The Surgeon General's Call to Action to Prevent and Reduce Underage Drinking* (USDHHS, 2007). Second, despite the USDHHS's call for parental involvement in prevention efforts and the NIAAA's (2002a) call for prevention programs that are research based and multi-leveled, parent-based prevention programs are relatively rare on college campuses. Additionally, there is a paucity of research on the most efficacious ways that parents of college children can be involved in such efforts.

One of the few parent-based interventions that does exist at the college level— an intervention focusing on parental knowledge about alcohol and on parent-child alcohol communication— reveals the potential of involving parents. The intervention involves a parenting handbook that informs parents of the pervasiveness of binge drinking on college campuses and the related consequences, offers parents strategies for communicating with their college children about alcohol, and addresses ways parents can teach their teens the skills needed to deal with peer pressure to drink. Two studies evaluating this intervention indicate parents can have an impact on their college students'

drinking. The first study, conducted by Turrisi, Jaccard, Taki, Dunnam, and Grimes (2001), examined the short term effects of the intervention, which was targeted towards parents and their young adult children the summer before the latter were about to start college. Students of parents in the intervention group were compared to a control group sample of students during their first semester of college. The students in the treatment condition consumed significantly fewer drinks, got drunk less often, experienced fewer alcohol-related consequences, and perceived lower levels of peer and parental approval of drinking than did students in the control group. It is also worth noting that the parents involved in the intervention rated the handbook as extremely useful and interesting, and the control group parents "indicated a strong desire to obtain information so they could talk to their teens" (Turisi et al., 2001, p. 370). As such, this study indicates parents are willing to talk to their teens about alcohol and that parent-based preventions can be helpful in the short-term in reducing college students' dangerous drinking.

In a later larger study, Ichiyama, Fairlie, Wood, Turrisi, Francis, Ray and Stanger (2009) compared the impact of the same type of intervention described above (the handbook designed to help parents talk to teens about drinking the summer before the teens started college), to an intervention that simply involved an alcohol fact sheet given to parents as part of their orientation information. Students of parents in both groups were surveyed about their alcohol use the summer before school began and during both the fall and spring semesters of

college. There were no significant differences in the two groups in regards to students' heavy episodic drinking or alcohol-related problems. However, students whose parents received the handbook intervention were significantly less likely than students whose parents received the fact sheet to become drinkers, and women whose parents received the handbook intervention showed significantly less growth over the school year in the typical number of weekly drinks consumed, while male students in the parent-handbook intervention group reported more growth in the number of drinks typically consumed each week than did the male students whose parents were in the alcohol information fact sheet condition. These mixed results, in conjunction with Turrisi et al.'s (2001) study described above, indicate that while parent-student communication based interventions hold promise as elements of a multi-faceted prevention approach, further research is needed to help better understand the ways in which parents influence their college children's drinking behaviors.

When compared to the large body of research involving parents and younger adolescents (e.g., Allen, Donohue, Griffin, Ryan, & Mitchell Turner, 2003; Hawkins, Catalano, & Miller, 1992; Kelley, Comello, & Hunn, 2002; Kumpfer, Olds, Alexander, Zucker, & Gary, 1998), the number of studies regarding parents' influence on college students' alcohol behaviors is relatively sparse; however, an emerging body of literature is showing that parents do in fact impact their college children's drinking. For instance, recent research has shown that when college students believe their parents approve of them drinking (Abar &

Turrisi, 2008; Boyle & Boekeloo, 2006), and when students perceive their same-sex parent as having a permissive parenting style (Patock-Peckham, Cheong, Balhorn, & Nagoshi, 2001; Patock-Peckham & Morgan-Lopez, 2006), the students are more likely to drink dangerously. When parents engage in parental monitoring (Abar & Turrisi; Padilla-Walker, Nelson, Madsen, & Barry, 2008; Sessa, 2005; Walls, Fairlie, & Wood, 2009; Wood, Read, Mitchell, & Brand, 2004), or when college students believe their parents disapprove of them drinking, they are less likely to engage in dangerous drinking (Walls et al.; Wood et al.). Such studies provide empirical justification for investigating parents' impact on college students' drinking, yet much still needs to be learned about this impact.

Communication scholars are poised to provide valuable insights into the ways in which parents might influence their college students' alcohol use. As will be detailed below in the review of the literature, a limitation of extant studies in this area is the failure to examine such influences— most of which are communication based behaviors— from a communication lens. For example, research examining the impact of parental approval on student drinking is often based on the child's perception of his or her parents' attitudes; little is known about what parents actually say or do that causes students to have such perceptions. The studies that do examine how parents go about expressing their approval or disapproval often do not examine the association of such communication with students' drinking outcomes. Research regarding the influence of other aspects of parent-child alcohol communication on students'

drinking— such as discussions about the negative consequences related to alcohol use, encouraging students to make their own judgments, and setting rules and sanctions regarding alcohol use— has yielded equivocal results. As such, the present project can contribute to the current body of knowledge by examining parents influence strategies from a communication perspective, and by investigating how those influence strategies associate with college students' dangerous drinking. In so doing, this study also can help demonstrate the applied value of intersecting family communication scholarship and health communication scholarship.

The final reason this project is warranted regards the practical implications for parents and for health practitioners and college administrators who develop and implement alcohol prevention programming. Despite the media campaigns encouraging parents to talk to their children about alcohol and/or drugs (e.g., The National Youth Anti-Drug Media Campaign, n.d.; The Partnership at Drugfree.org, 2010), many parents need information to improve their ability to communicate about college drinking (Turisi et al., 2001; Miller-Day & Dodd, 2004). A related issue is that such media campaigns often advocate general parent-child communication on the topic of substance use without specifying the type of message parents should express (Stephenson & Quick, 2005). It is reasonable to argue that telling a college student to use his or her own judgment when it comes to drinking might have a different impact than telling the student that alcohol use is forbidden, which could have a different impact than offering

the student tips on how to drink in moderation. A better understanding of the content of parent-student alcohol communication, and how such content associates with college students' drinking behaviors, could be applied to parents' everyday interactions with their college children. This furthered understanding also could allow for more effective and/or more targeted prevention programming geared specifically towards parents.

The present study focuses on the alcohol messages exchanged between college students and their parents. Drawing on social learning theory, which is a useful framework for studies examining the intersection between health behaviors and parent-child interactions (Kunkel, Hummert, & Dennis, 2006; Miller-Day, 2002), and building on previous empirical work regarding substance use communication between college students and their parents, this project explores several research questions. It examines the extent to which students and parents perceive they have engaged in alcohol communication, the specific alcohol topics students and parents have discussed, the differences between parents' perceptions and students' perceptions of their alcohol communication content and frequency, and the relationship between parent-student alcohol communication and parental approval— both perceived approval and actual approval— of their student drinking. The present study also investigates the relationship between college students' dangerous drinking and the content and frequency of parent-student alcohol communication, the relationship between students' dangerous drinking

and perceived and actual parental approval, and the relationship between students' dangerous drinking and parents' drinking.

In the following section, a review of the relevant literature is provided. First, dangerous drinking will be defined. Second, the non-parental factors associated with college drinking will be summarized. Such factors include individual variables, college environment variables, and peer and social influences. Third, a synthesis of extant research regarding the parenting factors associated with college students' dangerous drinking will be provided, with particular emphasis on parenting behaviors and attitudes that specifically target students' substance use. The literature review concludes with a description of social learning theory. This study turns now to an explanation of the key terms and measurement related to college students' alcohol use.

Defining Dangerous Drinking

The college drinking literature uses a variety of terms to label student's heavy alcohol consumption, including "binge drinking" (NIAAA, 2007; USDHHS, 2007; Wechsler et al., 2000), "problem drinking" (Ham & Hope, 2003), "heavy episodic drinking" (Knight et al., 2002; Wechsler et al., 2000), "heavy drinking" (O'Malley & Johnston, 2002; Presley & Pimentel, 2006), "high-risk drinking" (Carey, 1995), and "dangerous drinking" (Lederman & Stewart, 2005). Most of these terms are based on the quantity and/or frequency with which college students consumed alcohol during the two weeks prior to being surveyed.

The NIAAA National Advisory Council defines binge drinking and/or heavy episodic drinking as follows:

> A "binge" is a pattern of drinking alcohol that brings blood alcohol concentration (BAC) to 0.08 gram-percent or above. For a typical adult, this pattern corresponds to consuming 5 or more drinks (male), or 4 or more drinks (female), in about 2 hours. (NIAAA, 2007, p. 2)

The gender specific five/four drinks per sitting criterion, and the non-gender specific five drinks per sitting criterion, are both widely used in the college drinking literature as an indicator of problem drinking. However, neither they nor the use of the term binge drinking are without critics.

Critiques of the Five/Four Criterion

Some critics believe the five/four drinks cut off is too conservative and should be increased, arguing that this level of alcohol consumption might not be the best predictor of negative consequences, and/or that this level of consumption is normative amongst college students and should not be labeled as deviant (e.g., Jackson, 2008; Perkins, DeJong, & Linkenbach, 2001). However, those in support of the five/four criterion argue that once students reach and surpass the five/four level of alcohol consumption, they are significantly more likely to experience harmful consequences associated with their drinking (Weschler et al., 2000; Wechsler & Nelson, 2001). For instance, in their nationwide study involving almost 18,000 undergraduate students, Presley and Pimentel (2006) found that nonheavy drinkers, or male and female drinkers who consumed less than five drinks per sitting, averaged four negative alcohol-related consequences

over the previous year, whereas heavy drinkers, those who consumed five or more drinkers in a sitting, averaged twelve such consequences. Additionally, Knight et al. (2002) found that students who engaged in binge drinking (based on the gender specific five/four cut off) were more likely to suffer from alcohol disorders such as abuse or dependence.

In connection with this debate, Presley and Pimentel (2006) stress the importance of considering not just the occurrence of heavy drinking, but also the frequency of heavy drinking. Presley and Pimentel argue that "the criteria of using a combined measure of quantity and frequency more clearly differentiate between 'social drinking' and drinking habits that are more dangerous" (p. 325). The numeric cutoff for frequent heavy episodic drinking has varied somewhat in the literature. For instance, Presley and Pimentel labeled a student as a "heavy and frequent drinker" if she or he drank at least three times a week (p. 324). This was in slight contrast with Wechsler et al. (2000), who defined "frequent binge drinkers" as college students who engaged in binge drinking at least three times over a two week period, and "occasional binge drinkers" as those whose binge drinking was limited to one or two times over a two week period (pp. 200-201). Knight et al (2002) made the same differentiation, but used the terms "frequent heavy episodic drinkers" and "occasional heavy episodic drinkers" (p. 265). The NIAAA's (2002a) definition of frequent heavy consumption is the same as Weschler et al. (2000) and Knight et al.'s (2002) definition.

In addition to the quantity and frequency of alcohol consumption, it is important to consider the consequences experienced as a result of one's drinking (Ham & Hope, 2003; Lederman & Stewart, 2005; Presley & Pimentel, 2006). In their study, Presley and Pimentel found that students who were classified as both heavy and frequent drinkers averaged 28 negative consequences over the previous year, compared to the twelve average consequences experienced by heavy drinkers. Repeated experience of such consequences, along with frequent and/or pervasive drinking in spite of those consequences, is in line with the American Psychiatric Association's (2000) *Diagnostic and Statistical Manual of Mental Disorders'* (DSM-IV) definition of substance abuse; as such, Presley and Pimentel claim, using a combined measure of both frequency and quantity to determine problematic college drinking is more consistent with clinicians' considerations in their diagnoses of alcohol disorders. Presley and Pimentel's added emphases on the consequences of heavy drinking, and on the frequency with which heavy drinking occurs, are consistent with Ham and Hope's call for researchers to take into account both negative consequences and the degrees of consumption that include both quantity and frequency. The debate over how to measure college students' heavy drinking has often occurred hand in hand with the debate over what to call it.

Critiques of the Term

Since Wechsler and Isaac (1992) used the term binge drinking in their study involving Massachusetts colleges in the early 1990s, the word binge has

been widely used in both the scholarly literature and the mainstream media (Wechsler & Nelson, 2001). Despite its widespread use, some have criticized application of the word to college students' drinking (e.g., Lederman, Stewart, Laitman, Goodhart, & Powell, 2000; Perkins et al., 2001). Many students, including those who meet the five/four drink criterion, do not label themselves as binge drinkers, nor do they consider such consumption problematic (Lederman & Stewart, 2005; Lederman et al., 2000). Instead, many college students believe that the frequency with which they consume alcohol (i.e., drinking on a daily basis) and/or the consequences they experience are more indicative of a problem (Lederman & Stewart; Lederman et al.). In addition to college students, some clinicians object to the word "binge" because, as Wechsler and Nelson (2001) explained, the word was traditionally used "to refer to the drinking behavior of a person in the chronic phase of alcoholism, for whom a drinking binge is a prolonged period of intoxication or excessive heavy drinking that can last for days or weeks (Jellenek, 1952)" (p. 287). Wechsler and Nelson went on to argue that binge is commonly used in broader terms to describe excessive behavior, be it excessive behavior that occurs over weeks, days, or hours, and is therefore an appropriate label for many college students' alcohol consumption.

Dangerous Drinking versus Alcohol Dependence and Alcohol Abuse

It is important to note that whether the behavior is called binge drinking, dangerous drinking, or heavy episodic drinking, such alcohol consumption amongst college students does not necessarily equate with alcohol abuse or

alcohol dependence. According to the DSM-IV TR, dependence involves "a cluster of cognitive, behavioral, and psychological symptoms indicating that the individual continues use of the substance despite significant substance-related problems. There is a pattern of repeated self-administration that can result in tolerance, withdrawal, and compulsive drug-taking behavior" (American Psychiatric Association, 2000, p. 192). Alcohol abuse does not involve tolerance or withdrawal. According to the DSM-IV TR, abuse involves the repeated use of a substance in the face of repeated negative consequences— consequences such as legal problems, social problems, and failing to meet one's obligations at home, at work, and/or at school. Continuing to drink alcohol when it is a health hazard to do so, such as when one is taking medication or about to drive a vehicle, could also be an indication of alcohol abuse. Both alcohol abuse and dependence are evident in college student populations. According to the USDHHS (2007), 18 to 20 year olds have the highest rate of alcohol dependence in the country. In their nationwide study involving more than 14 thousand college students, Knight et al. (2002) found that 6.3% of college drinkers met the criteria for alcohol dependence, and 31.6% met the diagnostic criteria for alcohol abuse. Such findings underscore the severity of the college drinking problem. However, alcohol dependence and/or abuse are not the focus of the present study.

Terms Employed in the Present Study

The present project employs the term dangerous drinking, which, according to Lederman and Stewart (2005), occurs when "college students

consume unhealthy quantities of alcohol (particularly in social situations) that can lead to negative consequences for themselves or for others (Lederman et al., 1998)" (p. 5). Lederman and Stewart's conceptualization of dangerous drinking is consistent with calls from other researchers to consider negative consequences, as well as the quantity and frequency of consumption (Ham & Hope, 2003; Presley & Pimentel, 2006). In this study, dangerous drinking will be determined by both alcohol consumption and negative consequences— both of which are investigated as outcome variables. Alcohol consumption will be measured with an item asking about the frequency of participants' heavy episodic drinking over the previous two weeks. This heavy episodic drinking item will be gender specific, utilizing the five/four drink criterion that is used in much of the college drinking literature (Knight et al., 2002; NIAAA, 2007; Weschler et al., 2000). Participants also will be asked about the frequency of their consumption over the previous month, and the average number of drinks they consume weekly. Negative consequences will be determined by the frequency with which students experience problems associated with their drinking, be they health, social, and/or academic problems. For readability purposes, the phrase problem drinking will occasionally be used interchangeably with dangerous drinking. Now that dangerous drinking has been defined, this review will summarize the extant literature regarding the factors associated with college students' dangerous drinking.

Factors Associated with College Students' Dangerous Drinking

College drinking is a complex phenomenon that is influenced by a wide range of factors. Before turning to an in-depth analysis of the current research regarding parents' influences on college students' alcohol behaviors, this review will summarize individual factors associated with dangerous drinking amongst college students, followed by college environment factors, and peer and social influences. A summary of non-parental influences on students' drinking is necessary, as it will provide justification for the use of certain control variables in the statistical analyses employed in the present study; additionally, it helps establish the larger context in which dangerous drinking occurs. This review of the research turns now to individual factors associated with college drinking, including demographic variables, personality traits, drinking motives and expectancies, and drinking in high school.

Individual Factors

Demographic variables

Of the demographic variables, both gender and race or ethnicity have been widely examined. Numerous studies have shown that male college students tend to drink more than female students in terms of both quantity and frequency (Campo, Brossard, & Frazier, 2003; Ham & Hope, 2003; O'Malley & Johnston, 2002; Wechsler et al., 2000; Yanovitzky, Stewart, & Lederman, 2006). When it comes to experiencing alcohol-related negative consequences, the research is less consistent. For instance, Read, Wood, Davidoff, McLacken, and Campbell (2002)

found that male students experience more negative consequences than do female students. However, Presley and Pimentel (2006) found that "as drinking increases, women experience negative consequences on twice as many indicators, compared with men," consequences that include academic, social and physical health problems (p. 329). Perkins (2002) posited that women experience more private negative consequences, such as feeling hung over, performing poorly academically, or engaging in unplanned sexual activity; whereas men experience more public consequences, such as getting into a fight or damaging someone's property. In terms of race and ethnicity, studies have consistently shown that Caucasian students are the heaviest drinkers, followed by Hispanic American students, and African-American and Asian students (Campo et al., 2003; Ham & Hope; O'Malley & Johnston; Wechsler et al., 2000; Yanovitzky et al., 2006). As such, when examining parent based predictors of college students' dangerous drinking, the present study will control for student sex and race or ethnicity.

Personality traits

Personality traits associated with college drinking include sensation seeking and neuroticism (Ham & Hope, 2003). In their comprehensive review of the psychosocial influences on students' problem drinking, Ham and Hope concluded that high sensation seekers, especially high male sensation seekers, are more likely to engage in dangerous drinking than low sensation seekers. Their conclusion regarding sensation seeking, which is also sometimes referred to as impulsivity, is consistent with Baer's (2002) review of the college drinking

literature as well. The studies examining neuroticism and/or anxiety have been somewhat less consistent, finding both positive and negative associations with heavy college drinking (Baer; Ham & Hope).

Motives and expectancies

Drinking motives, or the reasons people say they drink, have been found to be strong predictors of students' heavy consumption and experience of negative consequences (Ham & Hope, 2003; Read, Wood, Kahler, Maddock, & Palfai, 2003). The primary motives that have been investigated in the college drinking literature are enhancement motives (creating or enhancing a positive affective state), coping or tension reduction motives (avoiding or decreasing a negative internal state), and social motives. In their review, Ham and Hope concluded that enhancement motives were associated with high levels of alcohol consumption and alcohol-related consequences, that coping motives were connected to problem drinking, especially for women, and that "social motives were the only motives that were associated with nonproblematic drinking" (p. 739). Their conclusions were consistent with Baer's (2002) review, which suggested that coping motives had a stronger association with problem drinking than did social motives. However, two studies not included in these reviews indicate the relationships between drinking motives and college students' drinking, particularly social motives, might be more complex than Ham and Hope or Baer suggested.

LaBrie, Hummer, and Pedersen (2007) found that, compared to tension reduction motives and enhancement motives, most students said they drank for

social reasons. Social camaraderie motives were associated with heavy episodic drinking, whereas tension reduction and mood enhancement motives were not. Generally, all three motives were associated with negative consequences, though specific relationships depended on the particular sub-sample involved. La Brie et al.'s results conflict with those obtained by Read et al. (2003) in a study involving both a cross-sectional and longitudinal analysis. Read et al. found that, overall, social reinforcement motives were not a significant predictor of alcohol use or problems. However, there was overlap, both statistically and conceptually, between social reinforcement motives and enhancement motives, the latter of which predicted alcohol use and problems in the cross-sectional analysis, as well as alcohol use in one of two models in the longitudinal analysis. Read et al. also found that in their cross-sectional study, there was a significant relationship between coping motives and alcohol problems but not alcohol consumption; yet in their longitudinal study, coping motives failed to predict either one.

Overall, the equivocal results in regards to drinking motives are likely due, in part, to the employment of different instruments to measure motives and alcohol outcomes, as well as different groups of participants, and the use of cross-sectional versus longitudinal designs. The association between drinking motives and dangerous drinking might be further clouded by the role of alcohol expectancies or beliefs. Some alcohol expectancies, such as social lubrication and tension reduction, have been found to predict multiple drinking motives (Read et al., 2003). Reviews of the college drinking literature suggest that, aside from the

consistent relationships that have been found between overall positive expectations regarding alcohol use and problem drinking, different types of expectancies are related to problem drinking in different ways for different populations (Baer, 2002; Hope & Ham, 2003).

Research does suggest that parents can influence their late adolescents' expectations or beliefs about alcohol. For instance, Turrisi, Wiersma, and Hughes (2000) found that numerous mother-child alcohol communication topics had a significant and negative relationship with first year college students' beliefs that alcohol could "make positive transformations" and facilitate social interactions, as well as students' approval of college drinking (p. 350). There was also a significant positive association between several mother-teen alcohol communication topics and students' belief in the negative effects of alcohol use. Talk about "how alcohol only gets in the way of making true friends" and of "how drinking only makes problems worse, not better" had the most consistent associations with students' alcohol beliefs (p. 350). Turrisi et al.'s study suggests such communication could be a protective factor, since college students positive beliefs about alcohol consumption were significantly associated with the experience of more negative drinking consequences. The parent-student alcohol communication survey employed for the present project drew heavily from Boyle and Boekeloo's (2009) Alcohol Based Parent-Teen Communication Scale, which was based on Turrisi et al.'s measure of mother-teen communication.

Past drinking behaviors

Studies have found that students who were heavy drinkers in high school are more likely to be heavy drinkers in college (Ham & Hope, 2003; NIAAA 2007; Wechsler et al., 2000). More specifically, Knight et al. (2002) found that "Those who engaged in heavy drinking while in high school or had gotten drunk for the first time before age 16 were more likely to be diagnosed with alcohol abuse or dependence" (p. 267). Given the stereotypical image of college being one big party (Lederman & Stewart, 2005), one might speculate that heavy high school drinkers had a proclivity for college life (O'Malley & Johnston, 2002). However, in their examination of longitudinal data, O'Malley and Johnston found that high school seniors who later went on to be college students had lower heavy drinking rates than those who did not go on to be college students; additionally, while both groups were likely to have higher odds of becoming heavy drinkers after graduating from high school, "the college students increase distinctly more and actually surpass their nonstudent age-mates" (p. 37). This suggests there is something about the college environment that is related to the heavy alcohol consumption so prevalent amongst college students (O'Malley & Johnston).

College Environmental Factors

Various aspects of the college environment are believed to contribute to the prevalence of dangerous drinking amongst students. These include living in residence halls as opposed to living off campus (Ham & Hope, 2003; NIAAA, 2002a, 2002b; O'Malley & Johnston, 2002; Sessa, 2005), being a first year

student (Ham & Hope; Lederman & Stewart, 2005), having a great deal of freedom and unstructured time (Lederman & Stewart; NIAAA, 2002b), alcohol advertising geared towards college students (NIAAA, 2002b, 2002c), and frequent participation in drinking games, which are a relatively inexpensive source of entertainment for students (Ham & Hope; NIAAA, 2002b). Participation in certain college organizations or activities seems to put college students at greater risk of dangerous drinking—especially athletic and Greek organizations.

College student athletes tend to drink more and experience more alcohol-related negative consequences than do non-athletes (Baer, 2002; Ham & Hope, 2003; Knight et al., 2002; Turrisi, Mallett, Mastroleo, & Larimer, 2006). Additionally, research consistently shows that members of fraternities and sororities consume more alcohol more frequently, and experience more alcohol-related negative consequences, than do college students who are not members of the Greek system (Baer; Ham & Hope; Turrisi et al., 2006; Wechsler et al. 2000). In comparing the drinking behaviors of members of Greek organizations with members of athletic organizations, Meilman, Leichliter and Presley (1999) found that rates of heavy episodic drinking, average weekly consumption, and negative consequences were highest for Greek athletes, followed by Greek non-athletes, followed by non-Greek athletes. Students who were neither involved in athletics nor in a fraternity or sorority had the lowest rates of binge drinking, weekly consumption, and negative consequences.

Some scholars have suggested that a self-selection process is most likely related to the high levels of dangerous drinking in the Greek system and athletic organizations (Baer, 2002; Turrisi et al., 2006). The argument is that young adults, especially men, who gravitate towards alcohol tend to gravitate towards Greek organizations and athletic groups. Additionally socialization processes in these organizations, including high perceptions of what constitutes normative drinking, are probably at play (Baer; Sher, Bartholow, & Nanda, 2001; Turrisi et al.). Given the particularly strong prevalence of dangerous drinking in Greek organizations (Larimer, Turner, Mallett, & Geisner, 2004; Meilman et al., 1999; NIAAA, 2002b), the present study controls for membership in fraternities and sororities when examining students' drinking behaviors as outcome variables.

Peer and Social Influences

Overview of peer influences

Whether it is fellow students on campus whom one does not know, or close friends with whom one interacts regularly, college students' drinking behaviors can be impacted by their peers. In their review of the literature regarding peer influences, Borsari and Carey (2001) explained that college students often encourage their peers to consume alcohol both directly, as in offering to buy someone a drink or pressuring him or her to play drinking games, and indirectly, through modeling and social norms. The limited research regarding direct influences suggests they are positively associated with college students' alcohol use (Borsari & Carey). Generally, modeling studies indicate that students

tend to imitate their drinking companions, drinking more when they are with heavy drinkers than when they are with light drinkers or without a drinking model altogether (Borsari & Carey). However, as Borsari and Carey pointed out, much of the modeling research suffers from a variety of external validity problems and is somewhat dated. Instead of modeling, more recent research regarding peers' indirect influences on college students' drinking has tended to focus on social norms.

Social norms

The social norms approach to college drinking offers a theoretical explanation as to how students indirectly encourage their peers to drink excessively, as well as a way to address the problem through the use of social norms marketing campaigns (Berkowitz, 2004; Perkins & Berkowitz, 1986). The social norms approach is based on three main assumptions: (1) most college students overestimate their peers' dangerous drinking (descriptive norms) and/or their peers' approval of such drinking (injunctive norms); (2) such inflated norms perceptions can influence students' own drinking behaviors as they try to live up to a misperceived norm; and (3) correcting those norms with actual, healthier norms will lead to a decrease in students' dangerous drinking (Berkowitz, 2004; Borsari & Carey, 2001, 2003; Rimal & Real, 2003). Many studies support this first assumption. In terms of descriptive norms college students, especially women, typically overestimate their peers' alcohol consumption (Borsari & Carey, 2003; Perkins, Haines, & Rice, 2005; Perkins, Mielman, Leichliter,

Cashin, & Presley, 1999). In terms of injunctive norms many studies have also found that college students, especially women, overestimate the degree to which their peers are accepting of alcohol use (Borsari & Carey, 2003).

Research findings regarding the second and third assumptions of the social norms approach have been less consistent. Some studies have failed to find a significant relationship between college students' misperceived norms and students' alcohol consumption, whereas other studies have found a positive relationship between the two, especially when the peers are friends, as opposed to more general or distal peer groups (Berkowitz, 2004, 2005; Borsari & Carey, 2001, 2003; Campo et al., 2003; Rimal & Real, 2003; Yanovitzky et al., 2006). Additionally, while studies indicate many social norms interventions have successfully decreased alcohol consumption on campuses, other social norms interventions have failed to do so (Berkowitz, 2004; Haines & Barker, 2003; Perkins, 2003; Perkins & Craig, 2003, 2006; Thombs, Dotterer, Olds, Sharp, & Raub, 2004; Wechsler et al., 2003).

Socially situated experiential learning

Social norms also play a role in a communication based explanation of social influences on college students' drinking: Lederman and Stewart's (2005) socially situated experiential learning (SSEL). SSEL is "the experience-based process of acquiring and interpreting social information (and misinformation) received from peers and other sources with in the context of their direct learning experiences" (p. 28). Friends, other students, college faculty and administration,

parents, policy makers and the media all serve as sources of information about college students' alcohol use. When friends share stories about their drinking exploits, when professors make jokes in class about students being hung over during a Friday morning class, when parents assume their college children will drink, and when the media depict college as nothing but one big party, they all help create and/or reinforce a shared expectation that college students consume alcohol excessively. This socially constructed expectation makes up what Lederman and Stewart call the *culture of college drinking*, which they define as "the shared images, behaviors, attitudes, and perceptions that create a culturally specific sense that drinking heavily in college is in inherent and inevitable part of the college years" (p. 27). Heavy drinking is viewed as a normal, non-problematic aspect of college life.

Through the SSEL model and concepts like the culture of college drinking, Lederman and Stewart (2005) suggest that changing the way students (and those whom students interact with) talk about drinking might help change the culture of college drinking and the norms associated with it. Both concepts underscore the important role that alcohol plays in many students' social lives. As indicated above in the summary regarding social motives and expectancies, alcohol is often viewed as a social lubricant (Monahan & Linnutti, 2000). Because students usually drink with their friends on the weekend, take care of each other when they have had too much to drink, and share war stories afterwards, they typically see alcohol as a social facilitator that helps them have fun together and

deepens their friendship bonds (Clapp, Shillington, & Segars, 2000; Lederman & Stewart). Lederman and Stewart's emphasis on students' social motives for drinking and on the social context of college drinking are consistent with social cognitive theory (Bandura, 1986), which they also draw upon in their model of socially situated experiential learning. Both the SSEL and social cognitive theory incorporate the idea that students learn how to drink and how not to drink not only through their own experiences, but through observing and discussing their peers' experiences.

There is no denying that peers can have a strong influence, be it directly or indirectly, on college students' drinking behaviors and beliefs. And while studies have shown peer influences to be stronger than parenting influences (Allen et al., 2003; Ham & Hope, 2003; Wood et al., 2004), studies have also shown parents can impact their late adolescents' alcohol use. This study now turns to scholarship regarding parenting factors associated with college students' dangerous drinking.

Parents' Influence on College Students' Dangerous Drinking

The parent-child relationship tends to be in a unique stage when most late adolescents are attending college, a stage increasingly referred to as "emerging adulthood" (Arnett, 1998, 2000, 2004, 2005, 2007; Nelson, Padilla-Walker, Carroll, Madsen, Barry, & Badger, 2007; White, McMorris, Catalano, Fleming, Haggerty, & Abbott, 2006). Emerging adulthood refers to people ages 18 to 25, who are no longer adolescents and not quite independent adults (Arnett, 1998, 2000). It is a developmental stage that typically involves "identity explorations,

instability, self-focus, feeling in-between, and a widening of possibilities" (Arnett, 2004, p. 55). Risky behaviors like unprotected sex and substance use and abuse are particularly rife during emerging adulthood, as sensation seeking is acute and, as will be addressed below, parental control and/or monitoring tend to decrease once children graduate from high school (Arnett, 2000; Arnett, Ramos, & Jensen, 2001; White & Jackson, 2004; White et al., 2006).

As such, this section will begin with a summary of the research on the connection between the parent-emerging adult relationship and college students' alcohol use, followed by a summary of studies on general parenting practices—practices that do not specifically target the child's substance use— and college students' drinking. This section will continue with a more detailed review of the research on parents' targeted influence strategies that are directly geared toward students' alcohol or substance use. These targeted influence strategies include parental approval or disapproval of the students' drinking, rule setting, and parent-child communication regarding substance use. The section will conclude with a review of the research regarding the impact of parents' own drinking on their children's drinking.

The Parent-Child Relationship and College Drinking

The parent-child relationship typically undergoes changes when the child reaches emerging adulthood, changes such as increased liking and companionship, and decreased conflict and social control (Arnett, 1998, 2000, 2004; Fisher & Miller-Day, 2006). As Arnett (2004) explains, many of these

relational changes are connected to the child being in-between the stages of adolescence and adulthood:

> For the most part, their parents adapt to their growing maturity and treat them differently in emerging adulthood than they did in adolescence. Just as emerging adults come to see their parents as persons and not merely parents, so parents come to see their children as persons and mot merely their children. These changing perceptions on both parts allow parents and emerging adults to establish a new relationship, as friends and near-equals. (p. 47)

Many emerging adults, particularly college students, are dependent upon their parents to some degree, be it financially or emotionally; yet many are also striving for independence and self-responsibility (Arnett, 2004). This quest for greater independence and freedom from parental control, which is often granted, in part, through decreased parental monitoring, can play a part in college students' alcohol use (Arnett, 2004; Cohen & Lederman, 1998). As Cohen and Lederman explain, some students view drinking "as a symbolic act," an act that allows them to "meaningfully" express their newfound "freedom" (p. 106). This view amongst students might explain why, in one study, emerging adults did not find "norm compliance"— which included not getting drunk and not drinking and driving— to be as important an indicator of "adulthood" as did their parents (Nelson et al., 2007, pp. 669-670).

Investigations regarding college student drinking outcomes and their connection to the parent-child relationship have focused on conflict, closeness, and biological sex. Turner, Larimer, and Sarason (2000) found that fraternity and sorority pledge class members' reports of conflict with their mother and father

were both associated positively with alcohol-related negative consequences one year later. Further analysis revealed a significant interaction between participant sex and father-child conflict in that there was a strong positive relationship between alcohol-related consequences and father-child conflict for male students, but not for female students. Turner et al.'s results are generally consistent with an older study, conducted by Haemmerlie, Steen, and Benedicto (1994), examining "conflictual independence" (p. 644). Hammerlie et al. defined conflictual independence as "having a relationship with one's parents that is free from excessive guilt, anxiety, anger and resentment" (p. 644). Heavy drinking students had significantly lower mother-child conflictual independence scores than did light drinking students. Additionally, there was a significant interaction with participant sex and alcohol use, in that it was heavy drinking female students who reported the lowest conflictual independence scores regarding their mothers. Both these studies suggest there is a relationship between parent-child conflict, biological sex, and college student drinking.

The connection between parent-child closeness and college student drinking is unclear. Part of the reason for this is that closeness has been labeled, conceptualized and measured in various ways. Wood et al. (2004) used the term "parental support" and measured the variable with items that tapped into the students' perceptions of their parents' affection toward them and involvement in their lives (p. 22). Wood et al. surveyed recent high school graduates the summer before they were about to enter college, examining both peer and parental

influences on students' frequency of heavy episodic drinking and students' experiences with alcohol-related negative consequences. Parental support failed to associate significantly with students' heavy episodic drinking or negative consequences. Similar results occurred in Sessa's (2005) study involving male college students, using a measure much like Wood et al.'s and calling it "parental involvement" (p. 66). In both Sessa and Wood et al.'s studies, students reported on both parents together; though similar results were found when students reported on the closeness of their relationship with their mother and their father individually (Padilla-Walker et al., 2008).

While three studies failed to find a direct relationship between parent-child closeness and dangerous drinking (Padilla-Walker et al., 2008; Sessa, 2005; Wood et al., 2004), Padilla-Walker et al. did find a strong and significant interaction effect regarding college student drinking, maternal closeness, and parental reports of maternal knowledge of the student's friends, the student's general behaviors, and the student's substance use behaviors. Maternal knowledge had a significant negative relationship with students' drinking only when there were high degrees of maternal closeness. Additionally, there were strong correlations between parent-child closeness and parental knowledge. Due the study design, it is unknown if the mother's knowledge of her children's behavior was due to relational closeness or if her knowledge created that closeness. However, Padilla-Walker et al.'s findings suggest closeness might have an indirect impact on the students' drinking behaviors.

General Parenting Practices and College Drinking

Several parenting behaviors that do not specifically target adolescents' substance use have been shown to influence college drinking either directly or indirectly. For instance, two recent studies found that certain parenting styles have an impact on college students' alcohol consumption and alcohol-related problems through mediated pathways. Both used Baumrind's (1971, 1991) three major parenting types: permissive, authoritarian, and authoritative. Patock-Peckham et al. (2001) found that students who perceived their same-sex parent as more permissive had less self regulation; less self regulation was associated with less control over one's drinking, and less control over one's drinking was associated with greater alcohol use and more alcohol problems. Patock-Peckham et al. also found that female students who perceived their mother as being authoritative were more likely to have high self regulatory skills. A similar study, conducted by Patock-Peckham and Morgan-Lopez (2006), examined the path from parenting styles, to impulsiveness, to drinking control, to college students' alcohol use and problems. Once again, students who perceived their same-sex parent as having a permissive parenting style reported more alcohol use and problems; however, the relationship occurred via increased impulsiveness (rather than self regulation) and decreased drinking control. Additionally, for female participants, there was a significant positive relationship between impulsivity and perceiving their mother as authoritarian; whereas for male participants, there was a significant negative relationship between impulsivity and perceiving their father

as authoritative. Taken together, the two parenting style studies conducted by Patock-Peckham et al. and Patock-Peckham and Morgan-Lopez suggest that having a permissive parent of the same sex is a risk factor for drinking problems amongst college students; whereas an authoritative parenting style might serve indirectly as a protective factor.

College students' perception that their parents monitor their general behaviors also can have a protective influence on students' dangerous drinking (Abar & Turrisi, 2008; Sessa, 2005; Walls et al., 2009; Wood et al., 2004). Parental monitoring has been defined as "the extent to which parents may attempt to attend to, track, or control their children's activities and whereabouts (Kerr & Stattin, 2000)" (Wood et al., p. 20). Wood et al. measured parental monitoring by asking students the degree to which their parents try to know and actually do know where they go at night, where they are after school, and what they do with their free time. Parental monitoring was significantly and negatively associated with students' heavy episodic drinking and negative consequences related to their drinking. The same measure of parental monitoring employed in Wood et al.'s study was used in a longitudinal study that investigated incoming college freshmen's transition from not drinking to drinking, as well as their increase in drinking intensity, over their first two years of college (Walls et al.). Walls et al. found that students who reported higher levels of parental monitoring before they started college were significantly less likely to increase their heavy episodic drinking over time, and they experienced fewer alcohol-related consequences over

time. However, parental monitoring was not significantly related to college students' transition into heavy episodic drinking.

The degree to which parents engage in monitoring behaviors, as well as the impact such behaviors have on college students' drinking, could depend on where students live. Sessa (2005) compared male college students who lived at home (commuter students), with male college students who lived in dormitories on campus (or residential students). Despite the increased physical distance, residential students reported significantly greater parental monitoring than did the commuter students. Additionally, Sessa found that commuter students who were infrequent alcohol users reported their parents' monitoring as significantly higher than commuter students who drank frequently. Differences in perceived parental monitoring between infrequent alcohol users living on campus and frequent alcohol users living on campus were not significant.

Some scholars have argued that parental knowledge, or what parents know about where students are and what they do, is different from parental monitoring, or parents' efforts to obtain such knowledge (Abar & Turissi, 2008; Padilla-Walker et al., 2008). Examining parental knowledge and monitoring as separate constructs, Abar and Turissi investigated incoming college freshmen's perceptions of the two parenting variables as possible indirect influences on students' alcohol consumption during their second semester of college, mediated through students' friends' alcohol use during their first semester of college. Abar and Turrisi found that the higher the levels of parental monitoring and knowledge

perceived by the students, the fewer heavy drinking friends they had, and the less they drank themselves.

In all four of the parental monitoring or knowledge studies reviewed here, data was collected from students but not their parents; additionally, the parental monitoring and knowledge constructs were measured using general questions, as opposed to questions specially asking about the student's use of alcohol (Abar & Turrisi, 2008; Sessa, 2005; Walls et al., 2009; Wood et al., 2004). Padilla-Walker et al. (2008) conducted a study that addressed both of these issues and found that students' perception of parental knowledge accounted for approximately 5% of the variance in college student drinking, and parents' reports of their own knowledge accounted for approximately 3% of the variance in college student drinking. Both students' and parents' reports of maternal knowledge had a significant, negative relationship with students' drinking. As mentioned in the previous discussion on parent-child closeness, Padilla-Walker et al. also found an interaction effect: mothers' self-reported knowledge had a significant negative relationship with students' drinking only when there were high degrees of maternal closeness. While this study lends support to the idea that parents' knowledge of their emerging adult child's substance use might serve as a protective factor, the survey employed in Padilla-Walker et al.'s study combined general knowledge items with just one alcohol item and one drug use item. It would be helpful to parse out the influence of parents' substance use specific knowledge and investigate the degree to which such knowledge is associated with

college student drinking over and above parental knowledge of the students' more general behaviors.

Parents' Targeted, Substance Use Specific Practices and College Drinking

The present project focuses on parents' substance use specific influence strategies. The research investigating the ways parents directly attempt to influence their college children's drinking, and the effectiveness of those attempts, is somewhat sparse and relatively new. Employing both qualitative and quantitative methods, such studies have examined parental approval of the emerging adult's substance use, rules regarding such use, and parent-student communication about alcohol and drugs. As will be illustrated in the following review, this emerging body of research suggests parents could be a resource for prevention efforts on college campuses; however, more research is needed to develop a clearer understanding of the ways in which parents attempt to influence, and actually do influence, their students' drinking. This section on parents' targeted, substance use specific influence strategies will begin with a synthesis of the studies on parental approval and disapproval, followed by the ways in which the present project builds upon the extant approval/disapproval research.

Parental Approval and Disapproval

Several studies suggest that the less parents approve of their emerging adults' drinking, the less students will drink. Boyle and Boekeloo (2006) asked their residential college freshmen sample the degree to which each parent individually would approve of the student "drinking occasionally, regularly, and

heavily on a regular basis" (p. 239). Approximately one third of the students in their study said both of their parents would approve of them drinking occasionally, but only 5% said their mothers would approve of them drinking regularly, and 7% said their fathers would approve of regular drinking. When asked about perceived parental approval for heavy drinking, those percentages dropped to 1% for mothers and 2% for fathers. Using logistic regression with alcohol-related problems as the dependent variable, Boyle and Boekeloo (2006) found a significant positive relationship between students' perception of parental approval of their drinking and students' experiences with alcohol-related problems, particularly the mother's approval. Bivariate correlations revealed a strong, significant association between alcohol related consequences and perceived mother's approval, $r = .34$, and a somewhat weaker, though still significant, correlation with perceived father's approval, $r = .25$. This is one of the few parental approval studies that investigated father's approval and mother's approval individually. It is also important to point out that Boyle and Boekeloo's (2006) measure of parental approval was limited to questions that asked specifically about parents' attitude towards students' frequency and quantity of drinking; as will be explicated below, many parental approval studies employed measures that included items beyond this attitudinal construct.

Wood et al. (2004) surveyed first year college students the summer before they started school. As a measure of parental disapproval, students were asked to indicate if their parents would approve, disapprove, or not care if they drank daily,

engaged in heavy episodic drinking daily, engaged in heavy episodic drinking on the weekend, and drove while intoxicated. Wood et al. also assessed what they termed "parental permissiveness toward alcohol use" by asking how many drinks each parent would consider to be the student's "upper limit" (p. 22). In a multiple regression that looked at parent influences above and beyond peer influences, the parenting variables (which included parental monitoring/knowledge, parental support, and parental permissiveness towards and disapproval of alcohol) increased the variance accounted for in heavy episodic drinking by 5%. Parental disapproval had a significant, negative association with students' heavy episodic drinking ($\beta = -.08$). Parental permissiveness had a significant, positive association with students' heavy drinking ($\beta = .08$). In a similar regression analysis using alcohol-related negative consequences as the dependent variable, the four parenting variables under investigation increased the variance accounted for by 6%. Parental disapproval was not a significant predictor of students' negative consequences; however, parental permissiveness was ($\beta = .14$). Wood et al. also examined a variety of different interaction effects and consistently found that the association between peer influences and students' dangerous drinking was stronger when students perceived higher levels of parental permissiveness towards their drinking.

Building on Wood et al.'s (2004) work, Walls et al. (2009) conducted a longitudinal study examining parental and peer influences on college students' drinking over time, starting the summer before students entered college, followed

by the spring semester of their freshmen year and the spring semester of their sophomore year. Using measures of parental disapproval and parental permissiveness similar to those employed by Wood et al., Walls et al. found similar relationships between these parenting variables and students' dangerous drinking. Students were significantly less likely to become heavy episodic drinkers when they perceived strong parental disapproval. When students perceived their parents had more permissive attitudes about their drinking, they were significantly more likely to transition into heavy episodic drinking, engage in weekly alcohol use, and experience negative consequences. Increases in the intensity of students' dangerous drinking over the two year time period also were associated with perceived parental permissiveness.

Both Wood et al. (2004) and Walls et al.'s (2009) studies indicate that college students are more likely to engage in dangerous drinking when they perceive their parents have a permissive and/or approving attitude towards their drinking. There are some limitations in these two studies that should be addressed. First, neither study explained how their measures of parental permissiveness and their measures of parental disapproval differed conceptually. Arguably, the items used to measure both variables tap into the overall question of whether parents have an approving or disapproving attitude towards the students' drinking. A related issue is the inclusion of the item asking about parental approval of the student driving while intoxicated. As will be addressed further in the section on parental rule setting and communication about alcohol, many parents allow their

emerging adult children to drink to some extent, as long as they do not drive while intoxicated or get in a car with a drunk driver (Baxter, Bylund, Imes & Routsong, 2009). Approval of drinking is different from approval of drinking and driving; thus, including this item in a measure of parental approval of their child's drinking creates conflation issues.

When parental approval of college student drinking is investigated as part of the subjective norms construct, its association with college drinking becomes more equivocal. Kuther and Higgins-D'Alessandro (2003) drew on the theory of planned behavior (Ajzen, 1985, 1991) to examine perceived parental norms' influence on late adolescents' alcohol use amongst three samples: eleventh grade high school students, college freshmen, and college juniors. Using path analysis with each sample, they found that perceived parental norms positively predicted college junior's alcohol use ($\beta = .20$), but not college freshmen or the high school students. The parental subjective norms variable included four items about the parents' own alcohol consumption, one item about how often the student drinks in the parents' home, and one item asking specifically about parental approval of the child drinking; thus, Kuther and Higgins-D'Alessandro's subjective norms variable was not a pure measure of parental approval.

Using a measure much different than that of Kuther and Higgins-D'Alessandro (2003), Boyle and Boekeloo (2009) also examined students' perceptions of their parents' subjective norms. Calculating subjective norms scores for mothers and fathers individually, Boyle and Boekeloo (2009) asked

college freshmen the degree to which each parent would approve or disapprove of them using alcohol occasionally, regularly, and heavily. These scores were summed for each parent and then multiplied by students' scores regarding how important each parent's opinion was to them. Using structural equation modeling, parental subjective norms, students attitudes toward drinking, and their perceived risks of drinking were investigated as potential mediators of the relationship between parent-child communication and college student drinking outcomes. Neither mothers' nor fathers' subjective norms, nor students' attitudes or perceive risks, mediated the relationships between parent-child communication and students' alcohol consumption or alcohol-related consequences. Both subjective norms studies (Boyle & Boekeloo, 2009; Kuther & Higgins-D'Alessandro, 2003) measured parents' norms differently and students' drinking outcomes differently, though both found the parental subjective norms variable failed to significantly associate with college freshmen's drinking. Kuther and Higgins-D'Alessandro speculated that perhaps parental norms associate with college juniors' drinking and not freshmen's drinking because alcohol experimentation is more salient in the latter group, and when students are experimenting, they are less influenced by parents.

Both Kuther and Higgins-D'Alessandro's (2003) work, and a study conducted by Abar and Turrisi (2008), suggest that the influence of perceived parental approval on college students' drinking changes over time. Abar and Turrisi conducted a quasi-longitudinal study examining both the direct impact of

such approval of college student drinking and the mediated influence through students' friends' drinking. The parental approval measure asked incoming college students if their parents would approve, disapprove, or not care if they drank daily and if they engaged in heavy episodic drinking on the weekends. Perceived parental approval before starting college was not predictive of the amount of college drinking friends, nor was it predictive of students' actual alcohol consumption during their first semester of college. However, there was a very strong and significant inverse relationship between parental disapproval before starting college and students' alcohol consumption their second semester of college ($\beta = -.68$).

Considering these parental approval studies collectively, five of the six provided empirical evidence that the less college students perceived their parents approved of their drinking, the less students consumed alcohol (Abar & Turrisi, 2008; Kuther & Higgins-D'Alessandro, 2003; Walls et al., 2009; Wood et al., 2004) and/or the fewer alcohol-related negative consequences they experienced (Boyle & Boekeloo, 2006; Walls et al., 2009; Wood et al., 2004). However, three of the six studies employed a measure of parental approval that included additional items— items that went beyond parents' attitudes toward their emerging adult's alcohol consumption (Kuther & Higgins-D'Alessandro, 2003; Walls et al., 2009; Wood et al., 2004). Additionally, none of the parental approval studies reviewed here examined whether or not the parents actually do approve, as the data was collected from students only in all six studies. Aside from Boyle and

Boekeloo's (2006, 2009) work, the parental approval studies asked about both parents together as opposed to individually. It is possible that the impact of a mother's disapproval differs from that of a father's disapproval. Additionally, the parental approval and disapproval studies discussed thus far have not indicated what it is parents say or do to indicate their approval or disapproval and/or to influence their children's perception of such attitudes. As will explicated further below, one exploratory qualitative study on parent-student substance use communication suggested that some parents express their disapproval by indicating their hurt and disappointment if the child uses substances, whereas other parents send a somewhat contradictory message, stating their disapproval while simultaneously telling the student that using alcohol and/or drugs is a normal part of late adolescence (Miller-Day & Dodd, 2004). If indeed students' perception that their parents disapprove of their drinking is a protective influence on students' dangerous drinking, it is important to understand how such perceptions are formed.

In their call for future research, Boyle and Boekeloo (2006) wrote, "parents should be surveyed to determine actual rates of approval, and dyad studies may be conducted to link actual parental behavior with student perceptions and outcomes. Finally, work needs to be done to identify the means by which parental attitudes are communicated to students" (pp. 243-244). The present project addresses Boyle and Boekeloo's (2006) call. Both perceived parental approval and actual parental approval will be investigated as possible

predictors of college students' dangerous drinking. In an attempt to avoid conflation issues, the measures of actual and perceived parental approval will not include additional items beyond this attitudinal construct. Additionally, the association between students' perceived parental approval and parent-student alcohol communication, as well as the association between actual parental approval and parent-student alcohol communication, will be examined.

The rules

Several studies involving college students have investigated parents' rule setting regarding alcohol and/or drug use. Baxter et al. (2009) explored both parents' and their college children's perceptions of parental rule-setting regarding alcohol, as well as rules regarding tobacco use and sexual activity. A rule was defined as "'a stated or unstated expectation about what a person should or should not do related to his or her health'" (p. 257). Participants included 164 student-parent dyads in which the students averaged more than three years of college. The students and parents were asked individually to list all the parents' health-related rules that "applied to the student during his or her adolescence" (p. 257). For each rule, participants were also asked about the parents' level of directness in communicating the rule, the parents' justification for setting the rule, the parents' sanctions if the child violated the rule, and the child's compliance.

The most frequently listed alcohol rule, reported by 81.2% of the dyads, was in regards to not drinking and driving, which Baxter et al. (2009) labeled a "contingency-oriented" rule because it allowed drinking as long as the child did

not drive while doing so and/or did not ride as a passenger with a driver who had been drinking (p. 262). Another common contingency rule, allowing drinking as long as it was done in moderation, was listed by 50.6% of the dyads. The second most frequently listed alcohol rule, reported by 59.4% of the dyads, was "abstinence-oriented," prohibiting alcohol consumption until a certain age (often 21) (p. 262). In comparison, 46.9% said the parents prohibited alcohol regardless of the child's age. Repeated-measures MANOVA analyses revealed parents' scores for directness, justification, compliance and sanctioning for their alcohol rules were all significantly higher than the college students' scores. Using partial eta^2 as an effect size indice, Baxter et al. reported effect sizes ranging between .07 and .23. While Baxter et al. (2009) did not directly examine college student alcohol behaviors as an outcome variable, they did test perceptions of rule compliance as an outcome variable. In regards to obeying the abstinence rules, there was a positive relationship between the children's reports of their rule compliance and the children's perceptions of their parents' rule justification. For the contingency rules, both children's perceptions of their parents' rule justification and their parent's rule sanctioning positively predicted the children's reports of their rule compliance. Baxter et al.'s study suggests that providing justification for rules might help ensure that the children obey those rules.

While Baxter et al.'s (2009) study found parental rule setting regarding their children's alcohol use to be relatively common, Miller-Day and Dodd (2004) did not find this to be the case. Focusing on the content of parent-student

substance use discussions, Miller-Day and Dodd asked 75 parent-emerging adult dyads individually to describe a significant conversation they had about alcohol, tobacco and/or drugs. Parents of the first year college students were also asked to describe any additional ways they informed their children of their substance use expectations. One of the themes that emerged in Miller-Day and Dodd's study was parents' use of proscriptive and prescriptive guidelines regarding drug use. Rules and sanctions were sub-themes of this theme. Only 10% of participants said their parent-child substance use discussions involved talk of rules, and the rules were usually more flexible when it came to alcohol and less flexible with drugs. In regards to breaking those rules or falling short of parental expectations, 9% of participants said sanctions were discussed. These findings are inconsistent with Baxter et al.'s (2009) results regarding the salience of parental rules regarding alcohol use; however, as Miller-Day and Dodd pointed out, their findings could be due to their methodology, as Miller-Day and Dodd did not ask specifically about rules.

There were two limitations in both Miller-Day and Dodd's (2004) and Baxter et al.'s (2009) studies: both failed to examine college students' substance use as an outcome variable, and the time frame as to when the discussions under investigation actually occurred was unclear. Miller-Day and Dodd did not provide a specific time frame in their questionnaire; thus, the significant substance use conversation could have occurred when the student was in college, high school, or even middle school. While Baxter et al. specifically asked about rules during the

student's adolescence, an age range for the term "adolescence" was not provided; thus, some participants could have been reporting on early adolescence, whereas others might have reported on later adolescence. The time-frame issue and the examination of college students' alcohol use (as well as other substances) as an outcome variable were both addressed in two later studies conducted by Miller-Day (2008).

In the first study Miller-Day (2008) asked first year college students to list and describe their parents' strategies over the last four years in communicating parental expectations regarding the students' alcohol, tobacco, and drug use. Almost 23% of participants said their parents had a no tolerance rule, and discussions of punishment were reported by 18.1% of the student participants. In the second study, Miller-Day examined the association with various parental strategies, including rules and threats of punishment, and students' substance use outcomes. In this new sample of college students, 50.3% said their parents had a no tolerance rule for alcohol, tobacco, and/or marijuana, and 36% indicated their parents had threatened punishment if the child used substances. The disparity between the two studies regarding the frequency with which parents set substance use rules and threaten sanctions could again be due to methodological issues. Miller-Day's first study posed an open-ended question asking students to indicate how their parents conveyed expectations regarding the child's substance use; whereas her second study included rules and sanctions as items in a close-ended survey. In the latter study, Miller-Day found a significant, negative association

between parents having a no tolerance rule and student alcohol use (r = -.10); however, there was a significant positive relationship between parents threatening punishment for use and students' alcohol use (r = .17). These results suggest that while rules against alcohol use might be an effective deterrent, taking the rule so far as to include sanctions might actually encourage use. It is also possible that parents in Miller-Day's study began threatening punishment after becoming aware of the students' substance use. The temporal order of parents' employment of alcohol deterrent strategies and students' use could not be determined by the study design. Additionally, while the outcome variables were substance specific, the predictor variables regarding parents' substance use strategies were not— the survey asked about parents' use of the strategies to prevent the student "'from using alcohol, tobacco, or marijuana'" (p. 5). It is possible that parents' rules and expectations differ for each substance.

The present study builds on this line of research by asking how often parents have expressed various rules about college drinking within a specific time frame: since the child graduated from high school until the time the student and parent participated in the study. The association between conversations regarding parental alcohol-rules and students' dangerous drinking also will be examined, using both students' reports and parents' reports of such conversations. Because rules and sanctions are just one aspect of parent-child alcohol communication, they will be examined as part of a broader investigation of alcohol communication topics in this project.

Substance Use Conversations

The research on parent-child substance use conversations suggests such communication is multi-dimensional, and that it has complex associations with college students' drinking outcomes. While extant studies have provided health and family communication scholars with a foundation from which to build, such studies also have been somewhat sporadic, examining different dimensions of parent-child interactions regarding alcohol use or substance use, and examining those dimensions in different ways. This section will begin with what is currently known regarding the occurrence and content of parent-student alcohol communication, and then turn to findings regarding the relationship between parent-child alcohol communication and college students' dangerous drinking.

Occurrence of substance use conversations

Research suggests many parents talk to their adolescent children about drinking. In Baxter et al.'s (2009) study, 97% of the parent-student dyads said the parent had set alcohol rules. In two studies conducted by Miller-Day (2008), approximately 9% of students reported their parents had not talked to them about substance use, leaving 91% who did. Similar results were found in an earlier study conducted by Miller-Day (2005), in which 92% of college students said at least one of their parents had said or done something to try to prevent them from drinking, or from using tobacco or marijuana, during their high school years up until the time of the survey. However, as touched on above, Miller-Day's work (2005, 2008) did not differentiate between talks about alcohol, talks about

tobacco, and talks about illicit drugs. Additionally, the timing of the alcohol discussions referenced in these studies (Baxter et al.; Miller-Day) was unclear.

When focusing specifically on substance use conversations that occurred during college or immediately preceding college, the research suggests parent-emerging adult alcohol communication might be less pervasive than it is during the child's younger adolescence. Boyle and Boekeloo (2009), who focused on conversations regarding the negative aspects of drinking once the child started college, found that students "perceived relatively little communication about alcohol risk from their parents" (p. 123). Less than half of the participants indicated that their parents had talked to them about 30 of the 33 alcohol communication topics listed in Boyle and Boekeloo's survey. Additionally, in their qualitative study, Miller-Day and Dodd (2004) found that upon asking parent-student dyads when a significant substance use conversation had occurred between them, only 15% of participants said such talks occurred when the student was heading for college. Additional research is needed to determine the degree to which parent-child alcohol communication takes place after the emerging adult graduates from high school and/or while he or she is attending college.

Content of substance use conversations

Several studies have examined the content of parent-student alcohol communication, though with different foci and methodologies. As touched on above in the synthesis of studies regarding parents' alcohol rules, Miller-Day and Dodd (2004) conducted an exploratory qualitative study, focusing on the

significant conversations parents and their first year college students have had about alcohol, tobacco and/or drugs. In an effort to develop a descriptive model of parent-student substance use communication, and using narrative theory (Fisher, 1987) to guide their study, Miller-Day and Dodd found three major themes regarding the content of such conversations: parents presenting drug use as problematic, parents providing evidence to support their claims, and parents providing proscriptive and prescriptive guidelines regarding drug use.

Miller-Day and Dodd's (2004) dyadic data revealed that discussions regarding the problems with drugs frequently involved warnings about the dangers of use, including potential legal and health issues, as well as the consequences of losing control. Loss of control was discussed in terms of becoming addicted or in terms of losing one's faculties, making poor decisions or becoming victimized. Parents seemed to be aware of the possibility that someone could "spike" students' drinks or "take advantage of them" (p. 77). In addition to talking about the dangers of drugs, parents in Miller-Day and Dodd's study framed substance use as a problem by expressing their disapproval. Many parents had a "'get it on the record where I stand, even though I know you will experiment anyway'" mentality (p. 77), claiming they disapproved of substance use but also treating it as normal late adolescent behavior. This finding is consistent with alcohol research conducted with college students' parents in the late 1980s, in which parents expected alcohol experimentation and viewed it as a rite of passage (Lederman & Stewart, 2005). Other parents in Miller-Day and

Dodd's study were more direct about their disapproval, expressing disappointment and pain should the child engage in substance use.

Most parents in Miller-Day and Dodd's (2004) study used personal examples or stories about their own or a loved one's experiences with substance use to support their claims in their conversations with their children. Approximately 5% also used educational materials or information found on the internet as evidence. In terms of guidelines for substance use, few participants (10%) said rules were discussed, and the rules were usually more flexible when it came to alcohol use. A more common finding in Miller-Day and Dodd's study, reported by 28% of participants, was parental advice to "use your own judgment" (p. 79). Overall, most parents' discussions of substance use involved both direct statements and indirect verbal and nonverbal communication. The conversations tended to be ongoing discussions as opposed to major, single events.

In a later study, Miller-Day (2008) developed a typology of parents' substance use deterrence strategies. First year college students ($N = 421$) were asked to list and describe their parents' strategies over the last four years in communicating their expectations regarding the students' alcohol, tobacco, and drug use. The most commonly mentioned strategy, reported by more than 79% of the participants, was telling the student to use his or her own judgment. The second most frequently mentioned strategy, reported by 42.5%, was to give the student information about alcohol, tobacco and/or drugs. Details on what that information might be were not included in the study. Other strategies included

hinting that the child should not use substances, rewarding nonuse, having a no tolerance rule, and threatening punishment if the student did use. While Miller-Day's typology can be helpful for research purposes in creating variables for substance use communication topics or dimensions, it was somewhat incomplete, as it did not address the problematic aspects of drinking that were found in Miller-Day and Dodd's (2004) study. Another issue involved the blending of multiple substances. If indeed many parents expect their students to drink and/or approve of some amount of alcohol use (Lederman & Stewart, 2005; Miller-Day & Dodd), it is likely that deterrence strategies will differ from one substance to another, particularly when one of those substances includes illicit drugs.

Taking a different approach to investigating the content of parent-child substance use conversations, Boyle and Boekeloo (2009) conducted a quantitative study focusing on discussions about the negative consequences of drinking. First-year college students living on campus were asked about such conversations they had had with their parents since starting school. Boyle and Boekeloo (2009) used the Alcohol Based Parent-Teen Communication Scale, adapted from Turrisi et al. (2000). With 33 items, Boyle and Boekeloo's (2009) Alcohol Based Parent-Teen Communication Scale was relatively comprehensive in terms of the negative aspects of drinking, asking not only about drunk driving, peer pressure, and the impact of drinking on one's health, but also about the dangers of mixing alcohol with sex, getting into trouble with police because of drinking, the impact of drinking on one's personality and judgment, and ways to have fun and cope with

stress without alcohol. Boyle and Boekeloo (2009) found that the alcohol topic most frequently discussed between parents and their late adolescents was "the risk of riding in a car with someone who has been drinking," reported by 70% of students (p. 122). This is consistent with Baxter et al.'s (2009) finding that not drinking and driving was the most common parental rule regarding students' alcohol use. The second most frequently discussed topic in Boyle and Boekeloo's (2009) study was "the importance of a healthy lifestyle," reported by 67% of participants, followed by "the importance of not being pressured by others into drinking," reported by about half the participants (p. 120).

While Boyle and Boekeloo's (2009) Alcohol Based Parent-Teen Communication Scale provides researchers with a reliable ($\alpha = .97$) measure of parent-student alcohol communication regarding the negative aspects of drinking, the survey has several limitations. First, as Boyle and Boekeloo (2009) admitted, "the scope of topics covered was rather limited" (p. 128). The scale did not ask about parental rules or parental sanctions, with the exception of one item about "what the punishment would be if you were caught drinking" (p. 122), which could be asking about parental punishment or the university's punishment. Given that preliminary research has suggested parental rule setting about alcohol use could be an effective deterrent (Baxter et al., 2009; Miller-Day, 2008), this is a dimension of parent-emerging adult alcohol communication that should be investigated further. Additionally, the Alcohol Based Parent-Teen Communication Scale did not ask about discussions regarding the benefits of

drinking; as such, there appeared to be an underlying assumption that all parents believed it would be bad if their child drank, and/or that parents only discussed the negative aspects of drinking. Given that preliminary research has indicated parents expect a certain amount of alcohol use or experimentation in college (Lederman & Stewart, 2005; Miller-Day & Dodd, 2004), it is reasonable to believe that some parents might discuss the benefits of drinking in college. It is also feasible that some parents provide their emerging adult children with tips on how to drink in moderation or how to stay safe when drinking. For instance, Miller-Day and Dodd found that some parents talked to their children about always keeping their eyes on their drink. However, Boyle and Boekeloo (2009) did not ask about such topics. Another limitation with the Alcohol Based Parent-Teen Communication Scale was that some of the items— such as "how being caught drinking might result in publication of your arrest in the newspaper," and "how being caught drinking might make friends' parents prohibit them from hanging out" (p. 122) — seemed somewhat unrealistic and/or geared towards younger adolescents. A limitation of the study in general was surveying only students as opposed to parents and students.

Collectively, these studies regarding the content of parent-child substance use communication suggest that parents and their college student children discuss multiple alcohol topics, including rules and sanctions, the problematic aspects of drinking, general aspects of drinking, peer pressure, and using one's own judgment when it comes to drinking (Baxter et al., 2009; Boyle & Boekeloo,

2009; Miller-Day, 2008; Miller-Day & Dodd, 2004). While such findings are important and helpful in furthering knowledge regarding the content of parent-child alcohol communication, there is a clear need for a broader, more comprehensive measure of parent-child alcohol communication that provides researchers with quantitative data indicating what specific alcohol topics are discussed and how often. The present project works toward fulfilling that need by employing a wide-ranging parent-student alcohol communication survey that asks about a variety of alcohol topics. The newly created survey draws on extant parent-child communication studies, asking about rules, sanctions, rewards, the many negative aspects of drinking, peer pressure, and using one's own judgment when it comes to drinking. The survey used in the present study also asks about discussions related to the benefits of drinking and ways to drink in moderation, as the degree to which these topics are discussed between college students and their parents has not been addressed in the college drinking literature. By employing a broad, comprehensive survey of parent-student alcohol communication, the present project can examine how different types of alcohol messages exchanged between parents and their emerging adult children associate with college students' dangerous drinking.

Substance use conversations and college students' drinking outcomes

National media campaigns such as "Parents: The Anti-Drug" (The National Youth Anti-Drug Media Campaign, n.d.) posit that by talking to adolescents about alcohol and drugs, parents can help mitigate their child's

substance use. However, research indicates that with college students' dangerous drinking, this may, or may not, be the case. The following review of studies regarding the connection between parent-child substance use communication and college students' alcohol use reveals a complex and unclear picture of parents' influence.

Several studies suggest parent-emerging adult substance use communication might help deter college students' dangerous drinking. Miller-Day (2005) found that college students whose parents had not said or done anything to try to prevent their late adolescents' alcohol or drug use were significantly more likely to have gotten drunk or used tobacco in the previous month than students whose parents had tried to prevent their child from using substances. As discussed in the section on parental rules regarding substance use, having a no tolerance rule had a significant negative association with alcohol use (r = -.10), as well as with tobacco use (r = -.14), and marijuana use (r = -.14) (Miller-Day, 2008). Additionally, Booth-Butterfield and Sidelinger (1998) found that college students who reported more frequent parent-student discussions regarding alcohol use were more likely to take precautions, such as not drinking and driving, or not drinking frequently. The correlation between the frequency of alcohol talks, which was measured with just one item, and students' precautionary behaviors when drinking was moderate (r = .33).

Other studies have found a positive relationship between various dimensions of parent-child substance use communication and college students'

drinking: talks about the negative aspects of drinking (Boyle & Boekeloo, 2009) and talks of sanctions (Miller-Day, 2008). Using the Alcohol Based Parent-Teen Communication Scale discussed above, Boyle and Boekeloo (2009) surveyed college students to determine if there was a direct relationship between their dangerous drinking and parent-student discussions regarding the negative consequences of drinking. Using structural equation modeling, they also examined the possible mediated relationships between these variables and students' perception of their parents' subjective norms, students' attitudes toward drinking, and their beliefs about the risks of drinking. None of the mediated relationships were significant. Boyle and Boekeloo (2009) did find a significant, albeit somewhat weak, positive relationship between college students' drinking and parent-child communication regarding alcohol ($\beta = .12$). Due to the cross-sectional nature of the study, it is not known if the discussions occurred because of the students' prior drinking behaviors or if the discussions preceded alcohol use.

The cross-sectional nature of Miller-Day's (2008) study also makes her findings somewhat difficult to interpret. In addition to examining how parental rules regarding substance use associated with college students' alcohol, tobacco and marijuana use over the previous month, Miller-Day (2008) examined five other parental substance use deterrence strategies: threatening sanctions, telling the adolescent to use his or her own judgment, hinting expectations that the student not use substances, rewarding nonuse, and providing information about

substance use. All six parental strategies were investigated using single item measures. Parents' threats of punishment were associated with higher levels of alcohol use (r = .17) and tobacco use (r = .10). As noted previously in the section on parental rules, Miller-Day's (2008) results could be an indicator that clear disapproval of substance use is an effective deterrent, whereas taking the rule so far as to include sanctions might actually encourage use; however, the results could also be interpreted as parents threatening punishment after becoming aware of the students' substance use.

Considered collectively, the few studies that have investigated the relationship between college students' drinking outcomes and parent-child alcohol communication have yielded equivocal results. It seems that engaging in some degree of substance use communication might have a protective influence (Booth-Butterfield & Sidelinger, 1998; Miller-Day, 2005), though any parental influence likely also depends on what is said in those conversations. While several parental influence strategies— such as encouraging students to use their own judgment or providing them with information about substance use— had no significant association with students' drinking (Miller-Day, 2008), parent-child communication regarding negative consequences of alcohol use (Boyle & Boekeloo, 2009) and sanctions for substance use (Miller-Day, 2008), were both associated with increased alcohol use; whereas discussions about rules were associated with decreased alcohol use (Miller-Day, 2008). Clearly more research is needed that examines how the content of parent-emerging adult alcohol

communication associates with college students' drinking outcomes. The present study seeks to address this need in the college drinking literature by employing an alcohol communication scale that asks about a broad range of alcohol topics, as well as the frequency with which those topics are discussed, and by investigating how both the frequency of parent-student alcohol communication, as well as the type of alcohol communication topics discussed, associate with college students' alcohol consumption and students' experience of negative consequences related to their drinking. Since parents convey alcohol messages not just by what they say, but also by what they do, this study turns now to the extant research on the influence of parents' own drinking behaviors.

Parents' Alcohol Use

Research examining the relationship between parents' own drinking and that of their college children has yielded mixed results. These mixed results are likely due, in part, to different study designs and measures (Baer, 2002). Some studies examine the influence of parents' general drinking behaviors, whereas others examine the influence of parental alcoholism.

Parents' general drinking behaviors

Studies investigating the relationship between parents' general drinking behaviors and their college children's drinking behaviors measure parents' drinking in a variety of ways. For instance, as discussed previously, Kuther and Higgins-D'Alessandro's (2003) measure of parental drinking norms included items regarding students' perceptions of the frequency of their parents' alcohol

use and intoxication and how much their parents typically drank. This parental norms variable failed to predict alcohol use amongst samples of college freshmen and high school students, though it did predict alcohol use amongst the sample of college juniors. In contrast, Boyle and Boekeloo (2006) considered just the frequency with which parents drank, using a one item measure for each parent. They found that while both parents' drinking was positively correlated with students' problem drinking, it failed to predict students' drinking in a multiple regression analysis that included other variables. Knight et al. (2002) did not indicate how parental drinking was measured; though their study involving more than 14,000 college students revealed that students whose parents consumed alcohol were more likely to meet the diagnosis for alcohol abuse and dependence.

Parental alcoholism or problem drinking

Numerous studies suggest that parents' alcoholism or problem drinking can increase college students' risk of engaging in dangerous drinking, as well as their risk of alcohol abuse or dependence. Kushner and Sher (1993) compared college students' whose biological father had a history of alcoholism with students whose biological parents did not have a history of alcoholism. The college children of alcoholic fathers were significantly more likely to meet the diagnosis for alcohol abuse or dependence than were the students whose parents did not have a history of alcoholism. Similarly, in her examination of the relationship between college students' alcohol abuse and both parent's alcoholism, Pullen (1994) found that children of alcoholics were more likely to

abuse alcohol than were students whose parents were not alcoholic. A multiple regression analysis revealed that a parental history of alcoholism accounted for 43% of the variance in college students' alcohol abuse. Weitzman and Wechsler (2000) also found children of problem drinkers were more likely to report symptoms of alcohol abuse than those of non-problem drinkers. In contrast, Knight et al. (2002) found that students who had a parent who was a problem drinker (different from general parental drinking) were more likely to be alcohol dependent, but they did not meet the diagnostic criteria for alcohol abuse.

As discussed earlier, alcohol abuse and dependence are not necessarily the same as dangerous drinking. Studies examining the influence of parents' drinking that used college students' dangerous drinking as an outcome variable have yielded similar, though somewhat more equivocal, results to those studies that employed students' abuse and dependence as an outcome variable. Turner et al.'s (2000) study involving college fraternity and sorority members failed to find a significant relationship between students' negative alcohol consequences and having a parent with a drinking problem. Some studies have found college students do appear to be more likely to engage in heavy episodic drinking when at least one of their parents is a problem drinker or alcoholic (Chassin, Pitts, & Prost, 2002; Weitzman & Wechsler, 2000), though one study also found students of a problem drinking parent were more likely to be abstinent over the past year as well (Weitzman & Wechsler, 2000). While these studies might suggest college students often model their parents' drinking behaviors, it is important to note, that

the transmission of alcoholism can be due to genetic and/or family environmental factors (Chassin et al., 2002; McCrady, Epstein, & Sell, 2003; USDHHS, 2007).

Summary of Parental Influences

In short, the extant literature on parental influences on college students' drinking reveals that parents can influence their college students' drinking in a variety of ways, both directly and indirectly. This review of parental influences has addressed the parent-emerging adult relationship, general parenting practices, and targeted influence strategies that are directly geared toward students' alcohol or substance use. The targeted strategies discussed here have included parental approval or disapproval of the students' drinking, rule setting, and parent-child communication regarding substance use. A summary of the research regarding the impact of parents' own drinking on their children's drinking was also provided. Overall, most of the studies investigating parental influences on college drinking did not test a theory or use a theory to help explain the data. The studies that did employ a theoretical framework (e.g., Patock-Peckham et al., 2001; Patock-Peckham & Lopez, 2006) often used social learning theory, or social cognitive theory (SCT) (Bandura, 1986). SCT is appropriate for this line of research because the theory assumes parents are agents of socialization who can influence their children's behaviors through modeling and through verbal instruction (Bussey & Bandura, 1999; Grusec, 1992; Rosser, 1981), and because "communication is implicitly understood to be part of the social learning process"

(Kunkel et al., 2006, p. 264; see also Miller-Day, 2002). As such, the present project is grounded in SCT and turns now to a summary of the theory.

Social Cognitive Theory

Social cognitive theory focuses on the bi-directional interactions between environmental influences, cognitive processes, and behaviors (Bandura, 1986). Bandura developed SCT from social learning theory, the latter of which was rooted in behavioral psychology and emphasized operant conditioning and the use of rewards and punishments to shape behavior (Grusec, 1992; Kunkel et al., 2006). SCT differs from social learning theory in its assumption that the learner has agency. As Bandura (2001) explained, "People are not just onlooking hosts of internal mechanisms orchestrated by environmental events. They are agents of experiences rather than simply undergoers of experiences" (p. 4). As agents of their own experiences, humans consider outcomes and their ability to perform a given behavior, or their self efficacy (Bandura, 2001; Kunkel et al.; McAlister, Perry, & Parecel, 2008). According to SCT, these cognitive or psychological processes are impacted by social interactions, including modeling, verbal information or instruction, and experienced consequences (Bussey & Bandura, 1999; Grusec; Rosser, 1981). Modeling, a key concept of SCT that differentiates it from early articulations of social learning theory, is addressed in the present study, as is the influence of verbal instruction.

By displaying a particular behavior, models serve as information transmitters and/or socialization agents. As Bussey and Bandura (1999) explain,

modeling involves conveying "values, attitudes, and patterns of thought and behavior," as well as "rules and structures embodied in the exemplars for generative behavior" (p. 686). As such, modeling is more than imitation or mimicry (Bussey & Bandura). The modeling process involves four stages of observational learning: paying attention to the model's behavior, retaining the information, executing or performing the behavior, and deciding whether or not there is enough incentive or motivation to continue performing the modeled behavior (Bandura, 1969; Grusec, 1992; Kunkel et al., 2006; McAlister et al., 2008). Models can be mediated, such as characters in a television show, or they can be interpersonal partners, such as parents or peers. Studies have suggested that college students model both parents (e.g., Fromme & Ruela, 1994; Jung, 1995; Pullen, 1994) and peers (Borsari & Carey, 2001) when it comes to drinking.

The most influential models tend to be those who are rewarding, likable, relevant, and/or similar to the learner —people with whom the learner can identify (Andrews, Hops, & Duncan, 1997; Bandura, 1969; Bussey & Bandura, 1999). A study examining younger adolescents' modeling of their mothers' and fathers' alcohol, marijuana, and cigarette use found that children were more likely to model both parents' substance use when they had a good relationship with their parents (Andrews et al., 1997). Similarly, Jung's (1995) examination of the relationship between college students' drinking and their parent's drinking found there were similarities in opposite-sex gendered pairs when the parent-child relationship was close. Fromme and Ruela (1994) found college students modeled

their parents drinking when they perceived themselves to be similar to their parents. Additional support for the importance of young adults' identification with their parents was found in studies indicating parenting styles had a stronger relationship with college students' drinking via students' psychological processes, such as self-regulation and impulsivity, when the parent was of the same sex as the student (Patock-Peckham et al., 2001; Patock-Peckham & Lopez, 2006).

In addition to modeling, parents influence their children through verbal instruction or "direct tuition" (Bussey & Bandura, 1999, p. 689). When a parent warns his or her adolescent child of the negative consequences associated with drinking, or tries to explain to the adolescent how to drink in moderation, the parent is providing direct tuition. Bussey and Bandura note, however, that "direct tuition is most effective when it is based on shared values and receives widespread social support. Models, of course, do not often practice what they preach" (p. 689). A contradiction between a parent's verbal guidance and his or her own behavior can diminish the impact of the words spoken. Even without such a contradiction though, verbal instruction is considered to be less influential than modeling (Bussey & Bandura; Rosser, 1981).

The present project is grounded in social learning theory and builds on an emerging body of empirical research regarding parents' attempts to influence their college students' drinking behaviors. With a focus on parent-student alcohol communication, the primary goals of this study are twofold: (1) to explore the alcohol messages exchanged between college students and their parents, and (2)

to examine how such messages associate with college students' alcohol consumption and experience of alcohol-related negative consequences. To accomplish these goals, both emerging adult college students and their parents are surveyed to investigate the following: the general occurrence and/or extent of parent-student alcohol communication, the content of such communication, the associations between parent-student alcohol communication and students' dangerous drinking, the associations between such communication and both perceived and actual parental approval, the associations between perceived and actual parental approval and college students' dangerous drinking, and the association between parents' alcohol consumption and students' dangerous drinking. The specific research questions and hypothesis are listed below.

RESEARCH QUESTIONS AND HYPOTHESIS

RQ1 a: To what extent, if any, do students perceive that their parents have talked with them about alcohol use since the student graduated from high school?

RQ 1 b: To what extent, if any, do parents perceive that they have talked with their emerging adult college students about alcohol use since the student graduated from high school?

RQ 1 c: Is there a significant difference between students' perceptions and parents' perceptions regarding the extent to which parents have communicated with them about alcohol?

RQ 2 a: What specific alcohol topics do parents most frequently discuss with their emerging adult college students, according to the students?

RQ 2 b: What specific alcohol topics do parents most frequently discuss with their emerging adult college students, according to the parents?

RQ 2 c: Is there a significant difference between students' reports and parents' reports of most frequently discussed alcohol-communication topics?

RQ 3 a: What is the association between the most frequently discussed parent-student alcohol communication topics as reported by students (as determined in RQ2a), and college students' dangerous drinking, as determined by their alcohol consumption, and by their experience of negative consequences related to their alcohol consumption?

RQ 3 b: What is the association between the most frequently discussed parent-student alcohol communication topics as reported by parents (as determined in RQ2b), and college students' dangerous drinking, as determined by students' alcohol consumption, and by their experience of negative consequences related to their alcohol consumption?

RQ 4 a: What is the association between the type of parent-student alcohol communication topic, as reported by students, and college students' dangerous drinking, as determined by their alcohol consumption, and by their experience of negative consequences related to their alcohol consumption?

RQ 4 b: What is the association between the type of parent-student alcohol communication topic, as reported by parents, and college students' dangerous drinking, as determined by students' alcohol consumption, and by their experience of negative consequences related to their alcohol consumption?

RQ 5 a: What is the association between the types of alcohol topics parents have discussed with their emerging adult children, based on the students' reports, and students' perceived parental approval of them drinking?

RQ 5 b: What is the association between the types of alcohol topics parents have discussed with their children, based on the parents' reports, and parents' actual approval of their emerging adult child drinking?

H1: Students' perception of their parent's approval of them drinking will be associated with students' dangerous drinking in that (a) the more students perceive their parents approve of them drinking, the more students will consume alcohol, and (b) the more students perceive their parents approve of them drinking, the more alcohol-related negative consequences the students will experience.

RQ 6: How much unique variance in college students' (a) alcohol consumption and (b) alcohol-related negative consequences is explained by parents' actual approval, beyond that explained by students' perceived parental approval?

RQ 7: Is there an association between parents' alcohol consumption, as reported by the parents, and their emerging adult children's dangerous drinking, as reported by the students and determined by students' alcohol consumption, as well as students' experience of negative consequences related to their alcohol use?

METHOD

Participants and Procedures

Undergraduate students enrolled in communication classes at a large southwestern university were recruited for the study and asked to recruit a parent. The communication instructors who agreed to allow recruitment in their classes and to offer students extra credit for participating posted a study announcement on their course Blackboard cites. The announcement described the research project, informing students that the purpose of the study was to examine the alcohol messages parents exchange with their emerging adult children who are attending college. The recruitment script also explained the two inclusion criteria: (1) students had to be between the ages of 18 and 25 years old, and (2) they had to have a parent with an e-mail address who they could ask to participate. Students who did not meet the criteria were offered an alternative extra credit assignment. Students who met both criteria and were interested in participating were asked to e-mail the researcher to set up an appointment to come to a computer lab on campus to take the on-line student survey. When setting up the appointments, students were reminded that they needed to be between the ages of 18 and 25 and that they needed to bring a parent's email address with them to their appointment.

When students arrived to their designated computer lab, they checked in with a research assistant, who assigned each participant to a computer that had the on-line survey pulled up, beginning with the consent form. In both the consent form and the survey instructions, students were told to select one parent— the

parent they would be referencing throughout the survey, who also should be the same parent they could e-mail and ask to participate in the parent portion of the study. At the end of the on-line survey, participants were asked to enter an alpha-numeric code that could be used to match up their confidential survey information with their parents' confidential survey information. The code consisted of the students' first and last name initials and the day of the month that they were born. After entering the alpha-numeric code, participants were instructed to call the researcher over to their computer to assist them with the second part of the study.

The second part of the study involved students asking a parent to take the parent version of the on-line survey. Once called over to the student's computer, the researcher showed him/her the recruitment script that was to be emailed to the parent. This script was already saved onto the computer desktop and included the URL address for the parent survey. The researcher explained the information in the parent recruitment script and gave the student the opportunity to ask any questions. The student then was asked to sign into an e-mail account and compose an email to send to the same parent she or he referenced in the student survey. The email included the parent recruitment script, as well as any personal note the student wanted to add. The student was also asked to provide the researcher with the parent's e-mail address so that a reminder email could be sent one week later. Finally, the student received a handout of referral services for agencies dealing with alcohol and drug problems, suicide, sexual assault, and counseling, since the student survey asked about these issues. Student participants received an e-mail

version of the referral information weeks later. Students received extra credit for participation, regardless of whether or not the parent participated.

A total of 220 students came to a designated computer lab on campus to take the on-line survey. To ensure that students were actually reading the questions and following directions, three "checks" were integrated into the survey. The first check occurred approximately half way through the survey, and read as follows: "If you are still paying attention, mark the number two as the answer to this question." Fifteen students did not mark two, and their responses were deleted. The second check occurred approximately three-quarters of the way into the survey, and asked students to mark six as the answer to the question. One person did not and was deleted. The third check occurred towards the end of the survey and read as follows: "Throughout the survey, the parent I have been referring to, and will continue to refer to is my…" Response options included biological mother, biological father, adoptive mother, adoptive father, step-mother and step-father. Three students selected a different parent from the parent they selected at the very beginning of the survey; thus, those three responses were deleted. This resulted in an initial student sample of 201 participants.

A total of 199 parents took the on-line parent survey. To ensure that the parent was actually reading the questions, a "check" was incorporated into the middle of survey, asking the parent to mark the number two if she or he was still paying attention. Three parents failed to do so, and their responses were deleted.

Five additional responses were deleted because the participants did not complete the survey. This resulted in an initial parent sample of 191 parents.

The 191 parent participants and the 201 student participants were then matched up based on the alpha-numeric codes. As explained above, when taking the survey, all participants were asked to enter an alpha-numeric code that consisted of the students' first and last name initials and the day of the month that they were born. Thirty parents entered a code that could not be matched up with the codes entered by the students. Thus, a total of 161 parent-student dyads were created initially based on matching alpha-numeric codes. Of those pairs, three dyads were deleted because the parent who responded to the parent survey was a different parent than the one the student referred to in his or her survey. This resulted in a final sample of 158 parent-student dyads, plus 40 student participants without a matching parent, and 30 parent participants without a matching student.

The final student sample, including those with a matching parent and those without, consisted of 198 students, whose average age was 19.55 (SD = 1.37). Half (50%) of the students were freshmen (50%); the other half was a combination of sophomores (18.7%), juniors (23.2%), and seniors (8.1%). Almost all were full time students (99.5%), and the majority was female (58.6%). Most students identified as White or European American (59.6%), followed by Asian (7.1%), Black or African American (6.6%), Hispanic (6.1%), and Native Hawaiian or Pacific Islander (1%); more than 9% chose other, and 10.1% reported being a combination of these categories. Most students were not members of a

fraternity or sorority (79.3%). Many resided on campus and/or in university housing (47.5%). Off-campus living situations varied: 29.3% students lived off campus with friends or roommates, 16.6% lived with a parent, guardian, or other family member, and 6.6% lived off campus by themselves. Many students (40.4%) said they had not engaged in heavy episodic drinking at all over the previous two weeks, whereas 16.7% said they had done so once, and 12.1% said twice. The remaining students were frequent heavy episodic drinkers: 18.7% reported binge drinking between three and five times over the previous two weeks; 9.1% said between six and nine times, and the remaining 3% said they had done so ten or more times.

The final parent sample, including those with a matching student and those without, was made up of 188 participants, mostly mothers (73.9%). The parent participants ranged in age from 35 to 68 years (M = 50.75, SD = 6.04). Most identified as White or European American (69.1%), followed by Hispanic (8%), Black or African American (5.9%), Asian (4.8%), and Native Hawaiian or Pacific Islander (1.1%); 8.5% chose other, and almost 3% reported being some combination of these categories. The vast majority (78.2%) of parents said they had not engaged in heavy episodic drinking at all over the previous two weeks, whereas 9.6% said they had done so once, and 8% said twice. The remaining parents were frequent heavy episodic drinkers: 3.2% indicated they had met the 5/4 drinks in a sitting criterion between three and five times over the previous two weeks. The remaining 1.1% had done so ten or more times.

There are most likely a variety of reasons as to why some parents did not complete the survey and/or why some of the parents who did complete the survey could not be matched up with their emerging adult child's survey data. It is possible that some parents were too busy to complete the survey or simply uninterested, that they did not understand the directions on how to enter the alpha-numeric code, and/or that they refer to their child by a different name (a nick name perhaps) and therefore used a different initial. It is also possible that some students did not actually email their parent the recruitment script and survey link (the student could have purposely provided an incorrect email address), that some students purposely entered incorrect initials or an incorrect birth date out of concerns that such information would identify them, and/or that they refer to themselves by a different name. To determine if there were significant differences between the group of students who were matched up with their parents' survey data and the group of students who could not be matched up, or between the group of parents who were matched up with their child's survey data and the group of parents who were not matched up, a preliminary data analysis was conducted, comparing the groups on several different variables.

Independent-measure *t* tests were conducted for two of the primary dependent variables investigated in this study: students' alcohol consumption and students' negative consequences. The group of students without a matching parent consumed significantly less alcohol (M = -.26, SD = .76) than the group of students with a matching parent (M = .07, SD = .95), $t(196) = 2.03$, $p = .04$, $\eta^2 =$

.02. The group of students without a matching parent also experienced fewer negative consequences due to their drinking (M = 1.39, SD = .42) than the group of students with a matching parent (M = 1.50, SD = .51); however, this difference was not significant. In terms of the frequency with which the parent and student discussed drinking, the group of students without a matching parent reported talking to their parent slightly less often (M = 3.43, SD = 1.07) than the group of students with a matching parent (M = 3.49, SD = 1.20), but this difference was not significant. Table 1 lists the descriptive statistics for the two student groups.

In an effort to determine if there were significant differences between the parents who did not have a matching student and those parents who did have a matching student, independent-measure t tests were conducted using parents' reports of their own drinking behaviors as a dependent variable. Parents without a matching student reported drinking less (M = -.20, SD = .68) than the parents with a matching student (M = .04, SD = .91), but this difference was not significant. In terms of the frequency with which the parent and student discussed drinking, the group of parents without a matching student reported talking with their child about alcohol slightly less frequently (M = 3.50, SD = 1.14) than did the parents with a matching student (M = 3.58, SD = 1.15), but again, the difference was not significant. Table 2 lists these descriptive statistics for the two parent groups.

Instrumentation

Student Alcohol Consumption. Student Alcohol Consumption was measured using three questions drawn from the Core Alcohol and Drug Survey,

which has shown acceptable reliability in previous studies (Core Institute, 2005; Presley & Pimentel, 2006; Presley & Vineyard, 2004). The first question asked male students how many times over the previous two weeks they had consumed five or more drinks in a sitting, and female students how many times they had consumed four or more drinks.[1] A drink was defined as one bottle of beer, one glass of wine, one wine cooler, one shot glass of liquor, or one mixed drink. The following six-point response scale was used: none, once, twice, three to five times, six to nine times, and ten or more times. The second question asked students how many days they had consumed alcohol in any amount over the previous 30 days. The seven-point response scale read as follows: 0 days, 1-2 days, 3-5 days, 6-9 days, 10-19 days, 20-29 days, and all 30 days. The third question asked students the average number of drinks they consumed in a week. A seventeen-point response scale was used, starting with 0, 1-2, 3-4, 5-6, and so on up to 29-30, and 31 or more. Because these items each used a different metric for the response scales, they were standardized into *z*-scores and averaged to create an interpretable composite variable of student drinking behavior. As such, higher scores indicate heavier and more frequent drinking. The standardized student drinking composite variable demonstrated very strong reliability ($\alpha = .91$).

Student's Experience of Alcohol Related Negative Consequences.

Student's Experience of Alcohol Related Negative Consequences was measured

[1] The CORE survey asks both males and females how many times they have had five or more drinks in a sitting. However, in adherence with the NIAAA's (2007) sex specific definition of binge drinking or dangerous drinking, the sex specific five/four criterion was used in the present study.

using an adapted version of the Core Alcohol and Drug Survey (Core Institute, 2005; Presley & Pimentel, 2006; Presley & Vineyard, 2004). This measure traditionally asks students to indicate how often they have experienced 19 different consequences because of their drinking or drug use over the past year. For the present study, participants were asked to indicate how often they experienced the negative consequences due to their drinking (drug use was not included) "since the school year began:" thus, given that the school year began in mid-August and data was collected from students in late February and early March, students were asked how often they had experienced the negative consequences over the previous six to seven months. Sample items include "had a hangover," "performed poorly on a test or important project," "got into an argument or fight," "been arrested for DWI/DUI," and "Have been taken advantage of sexually." The following six-point response scale was employed: never, once, twice, three to five times, six to nine times, and ten or more times. Students' responses to the 19 consequences due to alcohol use were averaged to create a single negative consequences score (M = 1.49, SD = .50), and this variable demonstrated strong reliability (α = .87).

Parents' Alcohol Consumption. Parents' Alcohol Consumption, based on the parents' self-reports of their own drinking, served as the modeling variable. As such, parents' alcohol consumption was measured with the same items used to measure college students' alcohol consumption. The first question asked fathers how many times over the previous two weeks they had consumed five or more

drinks in a sitting, and mothers how many times over the previous two weeks they had consumed four or more drinks in a sitting. A drink was defined as one bottle of beer, one glass of wine, one wine cooler, one shot glass of liquor, or one mixed drink. The following six-point response scale was used: none, once, twice, three to five times, six to nine times, and ten or more times. The second question asked parents how many days they had consumed alcohol in any amount over the previous 30 days. The seven-point response scale read as follows: 0 days, 1-2 days, 3-5 days, 6-9 days, 10-19 days, 20-29 days, and all 30 days. The third question asked parents the average number of drinks they consumed in a week. A seventeen-point response scale was used, starting with 0, 1-2, 3-4, 5-6, and so on up to 29-30, and 31 or more. The three items were standardized into *z*-scores and then averaged to create a composite variable of parent drinking behavior. Higher scores indicate heavier and more frequent drinking. The standardized parent drinking composite variable demonstrated strong reliability ($\alpha = .86$).

Parent-Student Alcohol Communication Occurrence. Parent-Student Alcohol Communication Occurrence was assessed with eight items asking both students and parents about the existence of such communication, and about the overall frequency and style of the alcohol conversations that had occurred. Both students and parents were asked the same eight questions, though the wording was adjusted appropriately. The first item asked if the parent and student had ever talked about drinking. Response options included Yes, No, and Not Sure. Participants who marked Yes or Not Sure were then asked how often such talks

had occurred since the child graduated from high school. The six response options were as follows: Daily, Approximately Once a Week, Approximately Once a Month, Approximately Every Few Months, Once a Year, and Less Than Once a Year. Participants were also asked the degree to which the parent-student alcohol communication was "an ongoing occurrence" as opposed to "one 'big' conversation," and the degree to which the conversations were "open," "direct," a "one-way conversation" and/or a "two-way conversation." These six items included a seven-point response scale ranging from Strongly Disagree (1) to Strongly Agree (7). Both parents' and students' responses to these items provided descriptive information about the general occurrence of parent-student alcohol communication. Additionally, each item (with the exception of the first item asking if the parent and emerging adult child had ever discussed alcohol) served as a dependent variable in comparisons of student reports and parent reports.

Parent-Student Alcohol Communication Topics. Parent-Student Alcohol Communication Topics were assessed with 68 questions asking about a wide range of alcohol topics, including negative and positive consequences of drinking, parental rules and expectations, rewards and punishments, and harm reduction techniques. Both students and parents were asked the same 68 questions, though the wording was adjusted appropriately. For instance, the first item posed to students read as follows: "Since I graduated from high school, this parent and I have talked about the dangers of drinking and driving." The first item posed to the parents read as follows: "Since he/she graduated from high school,

my child and I have talked about the dangers of drinking and driving." Both student and parent participants were asked to indicate the extent to which they had discussed the topics since the student graduated from high school until the time that they took the survey. Each item included a seven point response scale ranging from Not at All (1) to Very Often (7). Because a comprehensive, valid, and reliable measure of parent-emerging adult alcohol communication topics could not be found in the literature, it was necessary to create a measure. A description of how the survey was composed follows.

Of the 68 topic questions asked in the present study, 26 items were drawn from the Alcohol Based Parent-Teen Communication Scale (Boyle & Boekeloo, 2009; Turrisi et al., 2000), which focused on the negative consequences of drinking, and has demonstrated acceptable reliability in the past (Boyle & Boekeloo, 2009). Sample items included, "Since I graduated from high school, this parent and I have talked about how drinking can make someone physically sick," and "Since I graduated from high school, this parent and I have talked about how difficult it is to make accurate judgments of how drunk you are." Additional questions regarding negative consequences that were not used in the Alcohol Based Parent-Teen Communication Scale were added to the survey; for example: "Since I graduated from high school, this parent has warned me that too much partying could hurt my grades," and "Since I graduated from high school, this parent has warned me that getting drunk increases the chances that I might take advantage of someone sexually." In an effort to not assume that all parents

believe drinking has only negative consequences, seven items were added regarding the benefits of drinking. Sample items included, "Since I graduated from high school, this parent has told me that drinking will help me make friends," and "Since I graduated from high school, this parent has told me that drinking alcohol is a good way to help me relieve stress."

Because numerous exploratory and/or qualitative studies (Baxter et al., 2009; Miller-Day, 2008; Miller-Day & Dodd, 2004) have found that parents often make rules about alcohol consumption, six rule questions were incorporated into the survey, including questions about zero-tolerance rules— i.e., "Since I graduated from high school, this parent has told me I was not allowed to drink period, regardless of how old I am"—and conditional rules— i.e., "Since I graduated from high school, this parent has told me it was okay to drink as long as I did not get drunk," and "Since I graduated from high school, this parent has told me it's okay to drink as long as it doesn't interfere with my school work." Threats of parental disciplinary action, as well as offers of rewards for not using alcohol or drugs, are also sometimes expressed (Miller-Day, 2008; Miller-Day & Dodd), so questions about rewards and punishment were asked. Because past research has indicated that many parents expect their college student children to drink (Lederman & Stewart, 2005; Miller-Day & Dodd), several questions asked if such expectations were discussed. Sample items included, "Since I graduated from high school, this parent has told me she or he expects me to experiment with alcohol," and "Since I graduated from high school, this parent has told me that I

should party while I am in college." Some studies also have found that parents often tell their emerging adults to use their own judgment, or the parents just hint that the child should not drink (Miller-Day, 2008; Miller-Day & Dodd); thus, questions were asked about hinting and using one's own judgment.

Finally, in line with the emerging body of research on students' use of protective behaviors while drinking (Delva, Smith, Howell, Harrison, Wilke, & Jackson, 2004; Martens, Ferrier, Sheehy, Corbett, Anderson, & Simmons, 2005) and with Miller-Day and Dodd's (2004) findings that parents frequently give their children "tools for healthy living" (p. 79), items asking about practical advice on how to stay safe were added. Examples of such questions included, "Since I graduated from high school, this parent has told me to drink a lot of water while I am drinking;" "Since I graduated from high school, this parent has told me to always keep my eyes on my drink," and "Since I graduated from high school, this parent has given me advice on how to handle peer pressure to drink." In short, the 68 items used to assess parent-child alcohol communication topics were drawn from a variety of studies, some quantitative and some qualitative, in hopes of developing a comprehensive list of specific topics. Throughout the development of the survey, two undergraduate research assistants reviewed the questions, making suggestions about content and language style. The data from these 68 survey questions were used to create two different types of communication variables: (1) Topic Type, and (2) the most frequently discussed topics, referred to as the Top Ten Topics.

Student Topic Type. In an effort to reduce these 68 items into somewhat broader topics or dimensions of alcohol communication that could serve as independent variables in the present study, an exploratory factor analysis (EFA) was conducted using the student data. The EFA using the students' responses to the survey yielded three alcohol-communication topic types: (1) Negative Aspects of Drinking (α = .97), which had a mean of 3.51 (*SD* = 1.48), (2) Rules and Sanctions (α = .86), which had a mean of 1.91 (*SD* = 1.22), and (3) the Benefits of Drinking (α = .83), with a mean of 1.34 (*SD* = .61). The results of the factor analysis are detailed in the Results chapter. Table 10 displays the alcohol-communication topic type factors with their respective item loadings, based on students' reports.

Parent Topic Type. Again, to reduce the 68 specific parent-student alcohol communication items into somewhat broader topics or dimensions of alcohol communication, an exploratory factor analysis (EFA) was conducted, this time using the parent data. The EFA using the parents' responses to the survey yielded three alcohol-communication topic types: (1) Negative Aspects of Drinking (α = .97), with a mean of 4.60 (*SD* = 1.69), (2) Drinking in Moderation (α = .90), with a mean of 2.20 (*SD* = 1.37), and (3) Rules (α = .79), with a mean of 2.29 (*SD* = 1.64). These three alcohol-communication factors, or topic types, with their respective item loadings, based on parents' reports, are displayed in Table 13. The results of the factor analysis are detailed in the Results chapter.

Student Top Ten Topics. The Top Ten Topics variable measures the most frequently discussed alcohol communication topics. To create the students' Top Ten Topics variable, the means of all 68 alcohol-communication survey items for the student sample were examined. The items with the ten highest means were averaged: the risk of riding in a car with someone who has been drinking; the dangers of drinking and driving; too much partying could interfere with school; too much partying could hurt grades; encouragement to use one's own judgment; trouble with police; keeping one's eyes on one's drink; doing something later regretted; the ways in which alcohol can impair judgment; and the importance of not being pressured by others into drinking. Together these items demonstrated strong reliability ($\alpha = .90$), with a mean of 4.39 ($SD = 1.46$).

Parent Top Ten Topics. To create the parents' Top Ten Topics variable, the means of all 68 alcohol-communication survey items for the parent sample were examined. The items with the ten highest means were averaged: the risk of riding in a car with someone who has been drinking; the dangers of drinking and driving; too much partying could interfere with school; too much partying could hurt grades; trouble with police; doing something later regretted; the ways in which alcohol can impair judgment; the importance of not being pressured by others into drinking; drinking just to go along with the crowd is bad, and mixing alcohol with medications and other drugs could be dangerous. Together these items demonstrated strong reliability ($\alpha = .95$), with a mean of 5.04 ($SD = 1.70$).

Perceived Parental Approval. Students' Perceived Parental Approval was measured using four items. Three of those items were drawn from Boyle and Boekeloo (2006), and asked students to indicate the degree to which they agreed or disagreed with the following statements: "This parent approves of me drinking alcohol occasionally;" "This parent approves of me drinking alcohol regularly," and "This parent approves of me drinking alcohol heavily." Each item contained a seven point response scale ranging from Strongly Disagree (1) to Strongly Agree (7). The fourth item read, "This parent does not approve of me drinking at all." It included the same response scale, which was then reverse coded for data analysis. Scores to these four items were averaged into an overall Perceived Parental Approval variable, that demonstrated acceptable reliability ($\alpha = .78$). The mean Perceived Parental Approval score was 3.17 ($SD = 1.48$).

Parental Approval. Parental approval was measured using parents' responses to the same four items used to measure students' Perceived Parental Approval, though the items were reworded accordingly (i.e., "I approve of my child drinking alcohol occasionally."). The four items were measured on a seven point response scale ranging from Strongly Disagree (1) to Strongly Agree (7). The fourth item, "I do not approve of my child drinking at all," was reverse coded. Parents' scores to these four items were averaged into an overall Parental Approval variable, that demonstrated somewhat weak, but acceptable, reliability ($\alpha = .69$). The mean Parental Approval score was 2.57 ($SD = 1.32$).

RESULTS

Presented in the order of the research questions and hypothesis, the results begin with descriptive statistics depicting the overall occurrence of parent-student alcohol communication and the most frequently discussed alcohol topics based on both students' and parents' reports. To determine if there were significant differences between the two groups, paired-samples *t* tests were conducted. To examine how parent-student alcohol communication associated with students' dangerous drinking, numerous hierarchical multiple regressions were conducted via the Entry Model, utilizing student alcohol consumption and students' experience of negative consequences related to their drinking as dependent variables. Various alcohol communication variables, based on both students' reports and parents' reports, served as predictors in the regression analyses: the most frequently discussed alcohol topics; more general topic types, as determined by exploratory factor analyses; perceived and actual parental approval of student drinking; and parents' drinking behaviors. Additionally, hierarchical multiple regressions were conducted to examine the association between the alcohol communication topic types and students' perception that their parents approved of their drinking, as well as parents' actual approval. This chapter turns now to the results for the first research question.

Research Question 1

Addressing the general occurrence of alcohol communication between college students and their parents, RQ1a asked to what extent, if any, students

perceived that their parents talked with them about alcohol use since the students graduated from high school, and RQ1b asked to what extent, if any, parents perceived that they have talked with their emerging adult college students about alcohol use since the student graduated from high school. Descriptive statistics for the eight items regarding Parent-Student Alcohol Communication Occurrence were used to answer the first two parts of RQ1.

The vast majority of students (n = 179, 90.4%) reported that their parent had talked to them about drinking since graduating from high school. Fifteen students (7.6%) reported their parents had not talked to them about alcohol since graduating from high school, and four (2%) said they were not sure. Student participants (n = 183) who reported that such conversations had occurred or that they were not sure if such conversations had occurred, were then asked numerous questions about the general frequency, tone and style of the alcohol conversations they had had with their parent. In regard to how often such conversations occurred, more than a third of the student participants indicated that their parent talked to them about drinking every few months (n = 68, 37.2%), and more than a quarter of students said their parent talked to them about drinking about once a month (n = 48, 26.2%). Only 2.2% of participants said such conversations were a daily occurrence (n = 4), and 19.1% (n = 35) said the conversations were a weekly occurrence. The remaining participants indicated their parent talked to them about alcohol once a year or less than once a year (n = 28, 15.3%). When presented with the statement “This parent and I have had just one ‘big’ conversation about

alcohol since I graduated from high school," 84.6% (*n* = 154) reported they disagreed. At the same time, when presented with the statement "Since I graduated from high school, discussions with this parent about drinking have been an ongoing occurrence," 59.3% (*n* = 108) disagreed. Just over 48% (*n* = 88) of students agreed that the conversations were direct, whereas just over 36% (*n* = 66) disagreed. The majority agreed that talks with their parents about alcohol were open conversations (*n* = 117, 63.9%) and two-way discussions in which both parties participated (*n* = 110, 60.1%). When asked about the conversations being more like one-way lectures from the parent, almost 83% (*n* = 151) of the student sample disagreed.

Like the students, the vast majority of parents (*n* = 170, 90.4%) reported that they had talked to their children about drinking. Thirteen parents (6.9%) said they had not, and five said they were not sure (2.7%). Parent participants (*n* = 175) who reported such conversations had occurred or that they were not sure if such conversations had occurred, were then asked numerous questions about overall frequency, tone and style. In regard to how often such conversations occurred, more than a third of parent participants indicated that they had talked to their child about drinking every few months (*n* = 59, 34.1%), and more than a quarter said they had talked to their child about once a month (*n* = 46, 26.6%). Just over 1% (*n* = 2) reported such conversations were a daily occurrence, and almost 24% (*n* = 41) said the conversations were a weekly occurrence. The remaining parent participants indicated they had talked to their children about

alcohol once a year or less than once a year (n = 25, 14.5%). Almost 82% (n = 142) disagreed that the communication could be characterized as a single "big" conversation. Parents' responses about the discussions being ongoing varied, with 42.5% (n = 74) disagreeing, almost 45% (n = 78) agreeing, and 12.6% neutral (n = 22). Compared to the students' reports, far more parents, 74.3% (n = 130), seemed to believe they were direct and that the conversations were open (n = 132, 76%). Almost 67% (n = 116) of parents agreed the conversations were two-way discussions in which both parties participated, and most (n = 138, 78.9%) disagreed that the conversations were one-way lectures.

Part c of the first research question asked if there was a significant difference between students' and parents' perceptions regarding the extent to which alcohol conversations occurred. To answer RQ1c, data from the 158 matched parent-child dyads were subjected to seven paired-samples t tests, comparing parents' scores with students' scores on the following dependent variables: frequency of alcohol communication, the degree to which the conversations were ongoing, open, direct, a one-way lecture, a two-way discussion, and a "big" targeted conversation about alcohol. In an effort to prevent alpha inflation due to employing seven different analyses, an adjusted alpha level of .007 (.05/7) was used to determine significance. Following the recommendations of Levine and Hullett (2002), as well as Green and Salkind (2008), eta squared was calculated as the effect size indice. The results indicated that parents viewed the conversations as significantly more ongoing than did

students, $t(144) = -4.48$, $p < .001$, $\eta^2 = .12$. Parents also perceived the alcohol conversations to be significantly more open, $t(145) = -3.33$, $p = .001$, $\eta^2 = .07$ and direct, $t(146) = -5.43$, $p < .001$, $\eta^2 = .17$. As demonstrated in Table 3, parents reported higher scores on all seven communication items investigated for the first research except for one item— having "just one 'big' conversation about alcohol"— though this difference was not significant.

Research Question 2

The second research question asked about the content and frequency of parent-student alcohol communication. RQ2a asked what specific alcohol topics parents most frequently discussed with their emerging adult children, according to the students, and RQ2b asked the same question, but according to the parents. To answer these two parts of the question, the means of each of the 68 items assessing Parent-Student Alcohol Communication Topics were examined for both students' and parents' reports. Respondents who said they had not discussed alcohol since the student graduated from high school (students $n = 15$; parents $n = 13$) were not asked about specific alcohol topics.

According to the students, the most frequently discussed alcohol topic was the risk of riding in a car with someone who has been drinking ($M = 5.32$, $SD = 1.98$). As shown in Table 4, 72% of students indicated this topic was often discussed. The somewhat broader topic of the dangers of drinking and driving was the fourth most frequently discussed topic ($M = 4.47$, $SD = 1.80$). Academic warnings were also common, including cautions that too much partying could

interfere with school (*M* = 4.67, *SD* = 1.85) and hurt the child's grades (*M* = 4.63, *SD* = 1.97). Students said their parents often encouraged them to use their own judgment when it came to drinking alcohol (*M* = 4.37, *SD* = 1.99), talked about how drinking could get them into trouble with police (*M* = 4.27, *SD* = 2.07), and told them to always keep their eyes on their drink (*M* = 4.18, *SD* = 2.27). The next most frequently discussed topic, according to students, was the warning that drinking too much might cause them to do something they later regretted (*M* = 4.06, *SD* = 2.07), followed by the ways in which alcohol can impair judgment (*M* = 4.04, *SD* = 2.07). Rounding out the students' top ten was the importance of not being pressured by others into drinking (*M* = 3.98, *SD* = 2.01). Overall, students reported that their parents most frequently discussed the negative aspects of drinking, particularly drunk driving and the negative academic consequences of too much partying. An exception to this was the encouragement for students to use their own judgment, reported by slightly more than 52% of students as being discussed often. Table 4 displays the descriptive statistics for all 68 topics based on student reports.

Like their emerging adult college student children, parents said the most frequently discussed alcohol topic was the risk of riding in a car with someone who has been drinking (*M* = 5.81, *SD* = 1.79), with 77.6% of parent participants reporting this topic was often discussed. The broader topic of the dangers of drinking and driving was second (*M* = 5.61, *SD* = 1.69). Also consistent with students' reports, parents said academic warnings were very common, including

cautions that too much partying could interfere with school (M = 5.16, SD = 1.94) and hurt the child's grades (M = 5.15, SD = 2.06). The next most frequently discussed topics were how drinking could get the child into trouble with police (M = 5.09, SD = 2.14) and the ways that alcohol can impair judgment (M = 4.93, SD = 2.13). Parents indicated that peer pressure was commonly discussed: the importance of not being pressured by others into drinking (M = 4.91, SD = 2.05), and drinking just to go along with the crowd is bad (M = 4.72, SD = 2.25). Parents also reported warning their children often about how drinking too much might cause them to do something they later regretted (M = 4.86, SD = 2.17), and how mixing alcohol with medications and other drugs could be dangerous (M = 4.61, SD = 2.36). Table 5 displays the descriptive statistics for all 68 alcohol communication topics based on parents' reports.

Part c of the second research question asked if there was a significant difference between students' and parents' reports of the most frequently discussed alcohol topics. Data from the 158 matched parent-child dyads were subjected to paired-samples t tests, in which parents' mean scores were compared to students' mean scores on the same topics. Twelve specific topics served as the dependent variables and were selected based on the two groups' top ten topics lists. In an effort to prevent alpha inflation due to employing twelve different analyses, an adjusted alpha level of .004 (.05/12) was used to determine significance.

The results indicated that parents' mean score for the frequency with which they discussed the risk of riding in a car with someone who has been

drinking was significantly higher than students' mean score, $t(145) = -3.09$, $p = .002$, $\eta^2 = .06$ for this topic, as was the frequency with which parents reported discussing the dangers of drinking and driving with their child, $t(146) = -6.89$, $p < .001$, $\eta^2 = .25$. Turning to the academic warnings, parents reported cautioning their child that too much partying could interfere with school, $t(146) = -3.11$, $p = .002$, $\eta^2 = .06$, and hurt his or her grades, $t(146) = -3.17$, $p = .002$, $\eta^2 = .07$, significantly more than students reported receiving these warnings. There were also significant differences regarding how drinking could get the emerging adult in trouble with police, $t(146) = -4.02$, $p < .001$, $\eta^2 = .10$, cause the student to do something he or she later regretted, $t(144) = -3.90$, $p < .001$, $\eta^2 = .10$, and impair judgment, $t(143) = -4.47$, $p < .001$, $\eta^2 = .12$. Two peer pressure items had similar results. Parents indicated that conversations about the importance of not being pressured by others into drinking, $t(144) = -4.61$, $p < .001$, $\eta^2 = .13$, and about how drinking just to go along with the crowd was bad, $t(145) = -4.07$, $p < .001$, $\eta^2 = .10$, occurred significantly more often than students reported. Of the twelve alcohol topics investigated here, the only one in which parents' mean score was less than the students' mean score was encouraging the child to use his or her own judgment when it came to drinking alcohol; however, this difference was not significant at the adjusted p value of .004, $t(144) = 2.53$, $p = .01$, $\eta^2 = .04$. For comparison purposes, Table 3 displays the means and standard deviations for both parents and students on these topics. The descriptive statistics differ slightly from those displayed in Table 4 and Table 5 because the latter two tables display the

means and standard deviations based on reports from all participants; whereas the data presented in Table 3 is limited to matching parent-student dyads and the topics investigated via *t* tests.

Research Question 3

The third research question asked about the association between college students' dangerous drinking and the most frequently discussed parent-student alcohol communication topics, based on students' reports (RQ3a) and parents' reports (RQ3b). To answer the first part of this question, a student Top Ten Topics of alcohol communication variable was created based on students' reports of the most frequently discussed topics (see results for Research Question 2a above). Students' responses to the following items were averaged: the risk of riding in a car with someone who has been drinking; dangers of drinking and driving; too much partying could interfere with school; too much partying could hurt grades; encouragement to use one's own judgment; trouble with police; keeping one's eyes on one's drink; doing something later regretted; ways alcohol can impair judgment; and the importance of not being pressured by others into drinking. Together these items demonstrated strong reliability ($\alpha = .90$). The average Top Ten Topics score for student participants was 4.39 ($SD = 1.46$). This newly created Top Ten Topics variable served as a predictor variable in two hierarchical multiple regressions conducted to answer RQ3a.

For the first regression, the control variables were entered in Step 1. Because previous research has shown that college students' dangerous drinking is

predicted by student sex (dummy coded; female = 1, male = 2), year of college, race (dummy coded; White or European American = 1, Black or African American = 2, Hispanic or Latino = 3, Asian = 4, Native Hawaiian or Pacific Islander = 5, American Indian or Alaska Native = 6, Other = 7, More than One Race/Ethnicity = 8), and Greek affiliation (dummy coded; member of fraternity or sorority = 1, not a member of a fraternity or sorority = 2), it was necessary to control for these variables. Also, because there was a significant difference in alcohol consumption between student participants who had a matching parent and those who did not, it was necessary to control for this variable (dummy coded; Student Has a Matching Parent = 1, Student does Not Have a Matching Parent = 2). The student Top Ten Topics variable was entered in Step 2. The student alcohol consumption composite served as the dependent variable.

The final model accounted for 16.5% of the variance in students' alcohol consumption, $R^2 = .19$, adjusted $R^2 = .16$, F (6, 176) = 6.98, $p < .001$ (see Table 6 for complete regression results). The students' Top Ten Topics variable uniquely explained approximately 2% of the variance in students' consumption, $\Delta R^2 = .02$, F (1, 176) = 4.90, $p = .03$. An examination of the standardized coefficients in the final model revealed participant sex, $\beta = .17$, $p = .02$, as well as race, $\beta = -.17$, $p = .02$, Greek affiliation, $\beta = -.31$, $p < .001$, and the student Top Ten Topics variable, $\beta = .15$, $p = .03$ were all significant predictors of students' alcohol consumption.

The second hierarchical multiple regression was conducted to determine how students' reports of the Top Ten Topics associated with students' experience

of negative consequences related to their drinking. Results indicated that the final model accounted for 9% of the variance in students' experience of alcohol-related negative consequences, $R^2 = .12$, adjusted $R^2 = .09$, F (6, 176) = 3.98, $p = .001$ (see Table 7). The students' Top Ten Topics variable uniquely explained approximately 6% of the variance in students' negative consequences, $\Delta R^2 = .06$, F (1, 176) = 12.13, $p = .001$. An examination of the standardized coefficients in the final model revealed participant sex, $\beta = .17$, $p = .02$, as well as Greek affiliation, $\beta = -.17$, $p = .02$, and the student Top Ten Topics variable, $\beta = .25$, $p = .001$, were all significant predictors of students' negative consequences.

The second part of RQ3 asked about the association between college students' dangerous drinking and the most frequently discussed alcohol topics, based on parents' reports. To create the parent Top Ten Topics alcohol communication variable, parents' responses to the following items were averaged (based on results for Research Question 2b): the risk of riding in a car with someone who has been drinking; dangers of drinking and driving; too much partying could interfere with school; too much partying could hurt grades; trouble with police; doing something later regretted; ways alcohol can impair judgment; the importance of not being pressured by others into drinking; drinking just to go along with the crowd is bad, and mixing alcohol with medications and other drugs could be dangerous. Together these items demonstrated strong reliability ($\alpha = .95$). The average score was 5.04 ($SD = 1.70$).

A hierarchical multiple regression was conducted to determine how the parents' Top Ten Topics predictor variable associated with students' alcohol consumption, using data from the matching parent-child dyads in which the parent indicated she or he had spoken to the emerging adult about alcohol and reported on the specific topics (n = 151). The decision to exclude parents without a matching student for this analysis, and to exclude students without a matching parent, was made because the regression included an independent variable based on parents' reports (parents' Top Ten reported alcohol communication topics), a dependent variable based on students' reports (students reports of their own alcohol consumption), as well as control variables based on student reports. The control variables— student sex, year of college, student race, and Greek affiliation— were coded as they were in part a of RQ3 and entered into the first block of the regression. Because this data set only contained students with a matching parent, it was not necessary to control for those who did not have a matching parent. The parents' Top Ten Topics variable was entered in Step 2. The student alcohol consumption composite was entered as the dependent variable.

The final model accounted for 18.3% of the variance in students' alcohol consumption, R^2 = .21, adjusted R^2 = .18, F (5, 145) = 7.73, p < .001 (see Table 8 for complete regression results). The parent Top Ten Topics variable uniquely explained 4.9% of the variance in students' alcohol consumption, ΔR^2 = .05, F (1, 145) = 9.05, p = .003. In the final model participant sex, β = .16, p = .04, Greek

affiliation, β = -.28, $p < .001$, and the parent Top Ten Topics alcohol communication variable, β = .23, $p = .003$, were all significant predictors.

Following the same procedure, a second hierarchical multiple regression was conducted for RQ3b to determine how the parents' Top Ten Topics variable associated with students' negative consequences. The final model accounted for 8.6% of the variance in students' negative consequences, $R^2 = .12$, adjusted $R^2 = .09$, F (5, 145) = 3.83, $p = .003$ (see Table 9). The parents' Top Ten Topics variable uniquely explained 5.4% of the variance in students' negative consequences, $\Delta R^2 = .05$, F (1, 145) = 8.84, $p = .003$. An examination of the standardized coefficients in the final model revealed just one significant predictor: the parents' Top Ten Topics of alcohol communication, β = .24, $p = .003$.

Research Question 4

The fourth research question asked about the association between the type of parent-student alcohol communication topic and college students' dangerous drinking. To answer the first part of this question (RQ4a), an exploratory factor analysis was conducted with the student responses to the 68 survey questions focusing on alcohol communication topics. The EFA was employed to reduce the data into a smaller number of factors that could be used as independent variables in a hierarchical regression. Factor analysis is particularly useful for data reduction, as it empirically determines how items group together in terms of their shared variance and is used, in part, "to summarize patterns of correlations among observed variables" (Tabachnick & Fidell, 2007, p. 608). Once the student data

for the specific parent-child alcohol communication topics were reduced to empirically and conceptually coherent factors, or topic types, two hierarchical multiple regressions were conducted. The communication factors determined by the EFA— the topic types— were entered as predictor variables, and the two measures of students' dangerous drinking served as criterion variables. This same approach was taken with RQ4b, which asks about parents' reports of alcohol-communication topics.

The student data for all 68 items asking about parent-child alcohol communication topics was subjected initially to a principal component factor analysis. Both the KMO index, .89, and Bartlett's Test of Sphericity, x^2 (2278) = 9561.60, $p < .001$, indicated the items were intercorrelated; thus, the exploratory factor analysis was justified. The two primary criteria for determining how many factors to retain were (1) those with eigenvalues larger than 1, and (2) those on the scree test that were located to the left of the elbow or "break point (i.e., a noticeable drop or the point of starting a relatively flat straight line)" (Park, Dailey, & Lemus, 2002, p. 565). Initially, twelve factors with eigenvalues larger than 1.0 emerged and collectively accounted for 71.64% of the variance. However, the eigenvalue criterion often leads to an over-estimate of acceptable factors (Park et al.; Zwick & Velicer, 1986), and an examination of the scree plot suggested that only three factors should be rotated. Thus, the data for the 68 items was analyzed using maximum likelihood factor analysis with oblimin rotation specifying three factors. Oblimin was selected because it is an oblique rotation

method, and there was no reason to assume the communication items would not be correlated (Park et al.).

To determine which survey items loaded onto which factors, a 50/30 selection criterion was employed. If an item's primary loading was greater than .50 and its secondary loadings were less than .30, the item was retained. Additionally, the items had to fit conceptually with their respective factors. Multiple iterations of the factor analysis were conducted, in which complex items and items lacking conceptual fit were dropped, until a clean factor solution with conceptual coherence was obtained. Ultimately, 44 items, loading cleanly onto three factors, were retained. All three factors had eigenvalues larger than 1.0 and collectively accounted for 54.27% of the variance. The first factor included 32 items focusing on the negative aspects of drinking. A sample item in the first factor was "this parent has warned me that too much partying could interfere with school" and "this parent has talked to me about the signs of alcohol poisoning." This first factor accounted for 41.27% of the variance. The second factor, accounting for 6.09% of the variance, encompassed five items regarding parental rules and/or sanctions. This factor included items such as "this parent has threatened to discipline me if I get drunk" and "this parent told me not to go to parties where there was alcohol." The third factor, accounting for 6.91% of the variance, involved the benefits of drinking and included seven items, such as "this parent has told me that drinking will help me make friends" and "this parent has

told me that drinking alcohol is a good way to help me relieve stress." All 44 items and their respective factor loadings are displayed in Table 10.

The three factors determined by the EFA— (1) Negative Aspects of Drinking, (2) Rules and Sanctions, and (3) Benefits of Drinking— reflect three different types of alcohol-communication topics discussed by parents and their emerging adult children based on the students' reports. The 32 items for the Negative Aspects of Drinking topic type demonstrated strong reliability ($\alpha = .97$). This variable had a mean of 3.51 ($SD = 1.48$). The five items for Rules and Sanctions also demonstrated strong reliability ($\alpha = .86$), though the average score was relatively low ($M = 1.91$, $SD = 1.22$). With an alpha of .83, the seven items measuring discussions about the Benefits of Drinking demonstrated good reliability as well, with a mean of 1.34 ($SD = .61$). Of the three topic types, Rules and Sanctions had the strongest anti-drinking message, followed by the Negative Aspects of Drinking. There was a significant, medium sized correlation between Negative Aspects of Drinking and Rules and Sanctions, $r(181) = .37$, $p < .001$. Negative Aspects of Drinking was also significantly correlated with Benefits of Drinking, $r(181) = .29$, $p < .001$. There was a small, but significant, correlation between Rules and Sanctions and Benefits of Drinking, $r(181) = .15$, $p = .04$.

A hierarchical multiple regression was conducted to determine how students' reports of these three types of alcohol-communication topics associated with students' alcohol consumption. The five control variables were entered in Step 1: student sex, year of college, race, Greek affiliation, and whether or not the

student had a matching parent. The Negative Aspects of Drinking variable was entered in Step 2, followed by Rules and Sanctions in Step 3, and the Benefits of Drinking in Step 4. The student alcohol consumption composite was entered as the dependent variable.

Results indicated that as a whole the hierarchical regression model accounted for 13.4% of the variance in students' alcohol consumption, $R^2 = .17$, adjusted $R^2 = .13$, F (8, 174) = 4.15, $p < .001$ (see Table 11 for complete regression results). However, further results indicated that the three communication variables did not predict students' alcohol consumption significantly over and above the control variables, which significantly accounted for 14.6% of the variance in student drinking, $R^2 = .17$, adjusted $R^2 = .15$, F (5, 177) = 7.23, $p < .001$. Adding the Negative Aspects of Drinking dimension of parent-child alcohol communication did little to change the variance accounted for in the dependent variable, $\Delta R^2 = .001$, F (1, 176) = .19, $p = .66$. The results were similar when adding Rules and Sanctions $\Delta R^2 = .000$, F (1, 175) = .02, $p = .88$, and the Benefits of Drinking, $\Delta R^2 = .001$, F (1, 174) = .26, $p = .61$. An examination of the standardized coefficients in the final model revealed significant correlations for participant sex, $\beta = .17$, $p = .04$, as well as race, $\beta = -.16$, $p = .02$, and Greek affiliation, $\beta = -.32$, $p < .001$.

A second hierarchical multiple regression was conducted to determine how each predictor variable contributed to students' experience of negative consequences related to their alcohol consumption. Again, the control variables

were entered in Step 1. The first factor, the Negative Aspects of Drinking topic type, based on student reports, was entered in Step 2. The Rules and Sanctions variable was entered in Step 3, followed by the Benefits of Drinking dimension in Step 4. Negative Consequences was entered as the dependent variable. The final model failed to significantly predict students' negative consequences, $R^2 = .08$, adjusted $R^2 = .04$, F (8, 174) = 1.91, $p = .06$ (see Table 12).

The second part of RQ4 asked about the association between the type of parent-student alcohol communication topic, as reported by parents, and college students' dangerous drinking. The parent data for all 68 items asking about parent-child alcohol communication topics was subjected initially to a principal component factor analysis. Both the KMO index, .887, and Bartlett's Test of Sphericity, x^2 (2278) = 9122.74, $p < .001$, indicated the items were intercorrelated; thus, the exploratory factor analysis was justified. The same two criteria employed with the students' reports were used with the parents' reports: eigenvalues larger than 1.0 and factors located to the left of the break point on the scree test (Park et al., 2002). Initially, 13 factors with eigenvalues larger than 1.0 emerged and collectively accounted for 73.58% of the variance. An examination of the scree plot suggested that only three factors should be rotated; thus, the data for the 68 items was analyzed using maximum likelihood factor analysis with oblimin rotation specifying three factors.

As with the data based on students' reports, a 50/30 selection criterion was utilized to determine which items loaded on which factors. The items also had to

fit conceptually with their respective factors. Multiple iterations of the factor analysis were conducted with the parent data, in which complex items and items lacking conceptual fit were dropped, until a clean factor solution with conceptual coherence was obtained. Ultimately 31 items were retained. All three factors had eigenvalues larger than 1.0 and collectively accounted for 60.36% of the variance. The first factor included 21 items, items similar to those that loaded on the first topic-type based on the students' reports, focusing on the negative aspects of drinking. This factor accounted for 44.33% of the variance. The second factor encompassed seven items focusing on ways to drink in moderation. Examples included "I have told my child to eat while he/she is drinking so that he/she doesn't get too drunk," and "I have told my child to pace himself/herself when she/he is drinking." This factor accounted for 10.66% of the variance. The third factor, involving parental rules on drinking, included three items and accounted for 5.37% of the variance. All 31 items and their respective loadings are displayed in Table 13.

The three factors determined by the EFA conducted with the parents' survey responses— (1) Negative Aspects of Drinking, (2) Drinking in Moderation, and (3) Rules— reflect three different types of alcohol communication topics discussed by parents and their emerging adult children, based on the parents' reports. The 21 items for the Negative Aspects of Drinking demonstrated strong reliability ($\alpha = .97$), with a mean of 4.60 ($SD = 1.69$). The seven items for the Drinking in Moderation dimension of parent-child alcohol

communication (α = .90) also demonstrated strong reliability, with a mean of 2.20 (*SD* = 1.37). The three items measuring parental Rules had acceptable reliability (α = .79), with a mean of 2.29 (*SD* = 1.64). Of the three factors, Rules had the strongest anti-drinking message, followed by the Negative Aspects of Drinking. There was a significant, medium sized correlation between Negative Aspects of Drinking and Drinking in Moderation, $r(173) = .42$, $p < .001$. Negative Aspects of Drinking was also significantly correlated with Rules, $r(173) = .33$, $p < .001$.

To determine how parents' reports of the alcohol communication topic types associated with students' alcohol consumption, a hierarchical multiple regression was conducted using data from the matching parent-child dyads in which the parent indicated she or he had spoken to the emerging adult about alcohol and reported on the specific alcohol-communication topics. The control variables— student sex, year of college, student race, and Greek affiliation— were entered into the first block. Because this data set only contained students with a matching parent, it was not necessary to control for those who did not have a matching parent. The first factor, the Negative Aspects of Drinking dimension of parent-child alcohol communication, based on parents' reports, was entered in Step 2, followed by Drinking in Moderation in Step 3, and Rules in Step 4. The student alcohol consumption composite was entered as the criterion variable.

Results indicated that the hierarchical regression model accounted for 20.2% of the variance in students' alcohol consumption, $R^2 = .24$, adjusted $R^2 = .20$, $F(7, 143) = 6.42$, $p < .001$ (see Table 14 for complete regression results).

The four control variables— student sex, year of college, student race, and Greek affiliation— significantly accounted for 13.8% of the variance in student drinking, $R^2 = .16$, adjusted $R^2 = .14$, F (4, 146) = 7.01, $p < .001$. The Negative Aspects of Drinking dimension of alcohol communication added 3.8% to the variance accounted for in the dependent variable, $\Delta R^2 = .04$, F (1, 145) = 6.79, $p = .01$. Adding Drinking in Moderation did not significantly add to the variance, $\Delta R^2 = .01$, F (1, 144) = 1.75, $p = .19$. Rules significantly added 3.1% to the variance accounted for in students' alcohol consumption, $\Delta R^2 = .03$, F (1, 43) = 5.81, $p = .02$. An examination of the standardized coefficients in the final model revealed significant correlations for Greek affiliation, $\beta = -.22$, $p = .004$, Negative Aspects of Drinking, $\beta = .24$, $p = .01$, and Rules, $\beta = -.20$, $p = .02$.

To determine how parents' three types of alcohol communication topic variables associated with students' experience of negative consequences related to alcohol use, another hierarchical multiple regression was conducted. The control variables were entered into the first block, followed by the Negative Aspects of Drinking in Step 2, Drinking in Moderation in Step 3, and Rules in Step 4. Negative consequences served as the criterion variable.

The final model accounted for 6.8% of the variance in students' negative consequences, $R^2 = .11$, adjusted $R^2 = .07$, F (7, 143) = 2.57, $p = .02$ (see Table 15). The control variables significantly accounted for 3.7% of the variance in the dependent variable, $R^2 = .06$, adjusted $R^2 = .04$, F (4, 146) = 2.45, $p = .049$. The Negative Aspects of Drinking communication factor accounted for an additional

4%, $\Delta R^2 = .04$, F (1, 145) = 6.48, $p = .01$. Adding the Drinking in Moderation factor and Rules did not significantly add to the variance accounted for in students' negative consequences. In the final model there was just one significant correlation: the Negative Aspects of Drinking, $\beta = .23$, $p = .02$.

Research Question 5

The first part of RQ5 asked if there was an association between the types of alcohol communication topics parents discussed (based on student reports) and students' perceived parental approval of them drinking. A hierarchical multiple regression was conducted in which the three communication topic type variables determined by the exploratory factor analysis of the student data (explained in RQ4a) served as the predictor variables. The first factor, the Negative Aspects of Drinking, was entered in Step 1. The Rules and Sanctions dimension of parent-child alcohol communication was entered in Step 2, followed by the Benefits of Drinking in Step 3. Students' perceived parental approval of their drinking was entered as the criterion variable.

Results indicated that the final model accounted for 31.5% of the variance in students' perception that their parents approved of them drinking, $R^2 = .33$, adjusted $R^2 = .32$, F (3, 179) = 28.94, $p < .001$ (see Table 16). The first factor, the Negative Aspects of Drinking, did not significantly account for any of the variance in perceived parental approval, $R^2 = .003$, adjusted $R^2 = -.002$, F (1, 181) = .60, $p = .44$. Adding Rules and Sanctions significantly added 26.8% to the variance accounted for, $\Delta R^2 = .27$, F (1, 180) = 66.16, $p < .001$. The third alcohol

communication topic type based on student reports, the Benefits of Drinking, significantly added 5.5% to the variance accounted for in students' perception of their parents' approval, $\Delta R^2 = .06$, F (1, 179) = 14.72, $p < .001$. An examination of the standardized coefficients in the final model indicated that all three types of alcohol communication topic factors were significant predictors: Negative Aspects of Drinking, $\beta = .19$, $p = .005$, Rules and Sanctions, $\beta = -.57$, $p < .001$, and Benefits of Drinking, $\beta = .25$, $p < .001$.

RQ5b asked if there was an association between parents' actual approval of their college students' drinking and the types of alcohol communication topics parents discussed with their emerging adult children, based on parent reports. To answer this part of the question, a hierarchical multiple regression was conducted in which the three communication topic type variables determined by the exploratory factor analysis of the parent data (explained in RQ4b) served as the predictor variables. The first factor, the Negative Aspects of Drinking, based on parent reports, was entered in Step 1. The Drinking in Moderation variable was entered in Step 2, followed by Rules in Step 3. The Parental Approval variable, based on parents' reports of their approval of their child drinking, was entered as the criterion variable.

The final model accounted for 33.9% of the variance in parents' approval of their child drinking, $R^2 = .35$, adjusted $R^2 = .34$, F (3, 171) = 30.78, $p < .001$ (see Table 17 for complete regression results). The first factor, the Negative Aspects of Drinking based on parents' reports, did not significantly account for

any of the variance in parental approval, $R^2 = .01$, adjusted $R^2 = .005$, F (1, 173) = 1.96, $p = .16$. Adding the Drinking in Moderation topic type significantly added 20.2% to the variance accounted for, $\Delta R^2 = .20$, F (1, 172) = 44.19, $p < .001$. Rules contributed an additional 13.7% to the variance accounted for in parents' approval, $\Delta R^2 = .14$, F (1, 171) = 36.17, $p < .001$. An examination of the standardized coefficients in the final model indicated that two of the three types of alcohol communication topic types were significant predictors: Drinking in Moderation, $\beta = .41$, $p < .001$ and Rules, $\beta = -.40$, $p < .001$.

Hypothesis 1

The hypothesis predicted that the more students perceived their parents approved of them drinking, the more alcohol students would consume (H1a), and the more alcohol-related negative consequences students would experience (H1b). To test the first part of this hypothesis, a hierarchical multiple regression was conducted using reports from all student participants. The control variables were entered in Step 1, followed by students' perception of their parents' approval of them drinking in Step 2. The student alcohol consumption composite served as the criterion variable.

The final model accounted for 19.5% of the variance in students' alcohol consumption, $R^2 = .22$, adjusted $R^2 = .20$, F (6, 191) = 8.94, $p < .001$ (see Table 18). Students' perception of their parents' approval uniquely explained approximately 5.8% of the variance in students' alcohol consumption, $\Delta R^2 = .06$, F (1, 191) = 14.21, $p < .001$. Participant sex, $\beta = .14$, $p = .04$, Greek affiliation, β

= -.27, $p < .001$, and perceived parental approval, $\beta = .26$, $p < .001$ were all significant predictors of students' consumption. These results support H1a.

To test the second part of the hypothesis, another hierarchical multiple regression was conducted, using students' negative consequences as the criterion. The final model accounted for 4.9% of the variance in students' negative consequences, $R^2 = .08$, adjusted $R^2 = .05$, F (6, 191) = 2.69, $p = .02$ (see Table 19). Students' perception of their parents' approval uniquely explained 2.4% of the variance in students' negative consequences, $\Delta R^2 = .02$, F (1, 191) = 4.99, $p = .03$. An examination of the standardized coefficients in the final model revealed Greek affiliation, $\beta = -.15$, $p = .04$, and perceived parental approval, $\beta = .17$, $p = .03$, were significant predictors. This analysis of the data supports H1b; however, as will be shown next, when the sample is limited to students who had a matching parent, rather than all student participants, the second part of the hypothesis comes into question.

Research Question 6

The sixth research question asked how much unique variance in college students' (a) alcohol consumption and (b) negative consequences was explained by parents' actual approval, beyond that explained by students' perceived parental approval. To answer this question, two hierarchal regressions were conducted using the parent-student dyad data. For the first regression, student alcohol consumption was entered as the criterion variable. The control variables were entered in Step 1: student sex, year of college, race, and Greek affiliation.

Students' perception of their parents' approval of them drinking was entered in Step 2, and parents' actual approval was entered in Step 3.

Results indicated that the final model accounted for 18.4% of the variance in students' alcohol consumption, $R^2 = .22$, adjusted $R^2 = .18$, F (6, 151) = 6.90, $p < .001$ (see Table 20 for complete regression results). Similar to the results found in the analysis employing all the student participants (see H1a), students' perception of their parents approval uniquely explained approximately 5.4% of the variance in students' alcohol consumption, $\Delta R^2 = .05$, F (1, 152) = 10.43, $p = .002$. However, adding parents' actual approval did not significantly add to the variance accounted for in students' alcohol consumption, $\Delta R^2 = .01$, F (1, 151) = 1.03, $p = .31$. In the final model year in school, $\beta = -.17$, $p = .03$, Greek affiliation, $\beta = -.26$, $p < .001$, and perceived parental approval, $\beta = .20$, $p = .02$ were all significant predictors of students' alcohol consumption.

The second hierarchical regression employed to answer RQ6b was conducted in the same way as the first; however, students' negative consequences was entered as the criterion variable. The final model accounted for 4.6% of the variance in students' alcohol consumption, $R^2 = .08$, adjusted $R^2 = .05$, F (6, 151) = 2.25, $p = .04$ (see Table 21). In contrast to the results found in the analysis employing all the student participants (see H1b), students' perception of their parents' approval did not uniquely explain any of the variance in students' negative consequences, $\Delta R^2 = .02$, F (1, 152) = 3.17, $p = .08$. Adding parents' actual approval did not significantly add to the variance accounted for, $\Delta R^2 =$

.003, F (1, 151) = .47, p = .49. In the final model Greek affiliation, β = -.16, p = .04, was the only significant predictor of students' negative consequences.

Research Question 7

The final research question examined the potential influence of parental modeling, asking if there was an association between parents' alcohol consumption, as reported by parents, and students' dangerous drinking. Using data from the matching parent-child dyads (n=158), a hierarchical multiple regression was conducted using students' alcohol consumption as the criterion. The control variables were entered in Step 1. The parent alcohol composite score was entered in Step 2.

Results indicated that the final model accounted for 15.5% of the variance in students' alcohol consumption, R^2 = .18, adjusted R^2 = .16, F (5, 152) = 6.76, p < .001 (see Table 22 for complete regression results). Further results indicated that parents' alcohol consumption significantly predicted students' alcohol consumption over and above the control variables. The modeling variable significantly added 2.6% to the variance accounted for in the dependent variable, ΔR^2 = .03, F (1, 152) = 4.89, p = .03. An examination of the standardized coefficients in the final model revealed significant correlations for student sex, β = .17, p = .03, student race, β = -.16, p = .03, Greek affiliation, β = -.29, p < .001, and parent drinking, β = .17, p = .03.

A second hierarchical multiple regression was conducted on the parent-child dyad (n=158) data to examine the association between parents' alcohol

consumption and students' experience of negative consequences related to alcohol use. The control variables were entered in Step 1, followed by the parent alcohol composite score in Step 2. Students' negative consequences served as the criterion variable. The final model accounted for 4.1% of the variance in students' negative consequences, $R^2 = .07$, adjusted $R^2 = .04$, F (5, 152) = 2.36, $p = .04$ (see Table 23). However, further results indicated that parents' alcohol consumption did not significantly predict students' negative consequences over and above the control variables, $\Delta R^2 = .01$, F (1, 152) = 1.93, $p = .17$. The only significant predictor in the final model was Greek affiliation, $\beta = -.17$, $p < .03$.

DISCUSSION

While a vast body of research has examined the ways parents and families influence younger adolescents' substance use (e.g., Hawkins et al., 1992; Kumpfer et al., 1998), studies investigating the ways in which parents influence their emerging adults' substance use have been far less prevalent. The present project addressed this gap in the research, focusing on a major public health issue: college students' dangerous drinking. The NIAAA (2002a, 2002b, 2002c) and the USDHHS (2007) have called for research-based, multi-faceted prevention efforts that engage universities, students, families, and communities to combat college drinking. In an effort to help meet that call, this study centered on parent-student communication, with two overarching goals: (1) to examine the content and frequency of alcohol messages exchanged between college students and their parents, and (2) to examine how such messages associate with college students' dangerous drinking. Because of the paucity of research on this topic, the present project was exploratory in nature.

A discussion of the results and their implications is provided below. It will be argued that this study makes several important contributions to the college drinking literature. One such contribution is a more comprehensive view of the content and multi-dimensional nature of parent-student alcohol communication, a view that is based on empirical data collected from both college students and their parents. This data could aid in the development of a valid and reliable parent-student alcohol communication measure that is message-specific and taps into the

various dimensions of parent-student alcohol communication. Additionally, the present study furthers extant research on parental approval by investigating both actual parental approval and perceived parental approval as potential predictors of college students' dangerous drinking, and by investigating how both approval variables are associated with parent-child alcohol communication. Collectively, the results of this study suggest that the messages parents exchange with their emerging adult children about alcohol are associated with college students' drinking, though not always in the direction that parents or alcohol prevention experts might hope. The content of those messages matters. Such findings have practical implications for the design of parent prevention programs and provide direction for future research regarding the impact parents can have on their college students' drinking. The following detailed discussion of the results and their implications is divided into three major sections: (1) the occurrence of parent-student alcohol communication, (2) the content of parent-student alcohol communication, and (3) predictors of college students' drinking outcomes. The chapter will conclude with a description of the limitations of the present project and suggestions for future research.

Occurrence of Parent-Student Alcohol Communication

The vast majority of college students and parents in this study said they had engaged in conversations about alcohol since the emerging adult child graduated from high school. Because starting college is a transition period for young adults, a transition that usually involves increased freedoms and exposure

to peers who drink (Arnett, 2004; Borsari & Carey, 2001; Lederman & Stewart, 2005; NIAAA, 2002b), one might expect most parents would discuss alcohol with their emerging adult children before they start college. However, findings from previous studies (Boyle & Boekeloo, 2009; Miller-Day & Dodd, 2004) had suggested the occurrence of parent-student alcohol communication during, or immediately preceding, the child's college years, might not be as prevalent as more general substance use communication occurring during the students' high school or middle school years (Baxter et al., 2009; Miller-Day, 2005, 2008). The present study indicates that is not the case, with more than 90% of college students and parents reporting having had conversations about alcohol since the emerging adult child graduated from high school. These results are consistent with studies that found the proportion of parents who talked about substance use with their children during a broader time frame of adolescence ranged between 91% and 97% (Baxter et al., 2009; Miller-Day, 2005, 2008). Since most parents seem to be already having conversations with their emerging adults about alcohol, college drinking prevention efforts aimed simply at getting parents to talk to their kids about drinking likely are unnecessary.

Students and their parents in the present study generally seemed to agree on the overall frequency of alcohol conversations, with almost two-thirds reporting that such communication occurred once a month or every few months. Given this frequency, it was not surprising that the vast majority of both parents and students said they would not characterize their alcohol communication as a

single, big event, but more of an ongoing conversation. These findings are consistent with Miller-Day and Dodd's (2004) qualitative work, in which more than two-thirds of participants said their substance abuse discussions were ongoing conversations woven into their everyday lives and interactions, as opposed to the "more targeted one-shot 'drug talks'" that are often depicted in media campaigns encouraging parents to talk to their kids about substance use (p. 69). Building on Miller-Day and Dodd's work, the present project offered a quantitative comparison of parents' reports and students' reports of the general frequency, tone and style of their alcohol conversations, which is discussed next.

Parent participants perceived the alcohol-related communication with their emerging adult college children as significantly more ongoing, open, and direct than student participants perceived. The effect sizes, which ranged from .07 to .17, suggested these differences in perception were not large, but also not minor, particularly in regard to the directness of the conversations. Additionally, for ten of the twelve specific alcohol topics that were investigated via *t* tests (topics that were most frequently discussed), parents reported discussing them significantly more often than did the students. Most of the effect the sizes were in the small to medium range, though the effect size for the dangers of drinking and driving was slightly larger (.25). Taken together, these results are consistent with Baxter et al.'s (2009) study on health-related rules, in which parents' scores for directness, justification, compliance and sanctioning for their alcohol rules were significantly higher (with small to medium effect sizes) than the college students' scores. The

results of the current study are also in line with Booth-Butterfield and Sidelinger's (1998) findings that parents perceived significantly more openness in regard to the family's general communication patterns than did students. The parent-child differences found in the present study could be interpreted in a variety of ways.

One possible interpretation is the self-serving bias. In an effort to see themselves as competent communicators or good parents, mothers and fathers might have remembered being more direct and open than they actually were, or remembered talking more often to their children than they actually did. A second related interpretation is that parents were influenced by the social desirability bias, answering the survey in ways they felt might make a more favorable impression on the researcher. Because parents were recruited and reminded about the survey via e-mail, and because of the use of the alpha-numeric code (constituting the student's initials and day of birth) to match parent data with the student data, parents may have felt they were identifiable to the researcher and, as such, over-reported various aspects of their alcohol discussions. A third interpretation is that students perceived less direct, open, ongoing and frequent alcohol conversations because they engaged in selective listening, tuning out the talks, perhaps not wanting to hear what their parents had to say about drinking. Without observing the actual conversations that took place, it is difficult to determine which interpretation is most likely. The results suggest, though, that prevention efforts might need to target parents' communication skills to help them talk to their emerging adults in a more direct manner, or in a manner that students perceive as

more direct, particularly when parents do not approve of their students' drinking, which is discussed in more detail in a later section of this chapter.

Content of Parent-Student Alcohol Communication

An important contribution of this project is a more comprehensive understanding of what parents and students talk about when they discuss drinking, and how those alcohol topics associate with perceptions of parental approval. As Miller-Day and Dodd (2004) pointed out, parent-child communication about substance use is "multidimensional" and "understanding its content is important to determining the effect of the communication on adolescent behavior" (p. 71). The current study found parent-student alcohol conversations tend to cover a very limited range of topics.

Parents discussed the negative consequences of drinking most often, focusing primarily on drunk driving and academics. These results are consistent with other parent-student communication studies that found parents tended to emphasize the negatives of drinking (Miller-Day and Dodd, 2004), most commonly addressing drunk driving (Baxter et al., 2009; Boyle & Boekeloo, 2009). In addition to the risks of drinking and driving and the negative impact of partying on students' academics, the most commonly discussed topics in the present study included the risks of getting into trouble with police, how drinking too much might cause students to do something they later regretted, having their judgment impaired, and the importance of not being pressured by others into drinking. While these are all important topics, it is of particular concern that there

was not more frequent discussion of other negative consequences of drinking, such as being more likely to engage in risky sexual activity, or the risk of becoming alcohol-dependent.

As discussed in a previous chapter, the co-occurrence of alcohol and sexual activity is pervasive on college campuses (Lederman & Stewart, 2005; Littleton, et al., 2009; Paul & Hayes, 2002; Paul et al., 2000) and poses a serious health threat, particularly to women (Abbey et al., 2005; Benson et al., 2007; Dye & Upchurch, 2006; Gidycz et al., 2007; Paul & Hayes, 2002; Sims, Noel, & Maisto, 2007). Yet participants' responses to the multiple survey items asking about alcohol and sex conversations suggested this topic was not commonly discussed between parents and their college children. As indicated in Table 4, less than a third of students reported having conversations often with their parent about the risks of being taken advantage of sexually. Less than 16% reported that the risk of taking advantage of another person was discussed often, and slightly more than 25% of students said their parent had talked to them often about the negative consequences of mixing alcohol with sex. While a higher proportion of parent participants reported talking to their emerging adult children about these sex specific topics, the results still indicate that the majority of parents did not talk at all, or did not talk often, to their students about the sexual risks associated with alcohol use. Possible explanations for these findings are that parents are uncomfortable talking about sex, or that they would rather not think about their child engaging in promiscuous or sexually aggressive behaviors. Whatever the

reason, failure to discuss the ramifications of engaging in sexual activity while under the influence of alcohol could be problematic, since previous research has found that the more often parents discuss sex with their adolescents, the more likely students are to engage in safe sex practices (Booth-Butterfield & Sidelinger, 1998; Hutchinson & Cooney, 1998; Miller, Levin, Whitaker & Xu, 1998).

Another negative consequence of college drinking is the risk of becoming alcohol dependent. As discussed in an earlier chapter, previous research has shown that almost a third of college students meet the diagnostic criteria for alcohol abuse, and slightly more than 6% meet the criteria for alcohol dependence (Knight et al., 2002). Yet when asked in the present study about conversations regarding how social drinking can lead to alcoholism, only 21.3% of students said this topic was discussed often. Similarly, when asked about being told to come talk to their parent if they thought they had a drinking problem, approximately 27% of students said this was a common occurrence. Approximately a third of parent participants said these two topics were discussed often.

The limited discussions about alcoholism could be due to the impression that heavy drinking is normative during college and that parents expect their emerging adults to experiment with alcohol during this time. Parents and students might be unaware of the signs of alcoholism or its prevalence amongst college students. As Knight et al. (2002) discussed, many students in their study who met the criteria for alcohol abuse and dependence did not identify themselves as such or seek treatment. Knight and colleagues suggested that schools implement

programs to facilitate the early identification of alcohol abuse or dependence to help problematic users. Perhaps, if parents were aware of the signs of alcohol abuse and dependency, as well as more aware of their emerging adults' actual drinking behaviors, parents could be part of early identification efforts. Such efforts would likely require increased parent-student communication about the students' alcohol behaviors (i.e., attempts to gain parental knowledge about their children's drinking), as well as increased parental education about alcoholism.

Because this study did not ask parents why they talked to their emerging adult children about the topics that they did, it is not clear as to why drunk driving and academic consequences were discussed most, or why other negative consequences were not discussed. Parents could be unaware of alcohol related consequences beyond drunk driving and school, or unaware of their pervasiveness. It is also possible that parents are aware, but believe such consequences happen only to other students, that their child is "immune," so to speak, and/or that their child does not consume enough alcohol to experience such consequences. Previous research has shown parents often under-estimate the degree to which their college children engage in risky health behaviors such as alcohol and marijuana use (Bylund, Imes, & Baxter, 2005). Given that both this study, as well as Boyle and Boekeloo's (2009) study, found that a very limited range of negative consequences are discussed, future research should investigate both parents' knowledge about negative consequences, as well as their sense of efficacy in talking to their children about such consequences.

In addition to the negative consequences of drinking, rule setting about alcohol use was a dimension of parent-student communication identified in the college drinking literature (Baxter et al., 2009; Miller-Day, 2008; Miller-Day & Dodd, 2004). This study found that parental rule setting about college students' alcohol use, particularly abstinence type rules, was not widespread. Telling students they were not allowed to drink regardless of how old they were was one of the least commonly discussed topics asked about in the alcohol communication survey. As shown in Table 4 and Table 5, almost 92% of students and almost 83% of parents reported that this rule was not discussed at all or not often. Additionally, the majority of participants in both groups reported that a zero-tolerance rule for alcohol, as well as a conditional rule that the student was not allowed to drink before turning 21 years old, generally were not discussed much. These findings are not surprising for several reasons. First, emerging adulthood is a time when students typically try to become more autonomous and parents try to engage in less monitoring and rule enforcement (Arnett, 2004). Such relational goals might be impeded by setting no-drinking type rules. Second, given the general parental expectation that college students will experiment with alcohol (Miller-Day & Dodd, 2004; Lederman & Stewart, 2005), many parents might not have such rules. Third, less than 17% of the participants in this study reported living with a parent, guardian or other family member, making parental rule enforcement and monitoring difficult. It is worth noting, though, that this study's results regarding parental rules are somewhat inconsistent with previous research.

The percentage of parents setting alcohol related rules with their late adolescent children seems to range from less than 8% to 60%, depending on the study, the type of rule being asked about, the time frame in which the rule setting occurred, and whether the participants are parents or students (Baxter et al., 2009; Miller-Day, 2008; Miller-Day & Dodd, 2004). Because of the varying results, varying foci, and varying measures employed in the studies cited here, including the current project, a clear picture regarding the extent to which parents set abstinence related alcohol rules with their emerging adult children cannot be drawn. Because this study found a significant, inverse relationship between college students' alcohol consumption and parents' reports of rule setting, a finding that is discussed in more detail in the following section of this chapter, it is important for researchers to determine when, why, and how parents set (or fail to set) abstinence rules.

Rather than setting abstinence rules, many parents tell their college student children to use their own judgment when it comes to drinking (Miller-Day, 2008; Miller-Day & Dodd, 2004). In the present study, more than 52% of students and 43% of parents reported that telling students to use their own judgment occurred often in parent-child alcohol conversations. The topic made the students' list of the top ten most frequently discussed topics, but came in twentieth on the parents' list. Additionally, this was the only specific topic on either of the top ten topic lists in which the mean reported by students was higher than that reported by parents. The difference between the two groups was significant at the .01 level,

but not at the adjusted .004 level. One possible explanation for this difference is that students are inferring a "use your own judgment" message from other alcohol related messages expressed by their parents, or that parents are framing other alcohol messages in this way. For instance, when parents discuss the potential negative consequences of drinking, they may be presenting the information in a manner that says, "Now you know the risks. What you do with this information is up to you." The feasibility of this interpretation of the results is underscored by the lack of a significant association between actual parental approval of the students' drinking and parents' reports of discussing the negative consequences of drinking. Telling students to use their own judgment could be an effort to encourage autonomy and/or to help the emerging adult child learn that he or she has to make his or her own decisions about substance use. However, students could construe such efforts as the parent not feeling strongly one way or the other about the student's drinking behaviors. In other words, when a parent tells a student, "use your own judgment," the student might feel the parent does not necessarily disapprove of him or her drinking.

Past parental approval research generally has not investigated how parents express their attitudes toward their emerging adults' drinking; thus, the present project advances this line of research by examining the approval construct from a communications lens. Understanding the relationship between what parents say about alcohol and their children's perception that their parents approve or disapprove of their drinking is important because, as will be elaborated upon

further in the following section, this study, like previous studies (Abar & Turrisi, 2008; Kuther & Higgins-D'Alessandro, 2003; Walls et al., 2009; Wood et al., 2004), found that perceived parental approval was positively associated with students' dangerous drinking. An examination of the association between students' reports of alcohol-communication topic types (as determined by the exploratory factor analysis) and perceived parental approval suggested that the best way for parents to convey disapproval was to discuss rules and sanctions for the student's alcohol use. Students' reports of parental Rules and Sanctions had a very strong, negative relationship with students' perceptions that their parents approved of their drinking ($\beta = -.57$). This communication topic type uniquely accounted for 26.8% of the variance in students' perceptions of their parents' approval. Conversely, when parents (according to the students) talked to their children about the benefits of drinking, the students perceived approval ($\beta = .25$), which would be expected. The significant, positive association between students' reports that their parents talked to them about the negative aspects of drinking and perceived parental approval ($\beta = .19$) may be surprising at first glance; however, as touched on in the preceding discussion regarding telling students to use their own judgment, it is possible that in the process of discussing the negative consequences of drinking, students interpreted the talks as their parents not necessarily disapproving of their children's drinking. It is also possible that students believed their parents felt drinking was acceptable, as long as the negative consequences were not incurred. Future studies employing qualitative

methods may be needed to gain a clearer understanding of how and why students interpret their parents' alcohol messages as they do.

The present study also examined actual parental approval and its association with the alcohol communication topic types based on the EFA results using parents' reports. As found in the student data, there was a strong, negative association between parents' reports of Rules and actual parental approval of the student drinking ($\beta = -.40$). Drinking in Moderation— an alcohol communication topic type that emerged in the EFA using parents' reports but not in the EFA using students' reports— had a strong, positive association with actual parental approval ($\beta = .41$). In both the investigation of predictors of actual parental approval and the investigation of predictors of perceived parental approval, the alcohol communication topic types (as determined by the exploratory factor analyses) accounted for approximately a third of the variance in the approval variables.

From the present study's examination of the content of alcohol communication between college students and their parents, several inferences can be made. First, the range of alcohol topics that are discussed *often* is limited. Second, parent-student alcohol communication does have various dimensions. As revealed by the results of the exploratory factor analyses, those dimensions (referred to in this study as topic types), include negative aspects of drinking, rules about drinking, drinking in moderation, and benefits of drinking. Third, the types of alcohol topics parents discuss with their college student children are

directly related to both parental approval and students' perceptions of parental approval. It is likely that how parents discuss specific alcohol topics is also related to actual and perceived parental approval. These findings have implications for future research on parent-student alcohol communication, primarily in regard to survey development and/or refinement.

In their study describing the development of a parent-child alcohol communication survey used with younger children, Miller-Day and Kam (2010) stressed the importance of having a "multi-faceted" approach to examining substance use communication in which the content of parents' deterrence strategies are assessed to determine which messages are most effective (p. 294). A review of the college drinking literature had indicated a need for a comprehensive measure of parent-student alcohol communication that demonstrated validity and reliability. While Boyle and Boekeloo's (2009) Alcohol Based Parent-Teen Communication Scale demonstrated very strong reliability ($\alpha = .97$), its focus on the negative consequences of drinking was somewhat narrow. Past research, as well as the present study, have indicated that while this is the most commonly discussed type of alcohol topic, parents do discuss other alcohol topics with their emerging adult children. The opposite issue arises with Miller-Day's (2008) typology of parents' substance use deterrence strategies. Miller-Day's typology did not include talk about the negative consequences of substance use, but did ask about rules, sanctions, rewards for not using substances, telling the student to use his or her own judgment, providing information, and hinting. Just one survey

question was employed for each strategy. An additional issue with Miller-Day's survey was that it asked about substance use strategies, and it is likely that parents' attempts to deter emerging adults' alcohol use differs from parents' attempts to deter drug or tobacco use. Given the need for a comprehensive alcohol specific communication measure that was appropriate for college students and their parents, a survey was created for this project.

As detailed in the Method chapter, the alcohol-communication survey employed here included 68 items drawn from both qualitative and quantitative studies in the college drinking literature, covering a wide range of alcohol topics (Baxter et al., 2009; Boyle & Boekeloo, 2009; Delva et al., 2004; Lederman & Stewart, 2005; Martens et al., 2005; Miller-Day, 2008; Miller-Day & Dodd, 2004; Turrisi et al., 2000). Early drafts of the survey were reviewed by two undergraduate research assistants, and minor changes were made to the survey based on their feedback. These initial steps were taken in an attempt to demonstrate face validity and content validity (Trochim, 2001). The results of this study also provided preliminary evidence of the survey's predictive validity (Trochim), as several dimensions of parent-student alcohol communication (the topic types) predicted perceived and actual parental approval of the students' drinking, as well as student drinking outcomes. While the general purpose of this project was not to test the psychometric properties of a survey, this study did yield empirical data that could eventually be used in the development of an alcohol communication scale for emerging adults and their parents.

Future research should involve refinement of the survey used in this study and a test of its psychometric properties. Because the factors that emerged from the exploratory factor analyses were somewhat different for parents versus students in this study, qualitative interview research likely is needed to better understand if (and how) the two groups of respondents might be interpreting the same survey questions differently (Schwarz, 1999). Once the survey is revised, additional factor analyses studies will be needed, including confirmatory factor analyses studies, to test the factors or content dimensions of parent-student alcohol communication. The development of a valid, reliable and comprehensive alcohol communication survey that can be used with both college students and their parents is important, as researchers' ability to examine how various types of alcohol messages associate with students' drinking outcomes is dependent upon being able to accurately identify and measure those message types.

Predictors of College Students' Drinking Outcomes

The present study investigated numerous predictors of students' dangerous drinking: the top ten most frequently discussed alcohol topics (based on both student reports and parent reports), the broader or more general type of alcohol topic discussed (based on both student reports and parent reports), student perception of parental approval and actual parental approval, and parents' own drinking. Dangerous drinking was measured in terms of both alcohol consumption and the experience of alcohol-related negative consequences. This section will begin with a discussion of the predictors of students' alcohol consumption.

Alcohol Consumption and Rules

Just one of the predictor variables investigated in this study had a significant, negative association with college students' alcohol consumption: parents' reports of conversations regarding their rules against alcohol use. This variable uniquely accounted for 3.1% of the variance in students' alcohol consumption, with a small to moderate standardized co-efficient, $\beta = -.20$. This finding is consistent with Miller-Day's (2008) study, in which there was a significant, negative association between students' alcohol use and their parents having a no tolerance rule for substance use ($r = -.10$). It is also consistent with research on parenting styles. Rule setting is a part of authoritative parenting, and previous research has shown that having an authoritative parenting style can help deter both younger adolescents' and emerging adults' substance use (Baumrind, 1991; Patock-Peckham et al., 2001; Patock-Peckham & Morgan-Lopez, 2006; Stephenson, Quick, Atkinson, & Tschida, 2005).

While parents' reports of rule setting was a significant, negative predictor of students' alcohol consumption in this study, students reports of rules and sanctions was not. This could be due to the differences between the two variables based on the exploratory factor analyses. The rules variable based on parents' reports consisted of three items: telling the student he or she was not allowed to drink, regardless of age; having a zero-tolerance rule for alcohol; and telling the student not to go to parties where there's alcohol. The rules variable based on students' reports included the zero-tolerance rule and telling the student not to

attend parties with alcohol, as well as items about sanctions, such as threats of parental discipline if the student were to get drunk, and talks of how the parent would punish the student. While both EFA's yielded clean factor structures, the differences in the factors inhibit direct comparisons between student reports and parent reports. The key difference between the two factors—the inclusion of sanction related items in the student variable—could be the reason why students' reports of Rules and Sanctions failed to significantly predict alcohol consumption. Previous research has revealed a significant positive association between parents' threats of punishment for substance use and students' alcohol consumption (Miller-Day, 2008). As such, the sanction items and rule items in this study could be canceling each other out, so to speak. Further analysis examining rules and sanctions as separate variables is needed to determine if this is a valid interpretation. The lack of significant results in regard to the students' reports of rules and sanctions could also be due to less variance; the student variable had a lower mean and standard deviation (M = 1.91; *SD* = 1.22) than the parent rule variable (*M* = 2.29; *SD* = 1.64).

If the inverse relationship between parental rule setting and college students' alcohol consumption is replicated in future studies, there are implications for the development of parent-based interventions. Media campaigns geared towards ways parents can deter their children's substance use typically advocate general parent-child communication on the topic, but often do not specify the type of substance use messages parents should express (Stephenson &

Quick, 2005). The findings from this study and Miller-Day's (2008) research suggest that setting alcohol rules should be a part of those conversations, and thus, a part of prevention campaigns targeting parents. Stephenson et al. (2005) suggested tailoring parent prevention campaigns based on parenting styles, creating campaign messages for authoritative parents that reinforce the substance use deterrence strategies they likely are already employing (such as rule setting), and creating campaign messages designed to motivate change to a more authoritative style for parents who practice other parenting styles. The present study, as well as previous research on authoritative parenting styles (Baumrind, 1991; Patock-Peckham et al., 2001; Patock-Peckham & Morgan-Lopez, 2006), lends credence to Stephenson et al.'s idea. However, before undertaking such prevention efforts, more research is needed investigating the associations between rule setting, parenting styles, and college students' drinking outcomes. Given the developmental stage most college students are in, during which they often strive for greater independence and less parental control (Arnett, 2004; Cohen & Lederman, 1998), it is possible that parental rule setting has short-term benefits of mitigating dangerous drinking in college, but long-term developmental consequences, such as impeding the students' sense of autonomy and/or prolonging the emerging adulthood stage of life.

Alcohol Consumption and Approval

One of the strongest predictors of students' alcohol consumption, albeit a positive predictor, was perceived parental approval. Numerous studies have

shown that when college students perceived their parents approved of their drinking, students were more likely to drink heavily (Abar & Turrisi, 2008; Kuther & Higgins-D'Alessandro, 2003; Walls et al., 2009; Wood et al., 2004). Results from the current study are consistent with previous research, in that there was a significant, positive association (β = .26) between students' perception that their parents approved of them drinking and students' alcohol consumption. The standardized co-efficient reported here is just slightly larger than that found in Kuther and Higgins-D'Alessandro's path analysis investigating subjective norms (β = .20), but a more sizable increase over Wood et al.'s findings (using multiple regression) for parental permissiveness (β = .08) and parental disapproval (β = -.08). The differences between Wood et al.'s results and those found in the current study are likely due to the different ways of measuring both the approval and drinking variables. However, both studies found similar effect sizes: 5% in Wood et al.'s study and 5.8% here. In short, this study has provided additional empirical support for the idea that students' perception of parental approval can have an impact on students' drinking behaviors.

A unique contribution to the parental approval research is this study's investigation of actual parental approval. Previous research has not examined actual parental approval as a predictor of college students' drinking outcomes. The results of this project indicate that actual parental approval does not predict college students' alcohol consumption beyond that accounted for by perceived parental approval. Thus, students' perception of their parents' attitudes toward

their drinking seems to be more important than whether or not parents actually do approve. These results, as well as the direct associations found between perceived parental approval and the types of alcohol communication topics discussed between parents and their emerging adults, lend credence to Wood et al.'s (2004) recommendation that "preventive interventions involving parents should attempt to facilitate communication between parents and late adolescents regarding acceptable levels of drinking" (p. 27).

Alcohol Consumption and Talks of the Negative Aspects of Drinking

In addition to perceived parental approval, discussions about the negative aspects of drinking had significant, moderate, and positive associations with students' alcohol consumption. Both students' reports of the top ten most frequently discussed alcohol topics and parents' reports of the top ten alcohol topics—both of which focused on alcohol-related negative consequences—were positive predictors of consumption. The relationship based on parents' reports had a stronger standardized co-efficient ($\beta = .23$) than the relationship based on students' reports ($\beta = .15$), as well as a stronger effect size, accounting for almost 5% of the variance in students' alcohol consumption, compared to the 2% of variance accounted for by students' reports. The majority of the items in the top ten variables were also part of the Negative Aspects of Drinking factors created through the exploratory factor analyses using both the parent data and the student data, though the EFA variables consisted of a larger number of items, covering a wider range of the negative consequences related to drinking. The Negative

Aspects of Drinking based on students' reports and created through the EFA was not a significant predictor. However, the Negative Aspects of Drinking variable, based on parents' reports, had a low to moderate association ($\beta = .24$) with students' alcohol consumption, accounting for 3.8% of the variance. In short, frequent discussions regarding the negative consequences of drinking are associated with higher levels of student alcohol consumption.

While these findings may be counter-intuitive to some parents or health educators, the results are consistent with Boyle and Boekeloo's (2009) study, which also found a significant, positive relationship between students' drinking and parents' discussion of negative consequences ($\beta = .12$). As Boyle and Boekeloo (2009) pointed out, this could be due to parents' alcohol discussions occurring after the students' alcohol use had become apparent; additionally, heavier drinking students might be interpreting discussions about the negative consequences of alcohol use as conditional endorsement of drinking. The various possible interpretations of these results underscore the importance of longitudinal research and experimental designs to help determine the temporal order of these behaviors, as well as cause and effect relationships. The present study's findings also underscore the importance of alcohol prevention programs being research based (NIAAA, 2002a) and targeted (Stephenson et al., 2005). If certain alcohol related messages exchanged between parents' and their emerging adult children are contributing to dangerous drinking, blanket suggestions for parents to talk to their late adolescents about substance use could be counter-productive.

Although this study has focused largely on parent-student conversations about drinking, parents can send alcohol-related messages not just by what they say, but also by what they do. Social cognitive theory (SCT) posits that parents often serve as models or socialization agents (Bandura, 1986); accordingly, when parents drink, and when they choose not to drink, they convey their alcohol-related values to their children (Bussey & Bandura, 1999; Grusec, 1992; Rosser, 1981). Several studies have suggested that college students model their parents' drinking (e.g., Fromme & Ruela, 1994; Jung, 1995; Kuther & Higgins-D'Alessandro, 2003; Pullen, 1994). The present study also found that parents' drinking, measured in the same way as students' drinking, was a significant, positive predictor of students' alcohol consumption ($\beta = .17$), accounting for 2.6% of the variance. These findings suggest students might be modeling their parents drinking behaviors, lending support to SCT. However, SCT emphasizes the influence of modeling over verbal instruction (Bussey & Bandura; Rosser), and this study indicates that when it comes to drinking behaviors, parents' verbal instruction—particularly in the form of rules and discussions of the negative aspects of drinking— might be more influential than modeling, given that the communication variables had stronger standardized co-efficients and larger effect sizes. Future studies might investigate whether the influence of parental communication on students' alcohol consumption is moderated by parents' alcohol consumption. As Bussey and Bandura noted, models "do not often practice what they preach" (p. 689). It is possible that parents engage in drinking

behaviors that contradict the verbal messages they exchange with their children. Given the strong association between perceived parental approval and students' alcohol consumption, it would also be worthwhile to investigate the degree to which parents' drinking behaviors influences students' perception of parental approval of their own drinking. This study turns now to the relationship between perceived parental approval and the second outcome variable related to students' dangerous drinking: negative consequences.

Negative Consequences and Approval

The association between students' perceived parental approval and students' experience of negative consequences related to their drinking is unclear. When this association was tested using reports from all student participants (N = 198) in this study, there was a significant, positive relationship between the two variables (β = .17). However, when the hierarchical multiple regression was limited to the student sample in which there was a matching parent (N = 158), the relationship between perceived parental approval and students' negative consequences was not significant. This could be due to a lack of power, given the smaller sample size. It is also feasible that the association between perceived parental approval and negative consequences is more complex than the present investigation could uncover. As Wood et al. (2004) and Walls et al. (2009) found, parental permissiveness (measured by the number of drinks each parent would consider to be the student's limit) was significantly associated with students' negative consequences, but their measure of parental disapproval (measured by

parents' approval of students drinking and also students drinking and driving) was not. Boyle and Boekeloo (2006) did find a significant positive association between students' negative consequences and perceived parental approval; however, in a later study (Boyle & Boekeloo, 2009) in which they measured parental approval somewhat differently, this association was not found. Further research is needed to better understand these conflicting results. As was the case with students' alcohol consumption, parents' actual approval of students' drinking failed to predict students' alcohol related negative consequences.

Negative Consequences and Talks of the Negative Aspects of Drinking

The parent-student communication variables that tapped into discussions about the negative consequences of drinking were positive predictors of students' experience of negative consequences. Both students' reports of the Top Ten Topics ($\beta = .25$) and parents' reports of the Top Ten Topics ($\beta = .24$) had standardized co-efficients in the low to moderate range, and both accounted for similar amounts of variance, in the 5-6% range. The Negative Aspects of Drinking variable created through the EFA based on parents' reports had a low to moderate association ($\beta = .23$) with students' negative consequences, accounting for 4% of the variance. As already discussed, longitudinal research is needed to better understand the temporal order and the cause and effect relationships between discussions of the negative aspects of drinking and students' drinking outcomes. The need for further research is reiterated by the conflicting results obtained in this study and Boyle and Boekeloo's (2009) study. They failed to find

a significant association between parent-student communication regarding the negative aspects of drinking and students' negative consequences. The differing results could be due to the use of different scales to measure students' negative consequences and parent-child alcohol communication.

Limitations and Future Directions

This study is limited in its use of retrospective reports regarding parent-child alcohol communication. In an effort to augment the reliability of the recall data collected for the present project, multiple informants were used. While parent participants generally reported more frequent conversations with their college student children about alcohol than did student participants, the two groups largely agreed on the content and general occurrence of those conversations. Additionally, previous studies regarding parent-child communication about substance use have found agreement between parents and students regarding the content of such conversations (e.g., Baxter et al., 2009; Miller-Day & Dodd, 2004), indicating that the use of retrospective reports is appropriate for this line of research. While people's ability to accurately recall interactions and events has been questioned, a review of retrospective research conducted with children and families concluded that criticisms regarding the unreliability of retrospective reports are overstated (Brewin, Andrews, & Gotlib, 1993). Even so, future research should attempt to examine alcohol communication between parents and their emerging adults as it occurs, or immediately after it occurs, so as to improve recall accuracy.

A related limitation is the use of self-report data for participants' alcohol use. Participants may not accurately recall how much alcohol they had consumed, or they may choose to under-report or over-report their consumption. However, numerous studies have shown the validity and reliability of self-reports of alcohol use (Campanelli, Dielman, & Shope, 1987; Cooper, Sobell, Sobell, & Maisto, 1981; Midanik, 1988; Miller, Neal, Roberts, Baer, Cressler, Metrik, & Marlatt, 2002). Additionally, the present study utilized questions from the Core Alcohol and Drug Survey, which has been used nationally with college students and shown to be valid and reliable in previous studies (Core Institute, 2005; Presley & Pimentel, 2006; Presley & Vineyard, 2004).

An additional limitation of this study is that mothers were over-represented, making up almost 74% of parent participants. Given that student participants were informed in the study recruitment script that they would be asked about parent-child alcohol communication and that they would need to recruit a parent to complete a survey on the same topic, and given that Miller-Day and Dodd (2004) found mothers are more likely than fathers to initiate substance use discussions with their children, the over-representation of mothers in the present project may be an indication that mothers are more likely than fathers to talk to their late adolescents about drinking. Future studies might focus on fathers or ask students to recruit both parents if applicable. Not analyzing mothers' data and fathers' data separately also could be considered a limitation of the present project, as several studies have found that parenting behaviors and/or the potential

influence of those behaviors differ between mothers and fathers (Boyle & Boekeloo, 2006; Haemmerlie et al., 1994; Patock-Peckham et al., 2001; Patock-Peckham & Morgan-Lopez, 2006; Turner et al., 2000). Future research might examine differences in the content and influence of fathers' alcohol communication and mothers' alcohol communication.

Perhaps the largest limitation of the present study was the use of a cross sectional design. This design prohibits the identification of the chronological order of parent-child discussions about alcohol and students' drinking behaviors. Given the positive associations found between discussions about the negative aspects of drinking and students' dangerous drinking, along with the negative association between parents' alcohol rules and students' consumption, it is important to determine the sequential order of these behaviors. Future studies should employ a longitudinal design, measuring parent-child alcohol communication, dangerous drinking, and perceptions of parental approval across various time periods to help researchers gain a clearer and more comprehensive understanding of parents' influence on college students' alcohol use. A longitudinal design also could help researchers determine if and how parent-child communication about alcohol changes over time. It is reasonable to assume that such discussions, including alcohol rules, evolve from the time an adolescent is in high school, starts college, reaches the legal drinking age, and finishes college.

Before conducting a longitudinal study, it is important to first develop a comprehensive parent-student alcohol communication scale that has demonstrated

both validity and reliability, and that is appropriate for both parents and emerging adults. As discussed earlier in this chapter, future studies should be conducted to refine the alcohol communication survey utilized in this project and to test its psychometric properties. A newly designed survey might also ask about parents' sense of self-efficacy in talking to their emerging adults about alcohol, including their knowledge of negative consequences, their comfort level in discussing alcohol-related topics, and their communication skills. Given that this project found rule setting might be a protective parenting practice, and given that Baxter et al. (2009) found a positive relationship between parental rule justification and students' reports of rule compliance, a revised survey might also ask about parents' attempts to justify any alcohol rules. It would also be worthy to investigate if and how parents' drinking behaviors moderate the influence of alcohol communication topics and perceived parental approval on students' drinking outcomes.

In conclusion, this study indicates that parents can influence their college students' drinking behaviors. While parental influences are not as strong as peer influences on emerging adults' dangerous drinking (Ham & Hope, 2003; Wood et al., 2004), parents should be utilized in prevention efforts. Prevention campaigns aimed at parents typically direct parents to talk to their children about substance use (e.g., National Youth Anti-Drug Media Campaign, n.d.; Stephenson & Quick, 2005); however, this study suggests that the content of those talks matters. Articulating rules against alcohol use and showing disapproval of alcohol use

appear to be protective influences on college students' dangerous drinking; whereas, showing approval and talking about the negative consequence of drinking do not appear to be protective. Additional research is needed for the development of effective, evidence-based prevention campaigns geared towards parents. The present project provides directions for such research and illustrates the practical applications of intersecting family communication scholarship with health communication scholarship.

TABLES

Table 1

Descriptive Statistics for Students With and Without A Matching Parent

	With Matching Parent			Without Matching Parent		
Variable	*n*	*M*	*(SD)*	*n*	*M*	*(SD)*
Frequency of Alcohol Communication	148	3.49	(1.20)	35	3.43	(1.07)
Alcohol Consumption*	158	.07	(.95)	40	-.26	(.76)
Negative Consequences	158	1.50	(.51)	40	1.39	(.42)

Note: There is a variation in sample size for the frequency of alcohol communication variable because participants who indicated that they had never discussed drinking with their parents were not asked the frequency question. The alcohol consumption scores are standardized. Variables for which there are significant differences are marked with an asterisk, * $p = .04$.

Table 2

Descriptive Statistics for Parents With and Without A Matching Student

	With Matching Student			Without Matching Student		
Variable	*n*	*M*	*(SD)*	*n*	*M*	*(SD)*
Frequency of Alcohol Communication	149	3.58	(1.15)	24	3.50	(1.14)
Alcohol Consumption	158	.04	(.91)	30	-.20	(.68)

Note: There is a variation in sample size for the frequency of alcohol communication variable because participants who indicated that they had never discussed drinking with their college student child were not asked the frequency question. The alcohol consumption scores are standardized.

Table 3

Paired-Samples t Test Results: Means and Standard Deviations Comparing Student Reports to Parent Reports

		Student Reports		Parent Reports	
Item	*n*	*M*	*(SD)*	*M*	*(SD)*
Extent of Alcohol-Communication					
Frequency	145	3.50	(1.19)	3.60	(1.16)
Ongoing conversation	145	3.28	(1.95)	4.19	(2.26)*
Open	146	5.13	(2.03)	5.74	(1.80)*
Direct	147	4.47	(2.07)	5.57	(1.98)*
One-way conversation	147	2.03	(1.51)	2.27	(1.74)
Two-way conversation	147	4.96	(1.96)	5.16	(1.99)
Big conversation	145	2.03	(1.57)	1.81	(1.60)
Specific Topics					
Riding in car with one drinking	146	5.32	(1.98)	5.84	(1.77)*
Drinking and driving dangers	147	4.51	(1.78)	5.59	(1.71)*
Partying interfering with school	147	4.62	(1.86)	5.16	(1.93)*
Partying could hurt grades	144	4.56	(1.96)	5.16	(2.05)*
Trouble with police	147	4.29	(2.03)	5.07	(2.15)*
Do something regretted	145	4.11	(2.07)	4.88	(2.14)*
Can impair judgment	144	4.08	(2.06)	4.95	(2.11)*
Not being pressured by others	145	4.03	(2.03)	4.94	(2.03)*
Going along with crowd bad	146	3.79	(2.12)	4.71	(2.25)*
Mixing with medication/drugs	143	3.97	(2.20)	4.63	(2.34)
Keep eyes on drink	145	4.19	(2.25)	4.45	(2.36)
Use own judgment	145	4.59	(1.96)	4.10	(2.14)

Note: *The differences between students' reports and parents' reports were significant. For items regarding the extent of alcohol communication, significance was determined using the adjusted alpha level of $p < .007$. For specific topic items, significance was determined using the adjusted alpha level of $p < .004$.

Table 4

Descriptive Statistics for Alcohol Communication Topics based on Student Reports

Item	*n*	*M*	*(SD)*	Not Discussed	Often Discussed
Most Frequently Discussed					
Riding in car with one drinking	182	5.32	(1.98)	19.8%	72.0%
Partying interfering with school	183	4.67	(1.85)	25.7%	56.3%
Partying could hurt grades	183	4.63	(1.97)	29.5%	55.7%
Drinking and driving dangers	183	4.47	(1.80)	28.4%	56.8%
Encourage to use own judgment	182	4.37	(1.99)	35.7%	52.2%
Trouble with police	183	4.27	(2.07)	37.2%	49.7%
Keep eyes on drink	182	4.18	(2.27)	40.1%	46.7%
Do something regretted	182	4.06	(2.07)	42.9%	44.5%
Can impair judgment	183	4.04	(2.07)	41.5%	44.3%
Not being pressured by others	183	3.98	(2.01)	42.6%	43.2%
Least Frequently Discussed					
Offered rewards for not drinking	183	1.66	(1.35)	89.1%	5.5%
Offered gifts for not drinking	183	1.47	(1.13)	93.4%	3.3%
Makes it easier to have fun	183	1.47	(.98)	94.5%	1.6%
Benefits of drinking	183	1.43	(.91)	94.5%	2.2%
Makes it easier to talk to people	183	1.42	(.89)	96.2%	1.6%
More comfortable when awkward	183	1.39	(.94)	95.1%	1.6%
No drinking, regardless of age	183	1.39	(1.08)	91.8%	4.9%
Helps relieve stress	183	1.26	(.69)	97.8%	1.1%
Helps hook up	181	1.24	(.90)	96.1%	1.7%
Helps make friends	183	1.22	(.63)	97.8%	0%
Remaining Topics					
Okay as long as not drunk	182	2.13	(1.39)	81.9%	6.6%
Changes one's personality	182	3.38	(1.96)	56.0%	31.9%
Fun things to do instead of drink	183	3.60	(1.80)	51.9%	30.6%
Threatened to discipline if drunk	183	1.89	(1.34)	86.9%	5.5%
Accurate judgments difficult	183	3.24	(1.89)	56.3%	26.2%
Mixing alcohol and sex	182	2.97	(2.07)	63.2%	25.3%
Parent expects me to drink	183	2.23	(1.55)	79.8%	9.8%
Eat while drinking	183	2.57	(1.91)	69.9%	20.8%
Drink water while drinking	183	2.69	(1.98)	67.8%	21.3%
Take advantage of one sexually	183	2.28	(1.85)	79.8%	15.8%
No drinking until age 21	183	2.34	(1.91)	77.0%	14.2%

Improve mood without alcohol	182	2.46	(1.94)	73.6%	18.1%
Signs of alcohol poisoning	183	2.62	(1.81)	69.9%	19.1%
Parent expects experimentation	183	2.47	(1.81)	72.7%	16.9%
Drink in moderation suggestions	182	2.75	(1.87)	68.1%	19.8%
Alternatives to falling asleep	182	1.68	(1.34)	86.8%	6.0%
Okay at home with parents	183	3.00	(2.12)	62.8%	27.9%
Going along with crowd is bad	183	3.74	(2.10)	46.4%	36.6%
Mixing alcohol with medications	181	3.89	(2.21)	45.9%	41.4%
Drinking not make more adult	183	2.98	(2.12)	62.8%	24.6%
Pace self when drinking	183	3.44	(2.27)	54.1%	36.6%
Advice on handling peer pressure	183	3.40	(1.98)	54.1%	28.4%
Be taken advantage of sexually	183	3.22	(2.20)	59.0%	31.1%
Schools punishment	183	3.15	(2.13)	59.6%	30.6%
Hang out with trusted friends	183	3.96	(2.19)	43.7%	43.7%
Parent's punishment for drinking	183	2.03	(1.57)	83.1%	8.2%
Social drinking and alcoholism	183	2.66	(2.01)	74.3%	21.3%
Talk to parent if drinking problem	183	2.99	(2.22)	61.2%	27.3%
Parent's drinking stories	183	3.20	(2.06)	56.8%	28.4%
Suspension from school if caught	183	2.65	(2.03)	70.5%	20.8%
How alcohol works in the body	183	2.72	(1.84)	69.9%	19.1%
Creates false sense of power	183	2.80	(1.91)	66.1%	22.4%
Can make problems worse	183	3.55	(2.02)	50.3%	31.7%
Drinking is bad for health	183	3.81	(2.01)	46.4%	37.2%
Drinking can make someone sick	183	3.78	(2.10)	47.5%	39.3%
Effects on making decisions	182	3.81	(2.01)	48.9%	40.1%
No parties where there's alcohol	183	1.81	(1.43)	89.6%	6.6%
Friends' parents prohibit hanging out	183	1.78	(1.39)	86.3%	5.5%
Lead to serious drinking problems	183	3.11	(2.12)	61.2%	25.7%
Eat before I drink	183	3.01	(2.13)	62.3%	27.9%
Parent hinted not to drink	182	2.70	(1.87)	70.3%	16.5%
Embarrassment for the family	182	2.02	(1.72)	84.6%	11.0%
Zero tolerance rule for alcohol	182	1.81	(1.52)	87.4%	7.7%
What to say to a drink offer	183	2.89	(1.96)	66.7%	21.9%
Gets in way of making true friends	183	2.28	(1.70)	78.1%	13.1%
Should party while in college	182	2.24	(1.52)	77.5%	9.3%
Okay if not interfere with school	183	2.87	(1.90)	66.7%	20.8%
Alternatives to celebrate	182	2.58	(1.78)	74.2%	15.9%

Note: Percentages for the "Not Discussed" column indicate the proportion of student participants who responded with a 1, 2 or 3 on the survey. Percentages for the "Often Discussed" column indicate the proportion of students who responded with a 5, 6, or 7 on the survey.

Table 5

Descriptive Statistics for Alcohol Communication Topics based on Parent Reports

Item	*n*	*M*	*(SD)*	Not Discussed	Often Discussed
Most Frequently Discussed					
Riding in car with one drinking	174	5.81	(1.79)	13.8%	77.6%
Drinking and driving dangers	175	5.61	(1.69)	15.4%	77.7%
Partying interfering with school	174	5.16	(1.94)	22.4%	66.1%
Partying could hurt grades	172	5.15	(2.06)	25.0%	65.7%
Trouble with police	175	5.09	(2.14)	24.6%	66.9%
Can impair judgment	171	4.93	(2.13)	28.7%	60.2%
Not being pressured by others	173	4.91	(2.05)	27.7%	61.8%
Do something regretted	174	4.86	(2.17)	31.0%	62.1%
Going along with crowd is bad	174	4.72	(2.25)	31.6%	58.6%
Mixing alcohol with medications	173	4.61	(2.36)	37.6%	55.5%
Least Frequently Discussed					
Offered rewards for not drinking	174	1.66	(1.53)	87.9%	7.5%
Okay if not interfere with school	173	1.66	(1.32)	90.2%	6.4%
Offered gifts for not drinking	175	1.43	(1.23)	92.6%	6.3%
Benefits of drinking	175	1.29	(1.03)	94.9%	3.4%
Should party while in college	174	1.27	(1.04)	91.4%	5.7%
More comfortable when awkward	175	1.27	(1.04)	96.6%	2.9%
Makes it easier to have fun	173	1.25	(.84)	96.0%	2.3%
Makes it easier to talk to people	175	1.22	(.83)	97.1%	1.7%
Helps hook up	173	1.18	(.76)	96.5%	1.7%
Helps relieve stress	175	1.14	(.64)	98.3%	1.1%
Helps make friends	175	1.14	(.70)	98.3%	1.4%
Remaining Topics					
Okay as long as not drunk	175	1.76	(1.29)	89.1%	5.7%
Encourage to use own judgment	173	4.12	(2.15)	41.6%	43.4%
Changes one's personality	174	4.00	(2.09)	48.9%	33.3%
Fun things to do instead of drink	174	4.16	(2.14)	39.7%	47.1%
Threatened to discipline if drunk	175	2.50	(1.91)	74.3%	16.6%
Accurate judgments difficult	175	4.57	(2.14)	34.9%	54.3%
Mixing alcohol and sex	174	4.13	(2.34)	43.7%	46.0%
Parent expects me to drink	174	1.71	(1.30)	90.8%	5.2%
Eat while drinking	175	2.11	(1.68)	80.0%	11.4%
Drink water while drinking	175	2.03	(1.63)	83.4%	16.6%
Take advantage of one sexually	175	3.33	(2.43)	58.3%	32.0%

No drinking until age 21	174	3.08	(2.30)	64.4%	28.7%
No drinking, regardless of age	173	1.95	(1.87)	82.7%	14.5%
Improve mood without alcohol	174	2.77	(2.17)	66.7%	24.1%
Signs of alcohol poisoning	172	3.32	(2.31)	57.6%	34.3%
Keep eyes on drink	173	4.38	(2.40)	38.7%	52.6%
Parent expects experimentation	171	1.78	(1.28)	87.1%	6.4%
Drink in moderation suggestions	173	2.28	(1.85)	80.3%	15.6%
Alternatives to falling asleep	173	2.03	(1.88)	81.5%	15.0%
Okay at home with parents	174	2.28	(1.78)	79.3 %	13.2%
Drinking not make more adult	173	4.00	(2.43)	45.1%	46.8%
Pace self when drinking	174	2.71	(1.98)	69.5%	19.5%
Advice on handling peer pressure	175	4.13	(2.07)	40.6%	47.4%
Be taken advantage of sexually	173	3.97	(2.47)	49.7%	43.9%
School's punishment	175	4.06	(2.49)	48.0%	48.6%
Hang out with trusted friends	173	3.65	(2.32)	51.4%	38.7%
Parent's punishment for drinking	175	2.57	(2.04)	73.7%	20.6%
Social drinking and alcoholism	172	3.30	(2.34)	60.5%	31.4%
Talk to parent if drinking problem	174	3.39	(2.41)	56.3%	35.1%
Parent's drinking stories	174	2.45	(1.85)	79.3%	15.5%
Suspension from school if caught	175	3.71	(2.45)	53.1%	42.3%
How alcohol works in the body	174	3.13	(2.10)	64.9%	24.7%
Creates false sense of power	174	3.28	(2.21)	58.6%	29.3%
Can make problems worse	174	4.11	(2.34)	44.3%	45.4%
Drinking is bad for health	174	4.40	(2.26)	37.4%	51.7%
Drinking can make someone sick	174	4.46	(2.23)	37.4%	55.7%
Effects on making decisions	174	4.57	(2.21)	35.6%	55.7%
No parties where there's alcohol	175	2.48	(1.93)	74.9%	18.3%
Friends' parents prohibit hanging out	175	2.57	(2.11)	72.0%	21.1%
Lead to serious drinking problems	175	3.95	(2.39)	49.1%	43.4%
Eat before drinking	174	2.40	(1.84)	77.0%	17.8%
Parent hinted not to drink	173	2.40	(1.96)	76.3%	16.8%
Embarrassment for the family	174	2.31	(2.07)	77.0%	17.8%
Zero tolerance rule for alcohol	174	2.47	(2.06)	75.9%	20.1%
What to say to a drink offer	175	3.33	(2.13)	59.4%	30.3%
Gets in way of making true friends	173	3.09	(2.25)	63.0%	27.2%
Alternatives to celebrate	174	2.95	(2.10)	67.8%	24.1%

Note: Percentages for the "Not Discussed" column indicate the proportion of parent participants who responded with a 1, 2 or 3 on the survey. Percentages for the "Often Discussed" column indicate the proportion of parents who responded with a 5, 6, or 7 on the survey.

Table 6

Hierarchical Multiple Regression Results: Predicting Student Alcohol Consumption Using Student Reports of Top Ten Topics of Alcohol-Communication Variable (N = 183)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.17/.15			
Constant		1.47	.41	
Sex		.27	.13	.14*
Year in College		-.08	.06	-.09
Race		-.06	.03	-.17*
Greek Affiliation		-.71	.15	-.32**
Matching Parent		-.21	.16	-.09
Step 2	.19/.17			
Constant		.95	.47	
Sex		.32	.13	.17*
Year in College		-.08	.06	-.09
Race		-.06	.03	-.17*
Greek Affiliation		-.70	.15	-.31**
Matching Parent		-.21	.16	-.09
Top Ten Topics		.10	.04	.15*

Notes. Total R^2 = .19, adjusted R^2 = .17, F (6, 176) = 6.98, p < .001. *p < .05; **p < .001

Table 7

Hierarchical Multiple Regression Results: Predicting Students' Negative Consequences Using Student Reports of Top Ten Topics of Alcohol-Communication Variable (N = 183)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.06/.03			
Constant		1.85	.24	
Sex		.13	.08	.13
Year in College		-.01	.04	-.02
Race		-.02	.02	-.08
Greek Affiliation		-.21	.09	-.18*
Matching Parent		-.09	.10	-.07
Step 2	.12/.09			
Constant		1.40	.26	
Sex		.17	.08	.17*
Year in College		-.01	.04	-.03
Race		-.02	.14	-.08
Greek Affiliation		-.20	.09	-.17*
Matching Parent		-.08	.09	-.07
Top Ten Topics		.09	.03	.25**

Notes. Total R^2 = .12, adjusted R^2 = .09, F (6, 176) = 3.98, p = .001. *p < .05; **p = .001

Table 8

Hierarchical Multiple Regression Results: Predicting Student Alcohol Consumption Using Parent Reports of Top Ten Topics of Alcohol Communication Variable (N = 151)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.16/.14			
Constant		1.25	.41	
Sex		.28	.15	.15
Year in College		-.10	.07	-.11
Race		-.07	.03	-.18*
Greek Affiliation		-.68	.17	-.31***
Step 2	.21/.18			
Constant		.48	.48	
Sex		.30	.15	.16*
Year in College		-.11	.07	-.12
Race		-.06	.03	-.15
Greek Affiliation		-.62	.17	-.28***
Top Ten Topics		.12	.04	.23**

Notes. Total R^2 = .21, adjusted R^2 = .18, F (5, 145) = 7.73, p < .001. *p < .05; **p < .01; ***p < .001

Table 9

Hierarchical Multiple Regression Results: Predicting Students' Negative Consequences Using Parent Reports of Top Ten Topics of Alcohol Communication Variable (N = 151)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.06/.04			
Constant		1.79	.24	
Sex		.14	.09	.13
Year in College		-.01	.04	-.02
Race		-.03	.02	-.12
Greek Affiliation		-.22	.10	-.18*
Step 2	.12/.09			
Constant		1.35	.27	
Sex		.15	.08	.14
Year in College		-.02	.04	-.03
Race		-.02	.02	-.09
Greek Affiliation		-.19	.10	-.15
Top Ten Topics		.07	.02	.24**

Notes. Total R^2 = .12, adjusted R^2 = .09, F (5, 145) = 3.83, p = .003. *p < .05; **p < .01

Table 10

Factor Structure for Student Reports of Parent-Child Alcohol Communication Topic Types

Item	Factor 1	Factor 2	Factor 3
	Negative Aspects of Drinking	Rules & Sanctions	Benefits of Drinking
Drinking and driving dangers	.641		
Partying interfering with school	.616		
Alcohol changes one's personality	.677		
Fun things to do instead of drink	.665		
Accurate judgments difficult	.702		
Negatives of mixing alcohol and sex	.701		
Not being pressured by others	.708		
Take advantage of one sexually	.583		
Signs of alcohol poisoning	.719		
Keep eyes on drink	.761		
Partying could hurt my grades	.661		
Can impair judgment	.890		
Do something regretted	.798		
Going along with crowd is bad	.773		
Mixing alcohol with medications	.764		
Does not make one more of an adult	.689		
Advice on handling peer pressure	.731		
Be taken advantage of sexually	.796		
Trouble with police	.712		
School's punishment if caught	.563		
Risk of riding in car with one drinking	.709		
Social drinking and alcoholism	.599		
Talk to parent if drinking problem	.722		
How alcohol works in the body	.719		
Can create a false sense of power	.732		
Can make problems worse	.824		
Drinking is bad for health	.760		
Drinking can make one sick	.790		
Effects on making decisions	.869		
Lead to serious drinking problems	.758		

What to say to a drink offer	.735		
Gets in way of making true friends	.720		
Threatened to discipline if drunk		.615	
Parent's punishment for drinking		.739	
No parties where there's alcohol		.777	
Embarrassment for the family		.673	
Zero-tolerance rule for alcohol		.802	
Helps make friends			.797
Helps hookup			.579
Makes it easier to talk to people			.655
Makes it easier to have fun			.640
Helps relieve stress			.764
Benefits of drinking			.627
More comfortable when awkward			.552

Table 11

Hierarchical Multiple Regression Results: Predicting Student Alcohol Consumption Using Student Reports of EFA Communication Variables (*N* = 183)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.17/.15			
Constant		1.47	.41	
Sex		.27	.13	.14*
Year in College		-.08	.06	-.09
Race		-.06	.03	-.17*
Greek Affiliation		-.71	.15	-.32**
Matching Parent		-.21	.16	-.09
Step 2	.17/.14			
Constant		1.39	.44	
Sex		.28	.14	.15*
Year in College		-.08	.06	-.09
Race		-.06	.03	-.17*
Greek Affiliation		-.71	.15	-.32**
Matching Parent		-.21	.16	-.09
F1: Negative Aspects		.02	.04	.03
Step 3	.17/.14			
Constant		1.38	.45	
Sex		.28	.14	.15*

Year in College		-.08	.06	-.09
Race		-.06	.03	-.17*
Greek Affiliation		-.70	.16	-.32**
Matching Parent		-.21	.17	-.09
F1: Negative Aspects		.02	.05	.04
F2: Rules & Sanctions		-.01	.06	-.01
Step 4	.17/.13			
Constant		1.36	.45	
Sex		.32	.15	.17*
Year in College		-.08	.06	-.09
Race		-.06	.03	-.16*
Greek Affiliation		-.70	.16	-.32**
Matching Parent		-.19	.17	-.08
F1: Negative Aspects		.03	.05	.05
F2: Rules & Sanctions		-.01	.06	-.01
F3: Benefits of Drinking		-.07	.12	-.04

Notes. Total $R^2 = .17$, adjusted $R^2 = .13$, F (8, 174) = 4.15, $p < .001$. *$p < .05$; **$p < .001$

Table 12

Hierarchical Multiple Regression Results: Predicting Student Negative Consequences Using Student Reports of EFA Communication Variables (*N* = 183)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.06/.03			
Constant		1.85	.24	
Sex		.13	.08	.13
Year in College		-.01	.04	-.02
Race		-.02	.02	-.08
Greek Affiliation		-.21	.09	-.18*
Matching Parent		-.09	.10	-.07
Step 2.	08/.05			
Constant		1.67	.25	
Sex		.15	.08	.15
Year in College		-.01	.04	-.02
Race		-.02	.02	-.08
Greek Affiliation		-.21	.09	-.18*
Matching Parent		-.09	.09	-.07
F1: Negative Aspects		.05	.03	.13
Step 3	.08/.04			
Constant		1.70	.26	

Sex		.14	.08	.13
Year in College		-.01	.04	-.02
Race		-.02	.02	-.08
Greek Affiliation		-.22	.09	-.19*
Matching Parent		-.10	.10	-.08
F1: Negative Aspects		.04	.03	.11
F2: Rules & Sanctions		.03	.03	.07
Step 4	.08/.04			
Constant		1.71	.26	
Sex		.12	.09	.12
Year in College		-.01	.04	-.02
Race		-.02	.02	-.08
Greek Affiliation		-.22	.09	-.19*
Matching Parent		-.11	.10	-.09
F1: Negative Aspects		.03	.03	.10
F2: Rules & Sanctions		.03	.03	.07
F3: Benefits of Drinking		.03	.07	.04

Notes. Total $R^2 = .08$, adjusted $R^2 = .04$, F (8, 174) = 1.91, $p = .06$. *$p < .05$

Table 13

Factor Structure for Parent Reports of Parent-Child Alcohol Communication Topic Types

Item	Factor 1	Factor 2	Factor 3
	Negative Aspects of Drinking	Drinking in Moderation	Rules
Drinking and driving dangers	.785		
Partying interfering with school	.767		
Alcohol changes one's personality	.694		
Fun things to do instead of drink	.673		
Accurate judgments difficult	.766		
Negatives of mixing alcohol and sex	.724		
Not being pressured by others	.800		
Keep eyes on drink	.577		
Partying could hurt grades	.746		
Can impair judgment	.902		
Do something later regretted	.861		
Going along with crowd is bad	.798		
Mixing alcohol with medications	.743		
Does not make one more of an adult	.709		
Be taken advantage of sexually	.622		
Trouble with police	.866		
School's punishment if caught	.691		
Risk of riding in car w/ one drinking	.826		
Suspension from school if caught	.650		
Can make one sick	.701		
Effects on making decisions	.784		
Eat while drinking		.778	
Drink water while drinking		.931	
Drink in moderation suggestions		.791	
Okay at home with parents		.597	
Pace self when drinking		.670	
Eat before drinking		.806	
Okay if doesn't interfere with school		.674	
No drinking, regardless of age			.741
Not parties where there's alcohol			.712
Zero-tolerance rule for alcohol			.673

Table 14

Hierarchical Multiple Regression Results: Predicting Student Alcohol Consumption Using Parent Reports of EFA Communication Variables (N = 151)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.16/.14			
Constant		1.25	.41	
Sex		.28	.15	.15
Year in College		-.10	.07	-.11
Race		-.07	.03	-.18*
Greek Affiliation		-.68	.17	-.31**
Step 2	.20/.17			
Constant		.53	.49	
Sex		.33	.15	.17*
Year in College		-.10	.07	-.11
Race		-.06	.03	-.16*
Greek Affiliation		-.61	.17	-.27**
F1: Negative Aspects		.11	.04	.20**
Step 3	.21/.18			
Constant		.40	.50	
Sex		.32	.15	.17*
Year in College		-.11	.07	-.12
Race		-.06	.03	-.15

Greek Affiliation		-.55	.17	-.25**
F1: Negative Aspects		.08	.05	.15
F2: Drinking in Moderation		.08	.06	.11
Step 4	.24/.20			
Constant		.45	.49	
Sex		.29	.15	.15
Year in College		-.12	.07	-.14
Race		-.05	.03	-.12
Greek Affiliation		-.50	.17	-.22**
F1: Negative Aspects		.13	.05	.24**
F2: Drinking in Moderation		.06	.06	.08
F3: Rules		-.12	.05	-.20*

Notes. Total $R^2 = .24$, adjusted $R^2 = .20$, $F\ (7, 143) = 6.42$, $p < .001$. *$p < .05$; **$p \leq .01$

Table 15

Hierarchical Multiple Regression Results: Predicting Student Negative Consequences Using Parent Reports of EFA Communication Variables (N = 151)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.06/.04			
Constant		1.79	.24	
Sex		.14	.09	.13
Year in College		-.01	.04	-.02
Race		-.03	.02	-.12
Greek Affiliation		-.22	.10	-.18*
Step 2	.10/.07			
Constant		1.39	.28	
Sex		.16	.09	.16
Year in College		-.01	.04	-.02
Race		-.02	.02	-.09
Greek Affiliation		-.18	.10	-.15
F1: Negative Aspects		.06	.02	.21*
Step 3	.10/.07			
Constant		1.36	.29	
Sex		.16	.09	.16
Year in College		-.01	.04	-.03
Race		-.02	.02	-.09

Greek Affiliation		-.17	.10	-.14
F1: Negative Aspects		.06	.03	.19*
F2: Drinking in Moderation		.01	.03	.04
Step 4	.11/.07			
Constant		1.37	.29	
Sex		.15	.09	.15
Year in College		-.02	.04	-.03
Race		-.02	.02	-.08
Greek Affiliation		-.16	.10	-.13
F1: Negative Aspects		.07	.03	.23*
F2: Drinking in Moderation		.01	.03	.02
F3: Rules		-.03	.03	-.10

Notes. Total $R^2 = .11$, adjusted $R^2 = .07$, $F\ (7, 143) = 2.57$, $p = .02$. *$p < .05$; **$p \leq .01$

Table 16

Hierarchical Multiple Regression Results: Predicting Students Perception of Parental Approval Using Student Reports of EFA Communication Variables (*N* = 183)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.003/-.002			
Constant		3.06	.28	
F1: Negative Aspects		.06	.07	.06
Step 2	.27/.26			
Constant		3.63	.25	
F1: Negative Aspects		.26	.07	.26**
F2: Rules & Sanctions		-.67	.08	-.56**
Step 3	.33/.32			
Constant		3.09	.28	
F1: Negative Aspects		.19	.07	.19*
F2: Rules & Sanctions		-.69	.08	-.57**
F3: Benefits of Drinking		.59	.16	.25**

Notes. Total R^2 = .33, adjusted R^2 = .32, F (3, 179) = 28.94, $p < .001$, $p = .06$. *$p < .01$, ** $p < .001$

Table 17

Hierarchical Multiple Regression Results: Predicting Parental Approval Using Parent Reports of EFA Communication Variables (*N* = 175)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.01/.005			
Constant		2.21	.29	
F1: Negative Aspects		.08	.06	.11
Step 2	.21/.20			
Constant		1.91	.27	
F1: Negative Aspects		-.08	.06	-.10
F2: Drinking in Moderation		.48	.07	-.50**
Step 3	.35/.34			
Constant		2.22	.25	
F1: Negative Aspects		.05	.06	.07
F2: Drinking in Moderation		.40	.07	.41**
F3: Rules		-.33	.05	-.40**

Notes. Total R^2 = .35, adjusted R^2 = .34, F (3, 171) = 30.78, p < .001, p = .06. ** p < .001

Table 18

Hierarchical Multiple Regression Results: Predicting Student Alcohol Consumption Using Students' Perception of Parents' Approval ($N = 198$)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.16/.14			
Constant		1.49	.39	
Sex		.25	.13	.13
Year in College		-.06	.06	-.07
Race		-.06	.02	-.16*
Greek Affiliation		-.72	.15	-.32**
Matching Parent		-.23	.15	-.10
Step 2	.22/.20			
Constant		.74	.42	
Sex		.26	.12	.14*
Year in College		-.11	.06	-.12
Race		-.04	.02	-.12
Greek Affiliation		-.61	.15	-.27**
Matching Parent		-.16	.15	-.07
Perceived Parental Approval		.16	.04	.26**

Notes. Total $R^2 = .22$, adjusted $R^2 = .20$, F (6, 191) = 8.94, $p < .001$. *$p < .05$; **$p < .001$

Table 19

Hierarchical Multiple Regression Results: Predicting Students' Negative Consequences Using Students' Perception of Parents' Approval (N = 198)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.05/.03			
Constant		1.89	.22	
Sex		.11	.07	.10
Year in College		-.01	.04	-.02
Race		-.01	.01	-.07
Greek Affiliation		-.22	.09	-.18**
Matching Parent		-.09	.09	-.07
Step 2	.08/.05			
Constant		1.63	.25	
Sex		.11	.07	.11
Year in College		-.03	.04	-.06
Race		-.01	.01	-.05
Greek Affiliation		-.19	.09	-.15*
Matching Parent		-.06	.09	-.05
Perceived Parental Approval		.06	.03	.17*

Notes. Total R^2 = .08, adjusted R^2 = .05, F (6, 191) = 2.69, p = .02. *p < .05; **p = .01

Table 20

Hierarchical Multiple Regression Results: Using Parents' Actual Approval and Students' Perception of Parents' Approval to Predict Student Alcohol Consumption (*N* = 158)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.16/.13			
Constant		1.22	.40	
Sex		.29	.15	.15*
Year in College		-.09	.07	-.10
Race		-.07	.03	-.18*
Greek Affiliation		-.68	.17	-.30**
Step 2	.21/.18			
Constant		.59	.44	
Sex		.29	.14	.15*
Year in College		-.14	.07	-.15
Race		-.06	.03	-.15*
Greek Affiliation		-.59	.17	-.26**
Perceived Parental Approval		.16	.05	.24**
Step 3	.22/.18			
Constant		.59	.44	
Sex		.27	.12	.14
Year in College		-.15	.06	-.17*

Race	-.05	.02	-.14
Greek Affiliation	-.59	.15	-.26**
Perceived Parental Approval	.13	.04	.20*
Actual Parental Approval	.06	.06	.09

Notes. Total $R^2 = .22$, adjusted $R^2 = .18$, F (6, 151) = 6.90, $p < .001$. *$p < .05$; **$p < .001$

Table 21

Hierarchical Multiple Regression Results: Using Parents' Actual Approval and Students' Perception of Parents' Approval to Predict Students' Negative Consequences (*N* = 158)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.06/.04			
Constant		1.83	.23	
Sex		.12	.08	.12
Year in College		-.02	.04	-.03
Race		-.03	.02	-.12
Greek Affiliation		-.23	.10	-.18*
Step 2	.08/.05			
Constant		1.63	.26	
Sex		.12	.08	.12
Year in College		-.03	.04	-.06
Race		-.02	.02	-.10
Greek Affiliation		-.20	.10	-.16*
Perceived Parental Approval		.05	.03	.15
Step 3	.08/.05			
Constant		1.62	.26	
Sex		.11	.08	.11
Year in College		-.04	.04	-.07

Race	-.02	.02	-.09
Greek Affiliation	-.20	.10	-.16*
Perceived Parental Approval	.04	.03	.12
Actual Parental Approval	.03	.04	.06

Notes. Total $R^2 = .08$, adjusted $R^2 = .05$, F (6, 151) = 2.25, $p = .04$. *$p < .05$; **$p < .001$

Table 22

Hierarchical Multiple Regression Results: Predicting Student Alcohol Consumption Using Parents' Alcohol Consumption (N = 158)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.16/.14			
Constant		1.22	.40	
Sex		.29	.15	.15*
Year in College		-.09	.07	-.10
Race		-.07	.03	-.18*
Greek Affiliation		-.68	.17	-.30**
Step 2	.18/.16			
Constant		1.05	.41	
Sex		.32	.14	.17*
Year in College		-.07	.07	-.08
Race		-.06	.03	-.16*
Greek Affiliation		-.65	.17	-.29**
Parent Alcohol Consumption		.17	.08	.17*

Notes. Total R^2 = .18, adjusted R^2 = .16, F (5, 152) = 6.76, p < .001. *p < .05; **p < .001

Table 23

Hierarchical Multiple Regression Results: Predicting Students' Negative Consequences Using Parents' Alcohol Consumption (N = 158)

Model Variables	Model R^2/ Adj R^2	*B*	SE *B*	β
Step 1	.06/.04			
Constant		1.83	.23	
Sex		.12	.08	.12
Year in College		-.02	.04	-.03
Race		-.03	.02	-.12
Greek Affiliation		-.23	.10	-.18*
Step 2	.07/.04			
Constant		1.77	.24	
Sex		.13	.08	.13
Year in College		-.01	.04	-.02
Race		-.02	.02	-.11
Greek Affiliation		-.21	.10	-.17*
Parent Alcohol Consumption		.06	.05	.11

Notes. Total R^2 = .07, adjusted R^2 = .04, F (5, 152) = 2.36, p = .04. *p < .05

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APPENDIX A

ARIZONA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD

APROVAL FORMS

Arizona State University Office of Research Integrity and Assurance 660 S. Mill Avenue Suite 315 Arizona State University Tempe AZ 85287-6111 (Mail Code 6111) Phone: 480-965-6788 Fax: (480) 965-7772		*For Office Use Only:* Date Received: HS Number:

SOCIAL BEHAVIORAL APPLICATION HUMAN SUBJECTS

PROTOCOL INFORMATION

Protocol Title: Date: January 27, 2011
An Examination of Parents' Influence Strategies on College Students' Drinking

PRINCIPAL INVESTIGATOR (PI)

Please note that the PI's CV and human subject's protection training certification must be attached with this application.

Name and Degree(s):
Kory Floyd, PhD

Department/Center:
Hugh Downs School of Human Communication

Mailing Address:
Hugh Downs School of Human Communication
Arizona State University
PO Box 871205
Tempe, AZ 85287

Email:	Phone:	Fax:
Kory.Floyd@asu.edu	480-965-3568	480-965-4291

University Affiliation:
☒ Professor
☐ Associate Professor
☐ Assistant Professor
☐ Instructor
☐ Other: Please specify. ("Other" categories may require prior approval. Students cannot serve as the PI)

CO-INVESTIGATORS (CO-I)

- A Co-I is anyone who has responsibility for the project's design, implementation, data collection, data analysis, or who has contact with study participants**.**
- If the project involves medical procedures or patient care that the PI is not certified or licensed to conduct, a responsible physician or other certified or licensed professional must be included as a Co-I. The application must include a copy of supporting documentation for this individual (CV, license, board certification etc).

Name	Study Role	Affiliation	Department	Email/Tel/Fax	Student (yes/no)
Lisa Menegatos	Study design, Implementation, Data collection, and	Doctoral Candidate	Communication	lisa.menegatos@asu.edu	Yes

	Data Analysis				
Ryan Maliski	Data collection and analysis	Undergraduate Research Assistant	Communication	rmaliski@asu.edu	Yes
Lauren Amaro	Data collection	Doctoral student	Communication	lauren.amaro@asu.edu	Yes
Adam Ali	Data collection	Undergraduate Research Assistant	Communication	abali@asu.edu	Yes

PROJECT FUNDING

1a)How is the research project funded? (A copy of the grant application **must** be provided prior to IRB approval)
☒ Research is **not funded** (Go to question 2)
☐ Funding decision is pending
☐ Research is **funded**

b) What is the source of funding or potential funding? (Check all that apply)
☐ Federal ☐ Private Foundation ☐ Department Funds
☐ Subcontract ☐ Fellowship ☐ Other

c) Please list the name(s) of the sponsor(s):

d) What is the grant number and title?

e) What is the ASU account number/project number?

f) Identify the institution(s) administering the grant(s):

PROJECT SUMMARY

2. Provide a **brief** description of the **background, purpose, and design** of your research. Avoid using technical terms and jargon. Describe all interactions with potential study participants (e.g., how identified, how recruited) including all of the **means you will use to collect data** (e.g. instruments, measures, tests, questionnaires, surveys, interview schedules, focus group questions, observations). Provide a short description of the tests, instruments, or measures**.** (If you need more than a few paragraphs, please attach additional sheets.) **Attach copies of all instruments and questionnaires. FOR ALL OF THE QUESTIONS, WRITE YOUR ANSWERS ON THE APPLICATION RATHER THAN SAYING "SEE ATTACHED".**

Research indicates that approximately 80% of college students drink alcohol, and approximately 40% of them are heavy drinkers. Given the pervasiveness of college drinking, combined with the wide range of negative consequences students can incur when they drink excessively, efforts are needed to decrease college student's alcohol consumption and the problems related to such consumption. Drawing on social cognitive theory, the present project seeks to examine the influence that parents have on their college children's drinking. More specifically, the primary purpose of the research is to gain a better understanding of the content and frequency of alcohol-related communication between parents and their college children, and of how such communication might be associated with college student drinking. A secondary purpose is to examine if college students model their parents' drinking behaviors. While many studies have examined parents' influences on their younger children's alcohol behaviors, research investigating parents' influence on their college aged children's alcohol behaviors is less prevalent.

Data will be collected from both college students and their parents via on-line surveys, using Survey Monkey. The student version of the survey instructs students to choose a parent that they will refer to throughout the survey—the same parent who will be taking the parent version of the survey. The students are then asked questions about the frequency of parent-child alcohol-related communication, and about the content of that communication. Additionally, the student will be asked about how much alcohol s/he consumes and about his/her experience of various negative consequences that are often associated with

college student drinking. The student will also be asked about his/her perception of the parents' alcohol consumption and about the closeness of the parent-child relationship. Finally, the student will be asked various demographic questions. A copy of the student survey is attached. Parents will be asked the same questions (though slightly re-worded) as the student in terms of the frequency and content of alcohol-related communication and the closeness of the parent-child relationship. The parent will also be asked about his/her own alcohol consumption, and his/her perception of the student's alcohol consumption. The parent will also be asked an open-ended question regarding the ways in which s/he attempts to monitor the college students' alcohol use. Lastly, the parent will be asked various demographic questions. A copy of the parent survey is also attached.

Student participants will be recruited from undergraduate communication courses. They will be informed of the study through an announcement posted on Blackboard, which is attached. The Blackboard recruitment announcement will describe the study and explain that students can earn extra credit for participating. It will also explain that in order to participate, they must be 18 – 25 years old and have a living parent or step-parent that they can email and also ask to participate in the study. Students who are interested in the study are asked to email Lisa Menegatos to set up an appointment. Student participants who contact Lisa will be given a day and time to come to an assigned computer lab on campus. When students arrive to the computer lab, they will check in with Lisa or one of the research assistants (Ryan Maliski or Lauren Amaro or Adam Ali). The student will be directed to a computer and to the student version of the on-line survey. The first page of the survey will be the informed consent form. The survey will take approximately 30 to 40 minutes to complete. At the end of the survey, the student will be asked to enter an alpha-numeric code that will be used to match up his/her survey information with his/her parent's information—this code will consist of the student's first and last name initials and the day that the student was born. Once the student completes the survey, s/he will email his/her parent, under the supervision of Lisa Menegatos, asking the parent to participate as well. When the student reaches this point in the survey, s/he will be asked to call Lisa Menegatos over to the computer. Lisa will provide the student with the parent recruitment script that will be cut and pasted into the email to the parent. Lisa will also write down the parent's email address so that she can send the parent a reminder email one week later. This procedure is to ensure that Lisa Menegatos is the only person with access to the list of the parent's email addresses.

The email that the student sends his/her parent will contain a description of the study, a link to the parent version of the on-line survey, and instructions on how to create the matching alpha-numeric code (the student's first and last name initials and the day that the student was born) that the parent will be asked to enter when s/he takes the survey (the code that will allow the parent's survey information to be matched with the student's survey information). The recruitment information that will be provided in the parent's email is also attached. One week after the student emails the parent, Lisa will email the parent a reminder notice. The content of the reminder notice is also attached. The parent version of the on-line survey will take approximately 30 minutes to complete. The first page of the survey will be the informed consent form.

The quantitative survey data will be analyzed with SPSS, primarily through factor analysis and multiple regression.

STUDY DURATION

3. What is the expected duration of the study through data analysis? (Include a timeline, if applicable).

February 15 –March 4: Recruit participants

February 24 – March 25: Data collection

March 21 - April 15: Data analysis

a. When is the expected date that you wish to begin research? (MM/DD/YY)

I would like to begin data collection on 02/24/11. In order to start data collection on that date, I would like to begin recruiting participants on 02/15/11. (must be after submission date) Note: Protocols are approved for a maximum of 1 year. If a project is intended to last beyond the approval period, continuing review and reapproval are necessary. Research cannot begin until you have received an approval letter.

IRB APPROVAL

4. Has this project been reviewed by another IRB? ☐ Yes ☒ No (If yes, please complete the information below and attach a copy of the IRB approval materials).

a) What is the name of the institution?

b) What is the current IRB approval date/status of IRB application?

STUDY SITES

5. Where will the study be conducted? (Check all that apply)

☒ On campus (Please indicate building(s) and room number (s) when known)

Student participants will complete their survey, and email their parents a request to complete the parent version of the survey, at a computer lab on campus. The following locations have been reserved on the following days that fall between February 24th and March 11th:

On Mondays, Wednesdays, and Fridays, BAC Room 213 has been reserved.

On Tuesday and Thursday mornings, COOR room L1-50 has been reserved.

On Tuesday and Thursday afternoons, BA room 396 has been reserved.

☒ Off campus (Please provide location and letter of permission, where applicable)

Parents will complete the on-line survey from a location of their choosing, since the survey link will be emailed to them.

SAMPLE SIZE/DURATION

6a) What is the expected number of individuals to be screened for enrollment?

Approximately 425-525 undergraduate students will be notified of the study. Those that meet the selection criteria and who volunteer to participate will be asked to contact a parent, asking the parent to also participate in the study. Assuming that not every student who is notified of the study will be participating and asking a parent to also participate, an approximate 225-425 parents are also expected to be screened for enrollment.

b)What is the **MAXIMUM** number of subjects that you plan to enroll in the study?

425 students and 425 parents, for a total of 850 participants

c) What is the approximate number of: 50% Male Students 50% Female Students

It is difficult to guess how many mothers/step-mothers versus fathers/step-fathers will participate in the study; however, it is common in such studies for there to be a much higher percentage of mothers/step-mothers than fathers/step-fathers who participate.

d) Indicate the age range of the participants that you plan to enroll in your study. Students: 18 to 25
Parents: 35 to 70

e) What is the expected duration of participation for each subject? (at each contact session and total)

For students, the expected time commitment is between 45 minutes to an hour. This time estimate includes setting up the appointment time to participate in the study, taking the survey, and e-mailing their parent asking their parent to participate in the survey. For parents, the estimated time commitment is 30-35 minutes. This time estimate includes reading their child's email and taking the survey.

SUBJECTS

7. Will the study involve any of the following participants? (Please check all that apply if your study specifically targets these populations) No

☐ Children (under 18) ☐ Pregnant women
☐ Prisoners or detainees ☐ Persons at high risk of becoming detained or imprisoned
☐ Decisionally impaired ☐ Patients- what is the status of their health?
☐ Fetuses ☐ Native Americans
☐ Non-English speakers (Include copy of all materials in language of participants and certification of the translation and back-translation: http://researchintegrity.asu.edu/humans/forms)

a) If **any** of the above categories have been checked, please state how you will protect the rights and privacy of these individuals.

b) Please provide the rationale for the choice of the subjects including any inclusion criteria.

c) Will any ethnic/racial or gender groups be excluded from this study? If so, provide the rationale for the exclusion criteria.

RECRUITMENT

8. a)Describe the process(es) you will use to **recruit participants** and inform them about their role in the study. (Attach copies of any recruitment materials.)

Participants will be informed of the study in their communication classes through an announcement posted on Blackboard. The recruitment announcement is attached. It informs participants of the purpose of the study, what the study would involve, and of the opportunity to earn extra credit in their class. The recruitment announcement also explains that in order to participate, students must be between the ages of 18 and 25 years old, and they must have a living parent or step-parent that they can email and also ask to participate in the study. Students who meet this criteria and who are interested in participating in the study are then asked to email Lisa Menegatos to set an appointment to participate. Each student will be assigned a date and time for them to take the survey at a designated computer lab on the ASU Tempe campus. Students who do not meet the selection criteria will be provided with an alternative assignment for which they can earn extra credit points. The alternative extra credit assignment is also attached.

Parents will be recruited by their college children. Upon completing the student version of the survey, the student will email the parent (from the student's email account) asking him/her to participate. Lisa Menegatos will be sitting with the student when this email is created to ensure that the student copies the IRB approved parent recruitment script into the email, and to ensure that the student correctly includes his/her matching alpha-numeric code that the parent will need to enter when taking the survey so as to match up the parent's survey information with his/her child's survey responses. Lisa will also write down the parent's email address so that she can

send the parent a reminder email one week later. This reminder e-mail will include the alpha-numeric code (but not the student's name) in case the parent had misplaced the original email sent by the student. The parent recruitment script and the parent reminder script are also attached.

a) Will any of the following be used? (Check all that apply and attach copies)
☒ Internet/Email
☐ Newspapers/radio/television advertising
☐ Posters/brochures/letters
☐ Other

b) Does any member of the research team have a relationship (i.e., teacher, coach, physician, therapist, service provider, etc) with individuals who will be recruited for this study or with institutions that will be used to recruit for this study? If yes, describe this relationship in detail and explain how the research process will avoid any potential problems (e .g, coercion or appearance of possible coercion in recruiting) or conflicts of interest arising from this investigator's dual roles.

The general answer is no. To avoid any potential problems, participants will not be recruited from courses taught by Kory Floyd, Lisa Menegatos, or Lauren Amaro. However, it is possible that students who are enrolled in the class(es) where recruitment does occur are also enrolled in one of Lisa and/or Lauren's classes. Because recruitment will occur through Blackboard, neither Lisa or Lauren would know if a potential participant were in their classes until that student emailed Lisa to participate or showed up to take the survey when Lauren was assisting in the computer lab. To help reduce the appearance of possible coercion, such students would be reminded that their participation is totally voluntary, and their grades would not be affected in any way should they choose not to participate.

DECEPTION

9. Does the proposed research require that you deceive participants in any way? ☐ Yes ☒ No

a) If your response is "yes," describe the type of **deception** you will use, indicate why it is necessary for this study, and provide a copy of the debriefing script.

COMPENSATION

10. Will any type of compensation be used? (e.g. money, gift, raffle, extra credit, etc)
a) ☒ Yes (Please describe what the compensation is) ☐ No (go to question 11)
Students will be offered extra credit for their participation in this study.

b) Explain why the compensation is reasonable in relation to the experiences of and burden on participants.

Offering extra credit for participation in an on-line survey is a common practice in the Hugh Downs School of Communication. While participation in the study might serve as a time burden for students, they are being compensated for that time with course credit.

c) Is compensation for participation in a study or completion of the study? (Note: participants must be free to quit at any time without penalty including loss of benefits).
☒ Participation ☐ Completion

d) If any of the participants are economically disadvantaged, describe the manner of compensation and explain why it is fair and not coercive. N/A

INFORMED CONSENT

11. Describe the procedures you will use to **obtain and document informed consent and assent**. **Attach copies of the forms that you will use.** In the case of secondary data, please attach original informed consent or describe

below why it has not been included. Fully justify a request for a waiver of written consent or parental consent for minors.
(The ASU IRB website has additional information and sample consent and assent forms.)
The informed consent forms, which are attached, will appear on the first page of the on-line surveys. Participants will be instructed in the consent form that by filling out the on-line survey, they are signifying their consent.

RISKS

12. What are the potential risks of the research? (Check all that apply)
☐ Physical harm
☐ Psychological harm
☒ Release of confidential information
☐ Other

a) Describe any potential risks to human subjects and the steps that will be taken to reduce the risks. Include any risks to the subject's well-being, privacy, emotions, employability, criminal, and legal status.

There is the potential risk to participants' privacy due to the possibility that confidential information might be compromised. To help reduce such risk, numerous steps will be taken. First, names will not be elicited on any of the study materials (the two surveys). In the data set, both students and their parents will be identified with an alpha-numeric code so that their data can be matched up. Students and parents will be informed in the survey and in the informed consent forms that their code consists of the initials of the student's first and last name and the day of the month that the student was born.

BENEFITS

13a) What are the potential benefits to the individual subject, if any, as a result of being in the study?

For student participants, the individual benefit is receiving extra credit for a course.

For parent participants, a benefit is helping their child earn additional points in a course. Additionally, parents will be told that they are welcome to contact Lisa Menegatos once the study is complete if they are interested in learning about the general, overall (aggregated) results of the study. Such information might be helpful to parents who are interested in gathering more information about college student drinking and/or about how to talk to their child about this topic.

b) What are the potential benefits, if any, to others from the study?

This study has the potential to benefit students, parents, and college health practitioners. Currently, little is known about how parents can effectively be utilized in drinking prevention programs on college campuses. Research that shows what types of parental alcohol related messages are associated with higher or lower degrees of dangerous drinking amongst college students could be used to develop prevention programs and to educate parents on how to talk to their young adult children about alcohol.

DATA USE

14. How will the data be used? (Check all that apply)

- ☒ Dissertation
- ☐ Thesis
- ☒ Results released to participants/parents
- ☐ Results released to agency or organization
- ☐ Other *(please describe):*
- ☒ Publication/journal article
- ☐ Undergraduate honors project
- ☐ Results released to employer or school
- ☒ Conferences/presentations

PROTECTION OF CONFIDENTIALITY

15. Describe the steps you will take to ensure the confidentiality of the participants and data.

Names will not be elicited in either the student survey or the parent survey. Both students and their parents will be identified with an alpha-numeric code (that will consist of the student's first and last initials and the day of the month that the student was born) so that their data can be matched up. Thus, there will NOT be a master list linking student names or parent names or the alpha-numeric code.

a) Indicate how you will safeguard data that includes identifying or potentially identifying information (e.g. coding).

A list of parents' email addresses will be maintained by Lisa Menegatos so that she can send a reminder email to parents. This email list will not contain parent names or student names or the alpha-numeric code. When the list is not being used, it will be stored in a locked box in Lisa's desk in Stauffer room 207-A. Lisa is the only person who will have the key to the locked box. When the list is being used during the computer lab sessions, it will be in a manila envelope, held only by Lisa Menegatos.

There will be a separate list of student names that will be maintained for extra credit purposes. This list will not be linked to the parent email addresses, nor will it be linked to the alpha-numeric code. Once the students' instructors have been notified of study participation for extra credit purposes, the list will be destroyed.

b) Indicate when identifiers will be separated or removed from the data.
N/A—no list of identifiers will be connected to the data.

c) Will the study have a master list linking participants' identifying information with study ID codes, and thereby, their data? If so, provide a justification for having a master list. (Note: In many cases, the existence of a master list is the only part of a study that raises it above minimal risk, that is, places participants at risk.)

No

d)If you have a master list and/or data with identifiers, where on campus will the list and/or data be kept? (**Data sets with identifiers and master lists, whether electronic or in hard copy, should be securely stored on an ASU campus except in unusual circumstances (e.g., research conducted out of the state or country).)**

N/A

e) If you have a master list, when will it be destroyed?
A master list of study ID codes is NOT being used. The list of parent email addresses will be destroyed once data collection is complete. The separate list of student participants being kept for extra credit purposes will also be destroyed once instructors are notified, which will occur after data collection is complete.

f) How long do you plan to retain the data? Survey data will be kept for approximately three years.

g) How will you dispose of the data? The computer files with the survey information will be deleted.

h) Where on campus will you store the signed consent, assent, and parental permission forms (If applicable)? (**Consent, assent, and parent permission forms should be securely stored on an ASU campus)**
Because the consent forms will be provided on-line as the first page of the survey, this is not applicable.

INVESTIGATOR INTERESTS

16Have all investigator filed a current annual conflict of interest questionnaire with the ASU Office of Research Integrity and Assurance? It is the COEUS module at: http://researchintegrity.asu.edu/coi ☐ Yes ☒ No

All investigators except Ryan Maliski have done so. Ryan attempted to complete the form on-line, but an "error" notice occurred, perhaps because he is not a university employee (he is an undergraduate student who is assisting with the research project).

a) Do any of the researchers or their family members, have a financial interest in a business which owns a technology to be studied and/or is sponsoring the research? ☐ Yes ☒ No (If yes, please describe and disclose in the consent form.)

b) Are there any plans for commercial development related to the findings of this study?
☐ Yes (If yes, please describe.) ☒ No

c) Will the investigator or a member of the investigator's family financially benefit if the findings are commercialized?
☐ Yes (If yes, please describe.) ☒ No

d) Will participants financially benefit if the findings are commercialized?
☐ Yes (If yes, please describe.) ☒ No

BIOLOGICAL MATERIALS

17a) Will biological materials be collected from subjects or given to subjects? ☐ Yes ☒ No (If no, please skip to question 18)

b) Provide a description of the material (blood, tissue, vectors, antibodies, etc.) that will be used:

c) If the study involves human blood, do you have the required ASU Biosafety disclosure on file? ☐ Yes
☐ No(If yes, what is the Biosafety Disclosure number.)

d) Will any of the material being used in the study come from a third party? ☐ Yes ☐ No (If yes, attach copy of the Material Transfer Agreement if required.)

e) Does this study involve transfer of genetic material of animal tissue into humans? ☐ Yes ☐ No
(If yes, please cite the ASU Institutional Biosafety Disclosure number).

TRAINING

18. The research team must document completion of human subjects training from within the past 3 years.
(For more information see: http://researchintegrity.asu.edu/training/humans)

Please provide the date that the PI and co-investigators completed the training and attach the certificate.

Dr. Kory Floyd	**August 2009**
Lisa Menegatos	**August 2009**
Ryan Maliski	**January 2011**
Lauren Amaro	**November 2010**

PRINCIPAL INVESTIGATOR

In making this application, I certify that I have read and understand the ASU Procedures for the Review of Human Subjects Research and that I intend to comply with the letter and spirit of the University Policy. Changes in to the study will be submitted to the IRB for written approval prior to these changes being put into practice. **I also agree and understand that informed consent/assent records of the participants will be kept for at least three (3) years after the completion of the research**. **Attach a copy of the PI's CV unless one is already on file with the Office of Research Integrity and Assurance.**
Name (first, middle initial, last):
Dr. Kory W. Floyd

Signature: Date:

FOR OFFICE USE:	This application has been reviewed by the Arizona State University IRB: ☐ Full Board Review ☐ Expedite Categories: ☐ Exempt Categories: ☐ Approved ☐ Deferred ☐ Disapproved ☐ Project requires review more often than annual Every months
	Signature of IRB Chair/Member: Date:

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Kory Floyd STAUF
From:	Mark Roosa, Chair Soc Beh IRB
Date:	02/14/2011
Committee Action:	**Expedited Approval**
Approval Date:	02/14/2011
Review Type:	Expedited F7
IRB Protocol #:	1101005963
Study Title:	An Examination of Parents' Influence Strategies on College Students' Drinking
Expiration Date:	02/13/2012

The above-referenced protocol was approved following expedited review by the Institutional Review Board.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date. You may not continue any research activity beyond the expiration date without approval by the Institutional Review Board.

Adverse Reactions: If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Soc Beh IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Soc Beh IRB. The new procedure is not to be initiated until the IRB approval has been given.

Please retain a copy of this letter with your approved protocol.

APPENDIX B

INSTRUMENTATION

CONSENT FORM

An Examination of Parents' Influence Strategies on College Students' Drinking
Student Portion of the Study

The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.

My name is Lisa Menegatos, and I am a doctoral candidate under the direction of Dr. Kory Floyd in the Hugh Downs School of Communication. We invite your participation in a research study that examines the alcohol-related messages parents exchange with their young adult children who are attending college.

The primary purpose of the research is to gain a better understanding of the content and frequency of alcohol-related communication between parents and their college children, and of how such communication might be associated with college student drinking. A secondary purpose is to examine if college students model their parents' drinking behaviors. While many studies have examined parents' influences on their younger children's alcohol behaviors, research investigating parents' influence on their college aged children's alcohol behaviors is less prevalent.

DESCRIPTION OF RESEARCH STUDY
If you decide to participate, you will be asked to take an online survey that will ask you about conversations you have had with one of your parents about alcohol and/or college drinking. The survey will also ask you about your own drinking behaviors, your parent's drinking behaviors, the closeness of your relationship with your parent, and various demographic questions.

Once you have completed the survey, you will be asked to email your parent (the same parent that you referenced in your questionnaire), asking him or her to take a parent version of this survey. As such, the parent that you choose to reference for your survey will need to be a parent whom you can contact via e-mail. You and your parent both will be asked to enter an alpha-numeric code on your surveys, so that the survey information can be matched up without using any names. This code will consist of your first and last initial and the day of the month you were born. The sole purpose of this code is to connect your survey with the survey your parent completes. Your name will not be connected with your survey responses. Your survey information will not be made available to your parent, nor will his/her survey information be made available to you.

If you say YES, then your participation will last for approximately 30 to 50 minutes here today. You are free to withdraw from the survey at any time. Also, with the exception of questions regarding your age (you must be between the ages of 18 and 25 years old to participate), your gender, which parent you will be referencing throughout the survey (mother, father, step-mother, or step-father), and the code that will match your parent's survey information with your survey information, you are free to skip questions that you choose not to answer.

Several hundred students and their parents are expected to participate in this study.

RISKS
The only known risk from taking part in this study is the possibility that confidential information might be compromised. However, every effort will be made to keep your information, and your parent's information, confidential. Details of those efforts are provided below in the section labeled "confidentiality." Additionally, in any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS
The main benefit of your participation in the research is receiving extra credit in your communication class. You will also be participating in a study that can potentially help in the development of college alcohol prevention programs that involve parents.

CONSENT FORM (continued)

An Examination of Parents' Influence Strategies on College Students' Drinking
Student Portion of the Study

CONFIDENTIALITY
All information obtained in this study is strictly confidential. The results of this research study may be used in reports, presentations, and publications, but the researchers will not identify you. In order to maintain confidentiality of your records, the survey data will not include your name or any other identifiers. Instead your information will be identified with a confidential alpha-numeric code.

While data is being collected (for approximately one month), Lisa Menegatos will maintain a list of parent e-mails so as to send a general reminder notification about taking the survey. She is the only person who will have access to this list. When not in use, the parent e-mail list will be secured in a locked box in her ASU office. Once data collection is complete the list of email addresses will be shredded.

WITHDRAWAL PRIVILEGE
Participation in this study is completely voluntary. It is ok for you to say no. Even if you say yes now, you are free to say no later, and withdraw from the study at any time. If you withdrawal in the middle of the study, you will still be able to receive extra credit points for participating.

COSTS AND PAYMENTS
There is no payment for your participation in the study.

VOLUNTARY CONSENT
Any questions you have concerning the research study or your participation in the study, before or after your consent, will be answered by Lisa Menegatos or Dr. Kory Floyd. Lisa Menegatos can be contacted via email at lisa.menegatos@asu.edu. Dr. Floyd can be contacted via email at Kory.Floyd@asu.edu or by phone at 480-965-3568.

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk; you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at 480-965 6788.

This form explains the nature, demands, benefits and any risk of the project. Remember, your participation is voluntary. You may choose not to participate or to withdraw your consent and discontinue participation at any time without penalty or loss of benefit. By filling out this online survey, you are both signifying your consent to participate in the study, and acknowledging that you agree knowingly to assume any risks involved. However, you are not waiving any legal claims, rights, or remedies. If you would like a copy of this consent form, please notify a member of the research team and they will provide you with a hard copy.

Instructions: This part of the survey will ask you about conversations or interactions you have had with a parent about college drinking and/or alcohol consumption. Please select one parent — the parent that you talk with the most— and keep him or her in mind throughout the entire survey. This should be the same parent you will be emailing and asking to take the parent version of the survey.

Please indicate which parent you will be referencing when taking this survey:

- ◯ Biological Mother
- ◯ Biological Father
- ◯ Adoptive Mother
- ◯ Adoptive Father
- ◯ Step-mother
- ◯ Step-father

Please think about the conversations or interactions you have had with this parent about alcohol since you graduated from high school until now.

Since graduating from high school until now, have you and this parent ever talked about drinking?

- ◯ Yes
- ◯ No
- ◯ Not sure

On average, how often would you say this parent has talked with you about drinking since you graduated from high school until now?

- ◯ Daily
- ◯ Approximately Once a Week
- ◯ Approximately Once a Month
- ◯ Approximately Every Few Months
- ◯ Once a Year
- ◯ Less Than Once a Year

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent and I have talked about the dangers of drinking and driving.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me that drinking will help me make friends.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me it was okay to drink as long as I did not get drunk.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has warned me that too much partying could interfere with school.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me that drinking alcohol will help me hook up.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has encouraged me to use my own judgment when it comes to drinking alcohol.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how alcohol changes someone's personality.	◯	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent and I have talked about how to find fun things to do instead of drinking.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has threatened to discipline me if I get drunk.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how difficult it is to make accurate judgments of how drunk you are.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about the negative consequences of mixing alcohol and sex.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me she or he expects me to drink in college.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me to eat while I am drinking so that I don't get too drunk.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has offered me rewards for not drinking.	◯	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent has told me to drink a lot of water while I am drinking.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me that drinking alcohol makes it easier to talk to people.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about the importance of not being pressured by others into drinking.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has warned me that getting drunk increases the chances that I might take advantage of someone sexually.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me I was not allowed to drink before I turned 21.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me I was not allowed to drink period, regardless of how old I am.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about the importance of being able to improve my mood without the use of alcohol.	◯	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent has talked to me about the signs of alcohol poisoning.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me to always keep my eyes on my drink.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has warned me that too much partying could hurt my grades.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about the ways that alcohol can impair my judgment.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me she or he expects me to experiment with alcohol.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has given me suggestions on how to drink in moderation so that I don't get drunk.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about alternatives to falling asleep without drinking.	◯	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent told me it was okay to drink at home under parental supervision.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has warned me that drinking too much might cause me to do something I later regretted.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me that drinking just to go along with the crowd is bad.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me that drinking alcohol makes it easier to have fun.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how mixing alcohol with medications and other drugs can be dangerous.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how drinking does not really make someone more of an adult.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent told me to pace myself when I am drinking.	◯	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent has given me advice on how to handle peer pressure to drink.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent warned me that getting drunk increases the chances that I might be taken advantage of sexually.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how drinking could get me into trouble with the police.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about what the school's punishment would be if I were caught drinking.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about the risk of riding in a car with someone who has been drinking.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me to hang out with trusted friends when I am drinking.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how s/he would punish me if I were caught drinking.	◯	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent has told me that drinking alcohol is a good way to help me relieve stress.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how social drinking may lead to alcoholism.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent told me to come to talk to him or her if I thought I had a drinking problem.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, my parent told me stories of his or her drinking days when he/she was in high school or college.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how being caught drinking might lead to suspension from school.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has talked to me about the benefits of drinking.	◯	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent and I have talked about how alcohol works in the body.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how alcohol can create a false sense of power.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how drinking can make problems worse, not better.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how drinking is bad for health.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how drinking can make someone physically sick.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about the effects of alcohol on making decisions.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent told me not to go to parties where there was alcohol.	◯	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent and I have talked about how my being caught drinking might make my friends' parents prohibit them from hanging out with me.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how drinking could lead to serious drinking problems.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me to eat before I drink so that I don't get too drunk.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has only hinted that I should not drink.	◯	◯	◯	◯	◯	◯	◯
If you are still paying attention, mark the number two as the answer to this question.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how embarrassing it would be for the family if I were caught drinking.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has expressed a zero-tolerance rule for alcohol.	◯	◯	◯	◯	◯	◯	◯

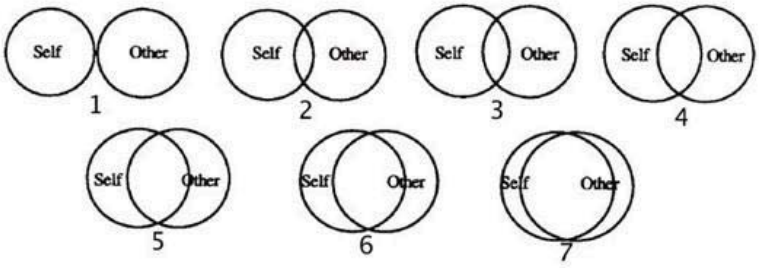
Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with this parent since graduating from high school until now. Please read the following statements and indicate the extent to which you and this parent have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since I graduated from high school, this parent has given me advice on what to say to someone who offers me a drink.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about how alcohol can get in the way of making true friends.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has offered me gifts for not drinking.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me that drinking alcohol will help me feel more comfortable in awkward situations.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me that I should party while I am in college.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent has told me it's okay to drink as long as it doesn't interfere with my school work.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, this parent and I have talked about alternatives to drinking to celebrate special occasions.	◯	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about the way this parent has communicated with you about alcohol since you've graduated from high school until now. Please read the following statements and indicate the extent to which you agree or disagree.

	Strongly Disagree	2	3	4	5	6	Strongly Agree
Since I've graduated from high school, this parent and I typically have had unclear conversations about alcohol.	◯	◯	◯	◯	◯	◯	◯
Since I've graduated from high school, when this parent and I talk about alcohol, it is usually a one-way conversation with him/her lecturing me.	◯	◯	◯	◯	◯	◯	◯
Since I've graduated from high school, when this parent and I talk about alcohol, it is usually a two-way conversation where both of us participate in the conversation.	◯	◯	◯	◯	◯	◯	◯
Since I graduated from high school, discussions with this parent about drinking have been an ongoing occurrence.	◯	◯	◯	◯	◯	◯	◯
This parent and I have had just one "big" conversation about alcohol since I graduated from high school.	◯	◯	◯	◯	◯	◯	◯
Since I've graduated from high school, this parent generally has been very open with me in our conversations about alcohol.	◯	◯	◯	◯	◯	◯	◯
Since I've graduated from high school, this parent typically has been very direct with me in our conversations about alcohol.	◯	◯	◯	◯	◯	◯	◯

Instructions: Below is a series of circles that represent the closeness you feel to this parent. The more overlapped these circles are, the closer your relationship is.



Using the numbers below these diagrams, how close would you say your relationship with this parent is?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7

This next section of the survey will help us describe those who take part in the study. It includes some demographics questions and questions about alcohol use.

How old are you?

- ◯ 18
- ◯ 19
- ◯ 20
- ◯ 21
- ◯ 22
- ◯ 23
- ◯ 24
- ◯ 25

Which of the following best describes your classification at ASU?

- ◯ Freshman (0-30 credit hours completed)
- ◯ Sophomore (31-60 credit hours completed)
- ◯ Junior (61-90 credit hours completed)
- ◯ Senior (91 or more credit hours completed)

Are you:

- ◯ Female
- ◯ Male

Think back over the last TWO WEEKS. How many times have you had FIVE OR MORE drinks* in a single sitting?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ None
- ◯ Once
- ◯ Twice
- ◯ 3 to 5 times
- ◯ 6 to 9 times
- ◯ 10 or more times

Think back over the last TWO WEEKS. How many times have you had FOUR OR MORE drinks* in a single sitting?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ None
- ◯ Once
- ◯ Twice
- ◯ 3 to 5 times
- ◯ 6 to 9 times
- ◯ 10 or more times

During the PAST 30 DAYS, on how many days have you consumed alcohol (beer, wine, liquor) in any amount?

- ◯ 0 days
- ◯ 1-2 days
- ◯ 3-5 days
- ◯ 6-9 days
- ◯ 10-19 days
- ◯ 20-29 days
- ◯ All 30 days

What is the average number of drinks* you consume in a week?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ 0
- ◯ 1-2
- ◯ 3-4
- ◯ 5-6
- ◯ 7-8
- ◯ 9-10
- ◯ 11-12
- ◯ 13-14
- ◯ 15-16
- ◯ 17-18
- ◯ 19-20
- ◯ 21-22
- ◯ 23-24
- ◯ 25-26
- ◯ 27-28
- ◯ 29-30
- ◯ 31 or more

If you are still paying attention to these questions, click six as the answer to this question.

- ◯ 0
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
- ◯ 8

How much do you weigh?

Please enter the number of pounds: _____

Instructions: Please indicate how often you have experienced the following since this school year began (since August) DUE TO YOUR DRINKING.

	Never	Once	Twice	3-5 times	6-9 times	10 or more times
Had a hangover	◯	◯	◯	◯	◯	◯
Performed poorly on a test or important project	◯	◯	◯	◯	◯	◯
Been in trouble with police, residence hall, or other college authorities	◯	◯	◯	◯	◯	◯
Damaged property, pulled fire alarm, etc.	◯	◯	◯	◯	◯	◯
Got into an argument or fight	◯	◯	◯	◯	◯	◯

Instructions: Please indicate how often you have experienced the following since this school year began (since August) DUE TO YOUR DRINKING.

	Never	Once	Twice	3-5 times	6-9 times	10 or more times
Got nauseated or vomited	◯	◯	◯	◯	◯	◯
Driven a car while under the influence	◯	◯	◯	◯	◯	◯
Missed a class	◯	◯	◯	◯	◯	◯
Been criticized by someone I know	◯	◯	◯	◯	◯	◯
Thought I might have a drinking or other drug problem	◯	◯	◯	◯	◯	◯

Instructions: Please indicate how often you have experienced the following since this school year began (since August) DUE TO YOUR DRINKING.

	Never	Once	Twice	3-5 times	6-9 times	10 or more times
Had a memory loss	◯	◯	◯	◯	◯	◯
Done something I later regretted	◯	◯	◯	◯	◯	◯
Been arrested for Driving Under the Influence or Driving While Intoxicated	◯	◯	◯	◯	◯	◯
Been taken advantage of sexually	◯	◯	◯	◯	◯	◯
Taken advantage of someone else sexually	◯	◯	◯	◯	◯	◯

Instructions: Please indicate how often you have experienced the following since this school year began (since August) DUE TO YOUR DRINKING.

	Never	Once	Twice	3-5 times	6-9 times	10 or more times
Tried unsuccessfully to stop using alcohol	◯	◯	◯	◯	◯	◯
Thought seriously about suicide	◯	◯	◯	◯	◯	◯
Tried to commit suicide	◯	◯	◯	◯	◯	◯
Been hurt or injured	◯	◯	◯	◯	◯	◯

Instructions: The next set of questions asks you about your PARENT'S drinking. When answering these questions, make sure you are referencing the same parent that you were referencing at the beginning of the survey. This is the same parent to whom you will be emailing the parent version of the survey.

Throughout this survey, the parent I have been referring to, and will continue to refer to, is my

- ◯ Biological Mother
- ◯ Biological Father
- ◯ Adoptive Mother
- ◯ Adoptive Father
- ◯ Step-mother
- ◯ Step-father

Think back over the last TWO WEEKS. TO THE BEST OF YOUR KNOWLEDGE, how many times has your PARENT had FIVE OR MORE drinks* in a single sitting?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ None
- ◯ Once
- ◯ Twice
- ◯ 3 to 5 times
- ◯ 6 to 9 times
- ◯ 10 or more times
- ◯ I don't know

Think back over the last TWO WEEKS. TO THE BEST OF YOUR KNOWLEDGE, how many times has your PARENT had FOUR OR MORE drinks* in a single sitting?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ None
- ◯ Once
- ◯ Twice
- ◯ 3 to 5 times
- ◯ 6 to 9 times
- ◯ 10 or more times
- ◯ I don't know

During the PAST 30 DAYS, TO THE BEST OF YOUR KNOWLEDGE, on how many days did this PARENT consume alcohol (beer, wine, liquor) in any amount?

- ◯ 0 days
- ◯ 1-2 days
- ◯ 3-5 days
- ◯ 6-9 days
- ◯ 10-19 days
- ◯ 20-29 days
- ◯ All 30 days
- ◯ I don't know

TO THE BEST OF YOUR KNOWLEDGE, what is the average number of drinks* this PARENT consumes in a week?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ 0
- ◯ 1-2
- ◯ 3-4
- ◯ 5-6
- ◯ 7-8
- ◯ 9-10
- ◯ 11-12
- ◯ 13-14
- ◯ 15-16
- ◯ 17-18
- ◯ 19-20
- ◯ 21-22
- ◯ 23-24
- ◯ 25-26
- ◯ 27-28
- ◯ 29-30
- ◯ 31 or more
- ◯ I don't know

Instructions: The next set of questions asks about the degree to which this parent approves of you drinking alcohol. Please indicate the extent to which you agree or disagree with each statement.

	Strongly Disagree	2	3	4	5	6	Strongly Agree
This parent approves of me drinking alcohol occasionally.	◯	◯	◯	◯	◯	◯	◯
This parent approves of me drinking alcohol regularly.	◯	◯	◯	◯	◯	◯	◯
This parent approves of me drinking alcohol heavily.	◯	◯	◯	◯	◯	◯	◯
This parent does not approve of me drinking at all.	◯	◯	◯	◯	◯	◯	◯

Are you a full time student?

- ◯ Yes (enrolled in at least 12 credit hours)
- ◯ No (enrolled in less than 12 credit hours)

Are you a member of a fraternity or sorority?

- ◯ Yes
- ◯ No

How would you describe your ethnic background? Please check all that apply.

- ☐ White or European American
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Asian
- ☐ Native Hawaiian/Pacific Islander
- ☐ American Indian/Alaska Native
- ☐ Other

Where do you currently live?

- ◯ Campus Residence Hall
- ◯ Fraternity or Sorority
- ◯ Other University Housing
- ◯ Off campus with friends/roommates
- ◯ Off campus with parent/guardian
- ◯ Off campus with other family members
- ◯ Off campus by myself
- ◯ Other

Instructions: The last survey question asks you to enter an alpha-numeric code that can be used to match your confidential survey information with your parent's confidential survey information. Your alpha-numeric code should be the first initial of your first name, the first initial of your last name, and then the day of the month that you were born.

For example, a student named Shelby Miller, born on April 23rd, would enter SM23 as his/her alpha-numeric code.

If you were born before the 10th of the month, please enter a zero before the day. For example, if a student named Alex Jackson were born on December 3rd, she/he would enter AJ03 as the alpha-numeric code.

What is your alpha-numeric code?

Thank you for participating in this part of the study. Now, please raise your hand and ask Lisa Menegatos to come over to your computer so that she can help you proceed to the next step, which is Part II of this study.

Part II of this study asks for you to email the parent you have been referring to throughout this survey, and request his or her participation in the parent version of the study. Lisa Menegatos will provide you with the information that needs to go in the parent email (the parent survey link, instructions on entering the matching alpha-numeric code, and the IRB approved recruitment information). Lisa will also ask for your parent's email address so that she can send him or her a reminder email in one week.

Please do not discuss your survey answers, or any of the survey questions, with your parent until after s/he has completed the survey.

Your instructor will be notified of your participation for extra credit in March, when data collection is complete.

Thank you again for your time and assistance.

Parent Alcohol Communication Survey

CONSENT FORM

An Examination of Parents' Influence Strategies on College Students' Drinking
Parent Portion of the Study

The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.

My name is Lisa Menegatos, and I am a doctoral candidate under the direction of Dr. Kory Floyd in the Hugh Downs School of Communication. We invite your participation in a research study that examines the alcohol-related messages parents exchange with their young adult children who are attending college.

The primary purpose of the research is to gain a better understanding of the content and frequency of alcohol-related communication between parents and their college children, and of how such communication might be associated with college student drinking. A secondary purpose is to examine if college students model their parents' drinking behaviors. While many studies have examined parents' influences on their younger children's alcohol behaviors, research investigating parents' influence on their college aged children's alcohol behaviors is less prevalent.

DESCRIPTION OF RESEARCH STUDY
If you decide to participate, you will be asked to take an online survey that will ask you about conversations you have had with your young adult child who is currently attending ASU-- conversations about alcohol and/or college drinking. The survey will also ask you about your own drinking behaviors, your ASU student's drinking behaviors, the closeness of your relationship with your child, and various demographic questions. At the start of the survey, you will be asked to enter an alpha-numeric code that will be used to match up your confidential survey responses with your child's confidential survey responses. This code will consist of your child's first and last initial and the day of the month he or she was born. The sole purpose of this code is to connect your survey with the survey your son or daughter has already completed without having to ask for any names. Your name will not be connected with your survey responses. Your survey information will not be made available to your child, nor will his/her survey information be made available to you.

If you say YES, then your participation in this study will last for approximately 25 minutes. You are free to withdraw from the study at any time. With the exception of questions regarding the alpha-numeric code that will allow the researchers to match the surveys together, your gender, and your role in the family (mother, father, step-mother, or step-father), you are free to skip questions that you choose not to answer.

Several hundred students and their parents are expected to participate in this study.

RISKS
The only known risk from taking part in this study is the possibility that confidential information might be compromised. However, every effort will be made to keep your information, and your child's information, confidential. Details of those efforts are provided below in the section labeled "confidentiality." Additionally, in any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS
While there are no direct benefits to you, your child has received extra credit in one of his or her communication classes for participating in this study. Additionally, the information that you provide can potentially help in the development of college alcohol prevention programs that involve parents. Finally, once the study is complete, parents who are interested in learning about the general, overall findings of the study can contact Lisa Menegatos at lisa.menegatos@asu.edu. Such information might be helpful to parents who are interested in gathering more information about college student drinking and/or about how to talk to

CONSENT FORM (continued)

An Examination of Parents' Influence Strategies on College Students' Drinking
Parent Portion of the Study

their young adult child about this topic.

CONFIDENTIALITY
All information obtained in this study is strictly confidential. The results of this research study may be used in reports, presentations, and publications, but the researchers will not identify you. In order to maintain confidentiality of your records, the survey data will not include your name or any other identifiers. Instead your information will be identified with a confidential alpha-numeric code. As explained above, this code will be used to match up your survey information with your ASU student's survey information.

While data is being collected (for approximately one month), Lisa Menegatos will maintain a list of parent e-mails so as to send a general reminder notification about taking the survey. She is the only person who will have access to this list. When not in use, the parent e-mail list will be secured in a locked box in her ASU office. Once data collection is complete the list of email addresses will be shredded.

WITHDRAWAL PRIVILEGE
Participation in this study is completely voluntary. It is ok for you to say no. Even if you say yes now, you are free to say no later, and withdraw from the study at any time.

COSTS AND PAYMENTS
There is no payment for your participation in the study.

VOLUNTARY CONSENT
Any questions you have concerning the research study or your participation in the study, before or after your consent, will be answered by Lisa Menegatos or Dr. Kory Floyd. Lisa Menegatos can be contacted via email at lisa.menegatos@asu.edu. Dr. Floyd can be contacted via email at Kory.Floyd@asu.edu or by phone at 480-965-3568.

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk; you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at 480-965-6788.

This form explains the nature, demands, benefits and any risk of the project. Remember, your participation is voluntary. You may choose not to participate or to withdraw your consent and discontinue participation at any time without penalty or loss of benefit. By filling out this online survey, you are both signifying your consent to participate in the study, and acknowledging that you agree knowingly to assume any risks involved. However, you are not waiving any legal claims, rights, or remedies.

Parent Alcohol Communication Survey

Instructions: This first survey question asks you to enter an alpha-numeric code that can be used to match your confidential survey information with your ASU student's confidential survey information. Your alpha-numeric code should be the first initial of your CHILD'S first name, the first initial of your CHILD'S last name, and then the day of the month that your CHILD was born.

For example, the parent of an ASU student named Shelby Miller, who was born on April 23rd, would enter SM23 as his/her alpha-numeric code.

If your child was born before the 10th of the month, please enter a zero before the day. For example, if a student named Alex Jackson was born on December 3rd, his/her parent would enter AJ03 as the alpha-numeric code.

What is your alpha-numeric code?

Parent Alcohol Communication Survey

What is your relationship to the ASU student?

I am his/her _____

- ◯ Biological Mother
- ◯ Biological Father
- ◯ Adoptive Mother
- ◯ Adoptive Father
- ◯ Step-mother
- ◯ Step-father

Parent Alcohol Communication Survey

Instructions: This part of the survey will ask you about conversations or interactions you have had with your ASU student about college drinking and/or alcohol consumption. Please think about the conversations or interactions you have had with your child about alcohol SINCE SHE/HE GRADUATED FROM HIGH SCHOOL UNTIL NOW.

Since your child graduated from high school until now, have the two of you ever talked about drinking?

- ◯ Yes
- ◯ No
- ◯ Not sure

Parent Alcohol Communication Survey

On average, how often would you say that you and your child have talked about drinking since she/he graduated from high school until now?

- ◯ Daily
- ◯ Approximately Once a Week
- ◯ Approximately Once a Month
- ◯ Approximately Every Few Months
- ◯ Once a Year
- ◯ Less Than Once a Year

Parent Alcohol Communication Survey

Instructions for Parent: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, my child and I have talked about the dangers of drinking and driving.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that drinking will help him/her make friends.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that it was okay to drink as long as he/she did not get drunk.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have warned my child that too much partying could interfere with school.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that drinking alcohol would help him/her hook up ("hook up" is a phrase many young adults use to refer to sexual activity that may or may not include intercourse with someone they are not committed to romantically).	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have encouraged my child to use his/her own judgment when it comes to drinking alcohol.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how alcohol changes someone's personality.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, my child and I have talked about how to find fun things to do instead of drinking.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have threatened to discipline my child if she/he gets drunk.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how difficult it is to make accurate judgments of how drunk you are.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about the negative consequences of mixing alcohol and sex.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that I expect him/her to drink in college.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child to eat while he/she is drinking so that he/she doesn't get too drunk.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have offered my child rewards for not drinking.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, I have told my child to drink a lot of water while she/he is drinking.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that drinking alcohol makes it easier to talk to people.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about the importance of not being pressured by others into drinking.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have warned my child that getting drunk increases the chances that he/she might take advantage of someone sexually.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that she/he was not allowed to drink before turning 21.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that he/she was not allowed to drink period, regardless of how old he/she was.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about the importance of being able to improve his/her mood without the use of alcohol.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, I have talked to my child about the signs of alcohol poisoning.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child to always keep his/her eyes on his/her drink.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have warned my child that too much partying could hurt his/her grades.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about the ways that alcohol can impair his/her judgment.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that I expect him/her to experiment with alcohol.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have given my child suggestions on how to drink in moderation so that she/he doesn't get drunk.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about alternatives to falling asleep without drinking.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, I have told my child it was okay to drink at home under parental supervision.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have warned my child that drinking too much might cause him/her to do something he/she later regretted.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that drinking just to go along with the crowd is bad.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that drinking alcohol makes it easier to have fun.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how mixing alcohol with medications and other drugs can be dangerous.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how drinking does not really make someone more of an adult.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child to pace himself/herself when she/he is drinking.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, I have given my child advice on how to handle peer pressure to drink.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have warned my child that getting drunk increases the chances that she/he might be taken advantage of sexually.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how drinking could get him/her into trouble with the police.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about what the school's punishment would be if she/he were caught drinking.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about the risk of riding in a car with someone who has been drinking.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child to hang out with trusted friends when he/she is drinking.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how I would punish him/her if she/he was caught drinking.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, I have told my child that drinking alcohol is a good way to help him/her relieve stress.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how social drinking may lead to alcoholism.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child to come to talk to me if he/she thought she/he had a drinking problem.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child stories of my drinking days when I was in high school or college.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how being caught drinking might lead to him/her being suspended from school.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have talked to my child about the benefits of drinking.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, my child and I have talked about how alcohol works in the body.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how alcohol can create a false sense of power.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how drinking can make problems worse, not better.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how drinking is bad for health.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, this child and I have talked about how drinking can make someone physically sick.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about the effects of alcohol on making decisions.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, I have told my child not to go to parties where there was alcohol.	◯	◯	◯	◯	◯	◯	◯
If you are still paying attention, mark the number 2 as the answer to this question.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how being caught drinking might make his/her friends' parents prohibit my child's friends from hanging out with him/her.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how drinking could lead to serious drinking problems.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child to eat before she/he drinks so that she/he doesn't get too drunk.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have only hinted to my child that she/he should not drink.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how embarrassing it would be for the family if she/he were caught drinking.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: The next set of questions asks you about the content of the alcohol-related conversations/interactions that you have had with your child since she/he graduated from high school until now. Please read the following statements and indicate the extent to which you and your ASU student have discussed these topics.

	Not at All	2	3	4	5	6	Very Often
Since he/she graduated from high school, I have expressed a zero-tolerance rule for alcohol.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have given my child advice on what to say to someone who offers him/her a drink.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about how alcohol can get in the way of making true friends.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have offered my child gifts for not drinking.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that drinking alcohol will help him/her feel more comfortable in awkward situations.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child that she/he should party while in college.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, I have told my child it's okay to drink as long as it doesn't interfere with his/her school work.	◯	◯	◯	◯	◯	◯	◯
Since he/she graduated from high school, my child and I have talked about alternatives to drinking to celebrate special occasions.	◯	◯	◯	◯	◯	◯	◯

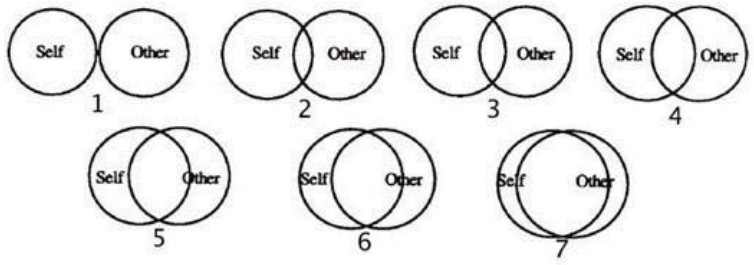
Parent Alcohol Communication Survey

Instructions: The next set of questions asks about the way you have communicated with your ASU student about alcohol since he/she graduated from high school until now. Please read the following statements and indicate the extent to which you agree or disagree.

	Strongly Disagree	2	3	4	5	6	Strongly Agree
Since my child graduated from high school, I have typically had unclear conversations about alcohol with him/her.	◯	◯	◯	◯	◯	◯	◯
Since my child graduated from high school, when I talk to him/her about alcohol, it is usually a one-way conversation with me lecturing him/her.	◯	◯	◯	◯	◯	◯	◯
Since my child graduated from high school, when I talk to him/her about alcohol, it is usually a two-way conversation where both of us participate in the conversation.	◯	◯	◯	◯	◯	◯	◯
Since my child graduated from high school, my discussions about drinking with him/her have been an ongoing occurrence.	◯	◯	◯	◯	◯	◯	◯
My child and I have had just one “big” conversation about alcohol since she/he graduated from high school.	◯	◯	◯	◯	◯	◯	◯
Since my child graduated from high school, I have generally been very open with him/her in our conversations about alcohol.	◯	◯	◯	◯	◯	◯	◯
Since my child graduated from high school, I typically have been very direct with him/her in our conversations about alcohol.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

Instructions: Below is a series of circles that represent the closeness you feel to your child. The more overlapped these circles are, the closer your relationship is.



Using the numbers below these diagrams, how close would you say your relationship with your child is?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7

Parent Alcohol Communication Survey

Are you:

- ◯ Female
- ◯ Male

Parent Alcohol Communication Survey

This next section of the survey asks questions about your alcohol use.

Think back over the last TWO WEEKS. How many times have you had FIVE OR MORE drinks* in a single sitting?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ None
- ◯ Once
- ◯ Twice
- ◯ 3 to 5 times
- ◯ 6 to 9 times
- ◯ 10 or more times

Parent Alcohol Communication Survey

This next section of the survey asks questions about your alcohol use.

Think back over the last TWO WEEKS. How many times have you had FOUR OR MORE drinks* in a single sitting?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ None
- ◯ Once
- ◯ Twice
- ◯ 3 to 5 times
- ◯ 6 to 9 times
- ◯ 10 or more times

Parent Alcohol Communication Survey

During the PAST 30 DAYS, on how many days have you consumed alcohol (beer, wine, liquor) in any amount?

- ◯ 0 days
- ◯ 1-2 days
- ◯ 3-5 days
- ◯ 6-9 days
- ◯ 10-19 days
- ◯ 20-29 days
- ◯ All 30 days

Parent Alcohol Communication Survey

What is the average number of drinks* you consume in a week?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ 0
- ◯ 1-2
- ◯ 3-4
- ◯ 5-6
- ◯ 7-8
- ◯ 9-10
- ◯ 11-12
- ◯ 13-14
- ◯ 15-16
- ◯ 17-18
- ◯ 19-20
- ◯ 21-22
- ◯ 23-24
- ◯ 25-26
- ◯ 27-28
- ◯ 29-30
- ◯ 31 or more

Parent Alcohol Communication Survey

How much do you weigh?

Please enter the number of pounds:

Parent Alcohol Communication Survey

The next set of questions asks you about your CHILD'S drinking. Please answer these questions TO THE BEST OF YOUR KNOWLEDGE.

Because the definition of "binge drinking" or "heavy episodic drinking" differs for male college students and female college students, it is first necessary to ask your child's gender.

My ASU student is _____

- ◯ Female
- ◯ Male

Parent Alcohol Communication Survey

Think back over the last TWO WEEKS. TO THE BEST OF YOUR KNOWLEDGE, how many times has your CHILD had FIVE OR MORE drinks* in a single sitting?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ None
- ◯ Once
- ◯ Twice
- ◯ 3 to 5 times
- ◯ 6 to 9 times
- ◯ 10 or more times
- ◯ I don't know

Parent Alcohol Communication Survey

Think back over the last TWO WEEKS. TO THE BEST OF YOUR KNOWLEDGE, how many times has your CHILD had FOUR OR MORE drinks* in a single sitting?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ None
- ◯ Once
- ◯ Twice
- ◯ 3 to 5 times
- ◯ 6 to 9 times
- ◯ 10 or more times
- ◯ I don't know

Parent Alcohol Communication Survey

During the PAST 30 DAYS, TO THE BEST OF YOUR KNOWLEDGE, on how many days did your CHILD consume alcohol (beer, wine, liquor) in any amount?

- ◯ 0 days
- ◯ 1-2 days
- ◯ 3-5 days
- ◯ 6-9 days
- ◯ 10-19 days
- ◯ 20-29 days
- ◯ All 30 days
- ◯ I don't know

Parent Alcohol Communication Survey

TO THE BEST OF YOUR KNOWLEDGE, what is the average number of drinks* your CHILD consumes in a week?

***A drink is 1 bottle of beer, 1 glass of wine, 1 wine cooler, 1 shot glass of liquor, or 1 mixed drink.**

- ◯ 0
- ◯ 1-2
- ◯ 3-4
- ◯ 5-6
- ◯ 7-8
- ◯ 9-10
- ◯ 11-12
- ◯ 13-14
- ◯ 15-16
- ◯ 17-18
- ◯ 19-20
- ◯ 21-22
- ◯ 23-24
- ◯ 25-26
- ◯ 27-28
- ◯ 29-30
- ◯ 31 or more
- ◯ I don't know

Parent Alcohol Communication Survey

Instructions: The next set of questions asks about the degree to which you approve of your child drinking alcohol. Please indicate the extent to which you agree or disagree with each statement.

	Strongly Disagree	2	3	4	5	6	Strongly Agree
I approve of my child drinking alcohol occasionally.	◯	◯	◯	◯	◯	◯	◯
I approve of my child drinking alcohol regularly.	◯	◯	◯	◯	◯	◯	◯
I approve of my child drinking alcohol heavily.	◯	◯	◯	◯	◯	◯	◯
I do not approve of my child drinking at all.	◯	◯	◯	◯	◯	◯	◯

Parent Alcohol Communication Survey

In the space below, please describe the ways— if any-- that you try to monitor your child's drinking. In other words, what do you do or say to try to find out if your child is consuming alcohol (or to find out the degree to which she/he might be consuming alcohol)? Please be as detailed and specific as you can.

Parent Alcohol Communication Survey

You have almost completed the survey. The last few items are demographic questions that will help us describe the participants.

How old are you?

Years old:

How would you describe your ethnic background? Please check all that apply.

- [ ] White or European American
- [ ] Black or African American
- [ ] Hispanic or Latino
- [ ] Asian
- [ ] Native Hawaiian/Pacific Islander
- [ ] American Indian/Alaska Native
- [ ] Other

Parent Alcohol Communication Survey

Thank you very much for participating in this study. If you are interested in obtaining information regarding the general, overall findings, please feel free to contact Lisa Menegatos over the summer when the study is complete. She can be contacted at Lisa.Menegatos@asu.edu.

APPENDIX C

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Author (if applicable): Lisa Menegatos
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