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DO HIGH SCHOOL PEER CROWD AFFILIATION
AND PEER ALCOHOL USE PREDICT
ALCOHOL USE DURING COLLEGE?

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
College of Arts & Sciences
at the University of Kentucky

By

Jacqueline Adobia Bonsu

Lexington, Kentucky

Director: Dr. Richard Milich, Provost's Distinguished Service Professor of Psychology

Lexington, Kentucky

2012

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ABSTRACT OF THESIS

DO HIGH SCHOOL PEER CROWD AFFILIATION AND PEER ALCOHOL USE PREDICT ALCOHOL USE DURING COLLEGE?

Peer crowd affiliation (PCA) has been linked to alcohol use in adolescents, with patterns varying by crowd. However, a comprehensive examination of how peers influence college students' behaviors, especially with regards to PCA, is lacking. The current study seeks to replicate and extend findings from Barber, Eccles, and Stone (2001) by examining whether high school PCA is associated with average weekly drinking and problematic drinking in a sample of college freshman, including friends' drinking as a potential mediator and susceptibility to peer influence as a potential moderator. As existing research has found that close friends' drinking predicts own drinking, peer influence may be the mechanism by which PCA is associated with alcohol use and problems in college. College students ($N = 490$) completed questionnaires assessing high school PCA, problematic drinking, and alcohol use habits among 3 close college friends, as well as a life history calendar of alcohol use. Hypotheses were tested using Preacher & Hayes bootstrapping mediation approach and Structural Equation Modeling (SEM). Results indicated positive associations between affiliation with Popular or Jock crowds and weekly and problematic drinking in college, and negative associations for affiliation with the Brain crowd. Support for mediation by friends' alcohol use was found.

KEYWORDS: Peer Crowd Affiliation, Peer Influence, College Drinking, Problematic Drinking, Mediation

Jacqueline Adobia Bonsu

October 4, 2012

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Chapter One: Introduction

Adolescence is a critical period for the development of personality, identity, and many learned social behaviors. Although many factors likely influence adolescent development, research has consistently shown that peers play an important role. Peers contribute to developing and maintaining positive self-esteem and identity, and provide a sense of acceptance and group belonging that is important to upholding a positive self-concept (Brown & Lohr, 1987). The peer context also provides opportunities for adolescents to engage in social interactions, which are important in developing social competence. Consistent with social comparison theory, peers serve as a reference by which adolescents may self-assess their competence in various realms, such as academic competence, social competence, and popularity. Prinstein, Boergers, and Spirito (2001) reported that peer status, acceptance, and rejection have been linked to prevalence of conduct disordered behaviors, depression, substance use, and suicidality in adolescents. Peers also influence the extent to which adolescent engage in health-risk behaviors like alcohol use. Considering the pervasive effects of alcohol use, it is important to consider the mechanisms by which this behavior may be learned, such as influence from close friends and peer crowds. Overall, it is clear that peers influence adolescents' development in various ways that have long-term implications.

Peer Influence

The peer relations literature commonly examines the influence that friends may have on an adolescent's behavior and psychopathology. It is often reported that friends tend to be similar in various characteristics, such as attitudes and behaviors (e.g., Jaccard, Blanton, & Dodge, 2005; Sieving, Perry, & Williams, 1999; Simons-Morton & Chen,

2006). Moreover, studies have found that friends do, in fact, influence behavior, in that friends' behavior systematically predicts changes in the adolescent's own behavior (Corbin, Iwamoto, & Fromme, 2011; Hussong, 2002; LaBrie, Hummer, Neighbors, & Larimer, 2010). As such, there is a large body of research on the processes that contribute to these observed influences, such as peer socialization. Whereas selection effects, when individuals seek out others who are the same on valued constructs, occur prior to the formation of a relationship, socialization occurs after. In this respect, friends may or may not be similar at the beginning of the relationship, but time and exposure to each other causes changes in beliefs such that they become more similar (Kandel, 1978). For example, an individual who strongly approves of substance use may not seek out other like-minded peers to form friendships with, but once formed, s/he may influence other peers to think more like himself/herself or they may influence him to change his/her ideals. Over time, the friends within the peer group become more similar whether or not they started out that way.

The peer context has emerged as a salient predictor of adolescent substance use, and one of the best predictors of binge drinking (Hussong, 2002). Several theories provide explanations for how this association operates. According to social norms theory, what behaviors, beliefs, and attitudes individuals perceive to be typical for their peer group, also known as perceived norms, greatly influence behavior (Berkowitz, 2004). Individuals then begin behaving in manners that are consistent with the perceived group norm. These perceptions tend to involve overestimations of what actually occurs in the group, but they are among the most salient predictors of substance use behavior (e.g., Borsari & Carey, 2003; Neighbors, Lee, Lewis, Fossos, & Larimer, 2007; Perkins, 2002).

LaBrie and colleagues (2010) found that perceived norms for close friends more strongly predicted alcohol-related consequences than distal reference groups.

Research and theories have also indicated that peers influence behavior because friends serve as a source of modeling and encouragement of what constitutes appropriate behaviors. Social learning theory, one of the main theories cited to explain the development of health-risk behaviors, states that individuals develop deviant behaviors (e.g., drinking alcohol) through the observational learning processes of modeling and imitation of the behaviors of role models, such as close peers, and from presumptions about their environment (Coggans & McKellar, 1994; D'Amico & McCarthy, 2006; LaBrie, Huchting, Pedersen, & Hummer, 2007; Landrine, Richardson, Klonoff, & Flay, 1994; Mercken, Candel, Willems, & de Vries, 2009; Prinstein, Boergers, & Spirito, 2001). This suggests that adolescents may begin drinking alcohol because they see others doing it or because they make assumptions about the effects of engaging in a behavior based on someone else's participation in it. Research seems to support this theory since adolescent substance use is highly correlated with peer substance use (e.g., Jaccard, Blanton, & Dodge, 2005; Kandel, 1978; Sieving, Perry, & Williams, 1999). Urberg, Degirmencioglu, and Pilgrim (1997) reported that being part of a group that drank alcohol and having a close friend who did so predicted escalating from experimental or occasional use to drinking to intoxication. Research on peer influence in adolescents and related explanatory theories has reliably found that close friends' drinking levels predict one's own drinking (Corbin, Iwamoto, & Fromme, 2011; Hussong, 2002; LaBrie, Hummer, Neighbors, & Larimer (2010).

Peer Crowd Affiliation

A particularly interesting source of peer influence is from one's peer crowd affiliation (PCA). PCA is a reputation-based group of individuals who are similar with respect to behaviors, values, and attitudes. Though close friends do tend to be affiliated with the same crowd, these crowds are not interaction-based like peer cliques and may be comprised of individuals who do not even know each other. The most frequently and consistently identified groups in the literature include: Jocks (i.e., have a reputation of being athletic or of being on a school team), Burnouts (i.e., have a reputation of skipping school or getting into trouble), Populars (i.e., have a reputation of being very social and concerned about their image), Brains (i.e., have a reputation of doing very well in school or enjoying academics), Alternatives (i.e., have a reputation of rebelling against the norm or attempting not to conform to social ideals), and Loners (i.e., keep to themselves and do not belong) (La Greca, Prinstein, & Fetter, 2001; Prinstein & La Greca, 2002).

Peer crowds are an important potential source of influence to consider because adolescents consider the peer crowd with whom they affiliate to be a template of beliefs and values, and also define themselves through their identification with such groups (Prinstein & La Greca, 2002). Brown and Lohr (1987) determined that position of the peer crowd within the social status hierarchy contributed to self-esteem, social comparisons, and symbolic appraisals. Sussman and colleagues (2007) reported similar trends, that the social hierarchy of crowds was associated with self-esteem, social acceptance, and social involvement. Associations have been found between affiliating with peer crowds and psychological outcomes, such as aggression, anxiety, delinquency, and depression (Cross & Fletcher, 2009), and internalizing distress and self-concept

(Prinstein & La Greca, 2002).

Peer crowd affiliation has been linked to engaging in various health-risk behaviors. These patterns of behavior tend to vary by crowd, such that deviant crowds are more likely to engage in substance use whereas academically oriented crowds are least likely to do so (Cross & Fletcher, 2009; La Greca et al., 2001; Sussman, Pokhrel, Ashmore, & Brown, 2007). However, this field has yet to comprehensively examine peer influence properties in college students' health risk behaviors, especially with regards to PCA. A notable study that did examine PCA in young adults, by Barber, Eccles, and Stone (2001), did, in fact, find that PCA significantly predicted substance use, psychological adjustment, and occupational outcomes in adulthood. Nevertheless, this area of peer relations remains relatively understudied in a college population.

College Alcohol Use

Alcohol use is an especially problematic behavior in college, and important to study, because it is related to a host of negative outcomes (e.g., risky/unsafe sex, legal trouble, deteriorating school performance, alcohol-related car accidents, injuries, and deaths; Dawson, Grant, Stinson, & Chou 2004). Studies of alcohol use trajectories have repeatedly identified that the highest levels of drinking occur during this time period compared to other periods across the lifespan (Jackson, Sher, & Park, 2005; Maggs & Schulenberg, 2004). Relatedly, studies have also identified college years as the period with the highest prevalence of alcohol use disorders (Corbin, Iwamoto, & Fromme, 2011; Jackson et al., 2005). In these studies, 31% of college students received a diagnosis of past-year alcohol abuse, 6% received a diagnosis of past-year alcohol dependence, and greater than 40% endorsed at least one symptom of abuse or dependence based upon

DSM-IV criteria. Thus, it appears that the college environment may encourage and exacerbate alcohol use as well as contribute to long-term consequences of such use. Because many college students have limited adult supervision of their behavior in comparison to when they lived at home and during adolescence, this may foster a sense of freedom to experiment with substances. Access to alcohol and other substances is often readily available, and individuals can consume them relatively freely and privately in their dorms or off-campus residences. Furthermore, college provides plenty of opportunities to engage in excessive alcohol use. Such behavior may be considered standard or normative practice in social situations, especially in the permissive social environment of college (Fromme, Corbin, & Kruse, 2008).

Paths to Increased Alcohol Use

Due to the social nature of drinking alcohol, it is very important to consider the role that peers might have in the initiation, escalation, and maintenance of this behavior. Consequently, numerous studies have been conducted and have revealed the pervasive effects of friends' drinking behavior on adolescents' own drinking behavior. This suggests that, when considering a peer context variable such as PCA, friends' behavior may explain the observed association with alcohol use. However, Urberg, Luo, Pilgrim, and Degirmencioglu (2003) noted that there are significant differences in the extent to which one may be influenced by peers' behavior. This characteristic can make individuals more or less likely to change their own behavior to match their peers'. For example, when a close friend engages in high levels of alcohol use, an individual who is highly susceptible to influence is likely to increase alcohol usage. One's susceptibility to influence may be due to individual characteristics, characteristics of the influencer (i.e.,

friend), the nature and salience of the relationship, and/or the type of behavior under consideration (Brechwald & Prinstein, 2011; Urberg, Luo, Pilgrim, and Degirmencioglu, 2003). As a result, there are some cases where, even when having a friend that engages in high levels of alcohol use, some individuals do not alter their own behaviors due to low susceptibility to be influenced.

Current Study

The current study proposes a moderated-mediation model with three hypotheses (Figure 1.1). First, the current study seeks to replicate findings from Barber et al. (2001). That is, we wish to examine if high school peer crowd affiliation (PCA) is associated with alcohol use in a sample of college freshman. Specifically, we predict that affiliation with Burnouts, Populars, Jocks, and Alternatives will predict higher rates of alcohol use while Loner and Brain crowds will predict low levels of alcohol use. Second, the current study will expand on Barber et al.'s work by including other peer-related variables. Specifically, given the aforementioned relationship, this study proposes that friends' alcohol use will operate as a mediator between PCA and participant's alcohol use. The consensus of research on the effects of peers finds that peers' behaviors influence one's own behavior, namely that close friends' drinking levels will predict one's own drinking levels. It would follow, therefore, that this peer influence may be the mechanism by which peer crowd affiliation predicts one's own alcohol use in college. An important contribution of the present study involves using a continuous measure of PCA. This is important as it allows for the overlap in affiliation that is more consistent with how crowds appear in high school (e.g., affiliating with both populars and jocks to varying extents). Finally, the current study will investigate if susceptibility to peer influence is a

moderator of the relationship between friends' alcohol use and one's own alcohol use.

This hypothesis posits that the mediation will only occur for some individuals and not others, namely those high in susceptibility to peer influence in comparison to those low.

Studies suggest that there are individual differences in the extent to which an individual is susceptible to peer influence. This characteristic may potentially reduce or nullify the proposed relationships.

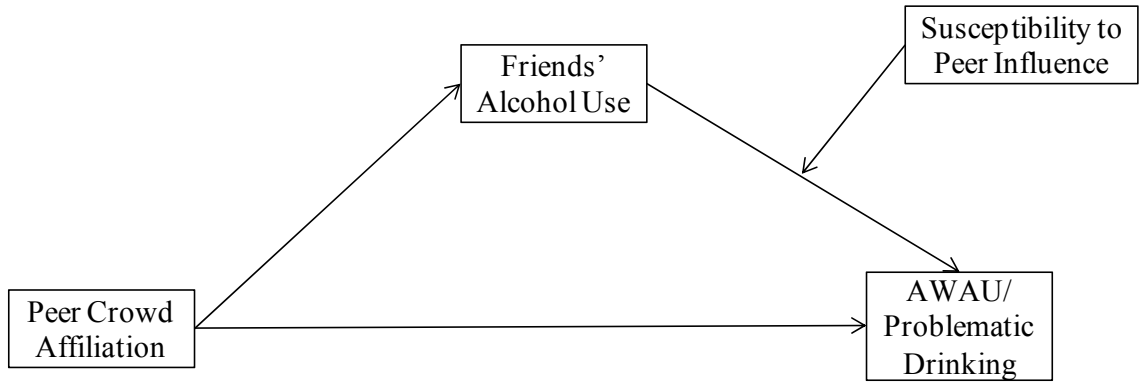


Figure 1.1 Proposed moderated-mediation model.

Chapter Two: Methods

Participants

The participants of this study include 526 college students (47.9 % male) from a public university in the southern United States. The ethnic distribution of the sample included 427 (81.2%) Caucasian, 65 (12.4%) African-American, 13 (2.5%) Asian-American, 8 (1.5%) Hispanic-American, and 13 (2.5%) “Other” students. Participants were recruited in two cohorts, one year apart, from the undergraduate research pool.

Measures

Peer Crowd Affiliation Scale. Peer Crowd Affiliation (PCA) was determined by having the participants recall the crowds that may have existed in their high school environment and indicate the extent to which they identified with each of 6 peer groups [i.e., jocks, populars, brains, burnouts, loners, and alternatives; was there a group of teens in your school with the reputation of being athletic or of being on a school team (“Jocks”)? Y/N. If yes, to what degree did you identify as a Jock? 0 = not at all, 10 = very much]. Where a crowd was reported as absent, participants’ affiliation was imputed as 0 since one cannot affiliate with a crowd if it does not exist in his/her environment.

Friend Drug Scale. This 63-item measure was developed specifically for this project in order to assess peer drug use. Participants were asked to nominate their three closest friends and report on their perceptions of each friend’s use and beliefs regarding various substances (e.g., alcohol, marijuana, cigarettes). Participants also reported the nature, importance, and duration of the relationship, as well as how much time he/she spends with each friend per week. This study will focus on perceived friends’ average alcohol use as reported for the item “On average, how often does he/she drink?” with

response options of “1=Less than once a month, 2=About once or twice a month, never in large amounts, 3=About once or twice a month, sometimes in large amounts, 4=About once or twice a week, never in large amounts, 5=About once or twice a week, always in large amounts, 6=Almost every day, never in large amounts, 7=Almost every day, sometimes in large amounts.” Responses were averaged across the three friends and standardized, providing a single scale score.

Susceptibility to Peer Influence. A measure of participants’ susceptibility to peer influence was calculated by reverse-scoring responses on the Resistance to Peer Influence scale (RPI; Steinberg & Monahan, 2007). Participants were asked to respond to a series of 10 statements by rating the extent to which the descriptor is characteristic of themselves on a 4-point scale, ranging from “really true of me” to “really not true of me” (e.g., Some people go along with their friends just to keep their friends happy, 1=Really True of Me, 2=Sort of True of Me, 3=Sort of Not True of Me, and 4=Really Not True of Me). Responses were averaged to obtain a single scale score and standardized. Studies of the measure’s internal consistency produced Cronbach’s alphas ranging from .70-.76 (Steinberg & Monahan, 2007).

Life History Calendar. The participant’s alcohol use was assessed using selected items from the Life History Calendar (LHC; Caspi et al., 1996). This measure has been validated and proven reliable as a method of obtaining retrospective data; as such, it is commonly used in studies to evaluate health-risk behaviors among adolescents. Tests of reliability and validity for this measure have demonstrated good agreement between the measure and other reports of substance use, with average kappas of 0.46-0.56 and average correlation of 0.53-0.64 (Miller, Flory, Lynam, & Leukefeld, 2003). In the

current study, participants filled out the LHC on the computer with the assistance of a trained experimenter, reporting on four month periods, dating back to fall of 7th grade, during the first wave of data collection and one-month periods, dating back to the month of participant's first collection, during the second wave of data collection. Data was collected regarding living arrangements for each period, use, frequency, average and highest amount for tobacco, alcohol, marijuana, cocaine, inhalants, amphetamines, acid/LSD, ecstasy/MDMA and club drugs.

For the purposes of this study, average weekly alcohol use (AWAU) will be estimated using the LHC items "Which of the following best describes how frequently you used alcohol during each of the months you drank?" (i.e. 1 = once a month or less, 2 = once a week, 3 = 2 or 3 times a week, 4 = 4 or 5 times a week, 5 = every day) and "Which of the following describes, on average, how much alcohol you used during the months that you drank?" (i.e. 1=one drink, 2=two drinks, 3=three drinks, 4=four drinks, 5=five drinks, 6=six to ten drinks, 7=ten or more drinks). Furthermore, to control for prior drinking, AWAU for the year prior to college will be entered into a regression predicting AWAU for the first year of college; the saved standardized residuals from this regression will serve as the final AWAU outcome variable.

AUDIT. The Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993) is a 10-item screening measure assessing hazardous and harmful alcohol use with adequate reliability (Cronbach's $\alpha=.80$) and sensitivity (.84) (Fleming, Barry, & MacDonald, 1991). The instrument asks about the participant's alcohol use, how much and often he/she drinks, drinking behavior, and how he/she feels about his/her drinking. Each question is scored from 0 - 4, with the

possible scores ranging from 0 - 40.

Screening Procedure

Students in introductory psychology courses were administered a screening questionnaire during a mass screening, which took place in each of the introductory psychology classes during the first two weeks of the semester. The screening measure was used in order to enhance the sample and consisted of 22 items, on which participants were asked to indicate their agreement using a dichotomous rating form (“yes” or “no”). Twelve of the items assessed antisocial or delinquent behaviors, such as skipping school, stealing, lying and participating in physical fights. Seven of the items assessed positive or neutral behaviors, such as volunteering, babysitting and traveling to another country.

Additionally, participants were asked to indicate their gender, race and home state and county. A composite score based on responses to the twelve delinquent items was used to determine the distribution of scores and the males and females whose scores fell within the top 25% for their gender were invited to participate through an email invitation.

Procedure

Participants completed 2.5 hour data collection sessions individually, conducted by a trained research assistant. Prior to beginning the session, participants read and signed consent forms, asking any questions they had, and completed a saliva drug screen and field sobriety test to ensure that they were not under the influence of any substances at the time of the experiment. If the participant tested positive for any drugs (i.e., alcohol, THC, cocaine, opiates, methamphetamine, and benzodiazepines), he/she was asked to reschedule. Next, participants completed a series of alternating questionnaires, behavioral tasks, and structured interviews assessing substance on the computer. Participants took a

five-minute break halfway through the session. Participants were debriefed at the end of the session regarding the purposes of the study, and compensated with three or four hours of research credit for their psychology class and \$30.

As this study is part of a larger project, several of the administered measures are omitted below as they are not relevant to the current research questions but are available by request. The project has been approved by the Institutional Review Board (IRB) of the University of Kentucky.

Data Analysis

A small portion of subjects (n=9) was missing data for the outcome variables at random so they were excluded casewise. A larger portion (n=26-74) was missing data for the predictors, proposed mediator, and/or proposed moderator variables; values were imputed using the SPSS multiple imputation function to achieve a full sample of 510.

Outliers in the data were determined by examining the frequency distribution of z scores and plotting the studentized deleted residuals against subject number, and removing discrepant cases. This resulted in a final sample of 490 participants. Examining plots to assess normality of residuals and heteroscedasticity revealed no concerns; tolerance values indicated that multicollinearity is not a concern.

SPSS statistical software was used to perform descriptive and correlational analyses. Each mediation was tested using the Preacher and Hayes (2004) bootstrapping method examining the product of the pathway coefficients. As the distributions of products of coefficients are generally skewed, bootstrapping (1,000 bootstrap resamples) allows for accurate estimation of indirect effects, standard errors, and confidence intervals. The tested indirect effect is considered to be significant when the 95%

confidence interval does not include zero (Preacher & Hayes, 2004).

The moderated-mediation model for each outcome variable was tested with structural equation modeling (SEM) using AMOS 20 (Arbuckle, 2011) statistical software. All of the crowds were entered simultaneously as observed predictors of the observed alcohol outcome variable, directly and indirectly through friends' alcohol use, also an observed variable. Moderation of this pathway was assessed by including the susceptibility to peer influence as a standardized observed variable and the interaction of this term and friends' alcohol use. Four fit indices were used to assess model fit: the root mean square error of approximation (RMSEA), the relative chi-square (CMIN/df), the Comparative Fit Index (CFI), and the normed fit index (NFI). These indices have varying guidelines for what constitutes good fit. Hu and Bentler (1999) recommend RMSEA values of .06 or lower to indicate a close fit, and CFI and NFI values of .90 or .95 to represent a good fit. If the model fits well across most of these indices, it is considered to be a good fit for the data.

Chapter Three: Results

Descriptive Statistics

Descriptive statistics, including correlations, means, and standard deviations, for the variables in the model are presented in Table 3.1. There was a moderate positive correlation between Jock and Popular crowd identification ($r=.432, p<.001$) and a small positive correlation between Jock and Brain crowd identification ($r=.163, p=.001$). However, identifying with the Brain crowd was not correlated at all with identifying with the Popular crowd ($r=.007$). Susceptibility to peer influence had small positive correlations with friends' alcohol use ($r=.118, p<.01$), Jock crowd identification ($r=.129, p<.01$), and Popular crowd identification ($r=.129, p<.01$). However, identifying with the Brain crowd was not correlated at all with being any more or less susceptible to peer influence ($r=.019$).

Prediction of Average Weekly Alcohol Use and Problematic Drinking from Peer Crowd Affiliation (PCA).

First, six separate regression models were tested predicting AWAU and problematic drinking using each crowd (Table 3.2). Affiliations with the Jock and Popular crowds were significant and positive predictors of average weekly alcohol use during the first year of college, $b=.19, t(488)=4.30, p < .001$, and $b=.16, t(488)=3.62, p < .001$, respectively. Jock crowd affiliation explained 3.7% of the variance in AWAU, $F(1, 488) = 18.50, p < .001$, while Popular crowd affiliation explained 2.6%, $F(1, 488) = 13.01, p < .001$. In contrast, affiliation with the Brain crowd was significantly and negatively associated with average weekly alcohol use, $b=-.12, t(488)=-2.56, p<.05$, and explained 1.3% of the variance in AWAU, $F(1, 488) = 6.55, p < .05$.

A similar pattern emerged with respect to first year problematic drinking. Affiliations with the Jock and Popular crowds were significant and positive predictors of problematic drinking, $b=.23$, $t(488)=5.27$, $p < .001$, and $b=.25$, $t(488)=5.73$, $p < .001$, respectively. Jock crowd affiliation explained 5.4% of the variance in AUDIT scores, $F(1, 488) = 27.72$, $p < .001$, while Popular crowd affiliation explained 6.3%, $F(1, 488) = 32.87$, $p < .001$. In contrast, affiliation with the Brain crowd was significantly and negatively associated with first year problematic drinking, $b=-.29$, $t(488)=-6.66$, $p < .001$, and explained 8.3% of the variance in AUDIT scores, $F(1, 488) = 44.38$, $p < .001$.

Indirect Effect of Friends' Alcohol Use on Average Weekly Alcohol Use and Problematic Drinking.

Mediation models were then tested to examine the indirect effect of friends' alcohol use when predicting average weekly alcohol use and problematic drinking during freshman year from high school peer crowd affiliation (Figures 3.1, 3.2, and 3.3; Table 3.3). Confidence intervals around the tested indirect effects did not include zero, therefore indicating that friends' alcohol use was indeed a mechanism by which affiliation with each peer crowd predicts levels of weekly alcohol use, as well as problematic drinking. Specifically, high affiliation with the Jock and Popular crowds was associated with reporting higher frequency and amount of alcohol use among close friends, which in turn was associated with higher levels of weekly alcohol use and problematic drinking. Again, the opposite relation was observed for affiliation with the Brain crowd. Higher affiliation with this crowd was associated with reporting lower frequency and amount of alcohol use among close friends, which in turn was associated with lower levels of weekly alcohol use and problematic drinking.

Including friends' alcohol use in these models considerably increased the amount of variance accounted for in predicting average weekly alcohol use and problematic drinking than when using peer crowds alone. The mediation model for Jock crowd affiliation accounted for 8.6%, $F(1, 487) = 24.21, p < .001$, and 30.4%, $F(1, 487) = 107.55, p < .001$, of the variance in AWAU and problematic drinking, respectively. The mediation model for Popular crowd affiliation accounted for 8.3%, $F(1, 487) = 23.22, p < .001$, and 31.7%, $F(1, 487) = 114.51, p < .001$, of the variance in AWAU and problematic drinking, respectively. The mediation model for Brain crowd affiliation accounted for 7.5%, $F(1, 487) = 20.85, p < .001$, and 33.2%, $F(1, 487) = 122.41, p < .001$, of the variance in AWAU and problematic drinking, respectively. Furthermore, this combination of predictors accounted for substantially more variance in prediction of problematic drinking in comparison to average weekly alcohol use.

Moderation of Indirect Effect by Susceptibility to Peer Influence.

Moderated-mediation models, whereby susceptibility to peer influence moderated the pathway from friends' alcohol use to AWAU and problematic drinking, was tested by fitting a combined model in SEM (Figure 3.4). The models had good overall model fit across indices: The final model had good overall model fit across indices: RMSEA = .046 (90% CI: .000, .083), CMIN = 12.243, df = 6, CMIN/df = 2.040, CFI = .974, NFI = .953 for AWAU, and RMSEA = .049 (90% CI: .011, .084), CMIN = 13.429, df = 6, CMIN/df = 2.238, CFI = .982, NFI = .969 for problematic drinking. However, evidence of moderation was not found.

Table 3.1. Correlations, means, and standard deviations

	1	2	3	4	5	6	7	Mean	SD
1. Jock crowd affiliation	1							4.39	3.23
2. Brain crowd affiliation	.16***	1						4.93	2.68
3. Popular crowd affiliation	.43***	.01	1					5.06	2.96
4. Friends' alcohol use	.25***	-.18***	.19***	1				0.00	1.00
5. Susceptibility to peer influence	.13**	.02	.13**	.12**	1			0.00	1.00
6. Average weekly alcohol use	.19***	-.12*	.16***	.27***	.11*	1		0.00	1.00
7. AUDIT	.23***	-.29***	.25***	.55***	.19***	.42***	1	7.20	5.77

Note. N=490. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3.2. Summary of Regression Analyses for Predicting Freshman Year Alcohol Use

	B (se B)	β	R ²
Jock crowd affiliation			
Jock crowd → average weekly alcohol use	.050 (.012)	.191***	.037
Jock crowd → problematic drinking	.414 (.079)	.232***	.054
Brain crowd affiliation			
Brain crowd → average weekly alcohol use	-.036 (.014)	-.115*	.013
Brain crowd → problematic drinking	-.621 (.093)	-.289***	.083
Popular crowd affiliation			
Popular crowd → average weekly alcohol use	.046 (.013)	.162***	.026
Popular crowd → problematic drinking	.489 (.085)	.251***	.063

Note. N=490. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3.3. Summary of Analyses of Indirect Effect of Friends' Alcohol Use in Predicting Freshman Year Alcohol Use

	AWAU	Problematic Drinking
Jock crowd affiliation	.009 - .025***	.154 - .319***
Brain crowd affiliation	-.025 - -.007***	-.296 - -.090***
Popular crowd affiliation	.007 - .022***	.101 - .278***

Note. N=490. * $p < .05$. ** $p < .01$. *** $p < .001$.

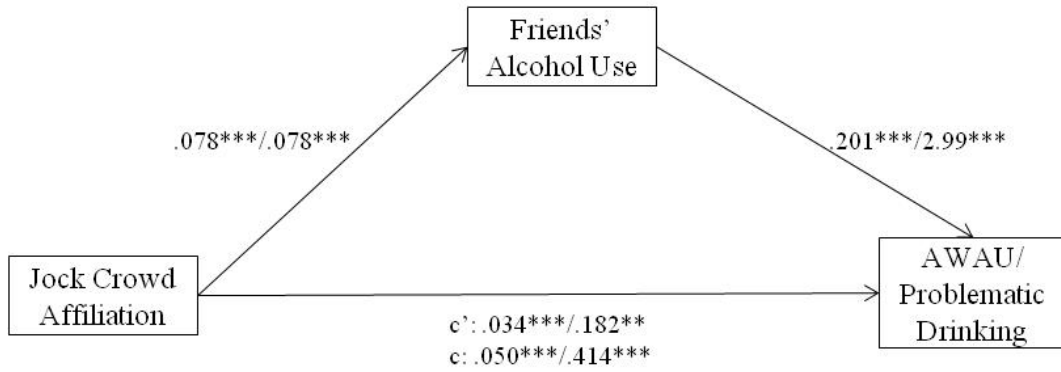


Figure 3.1. Jock crowd mediation model. Two variations of this model were tested to examine the associations among Jock crowd affiliation and both alcohol use outcomes, AWAU and problematic drinking. * $p < .05$. ** $p < .01$. *** $p < .001$.

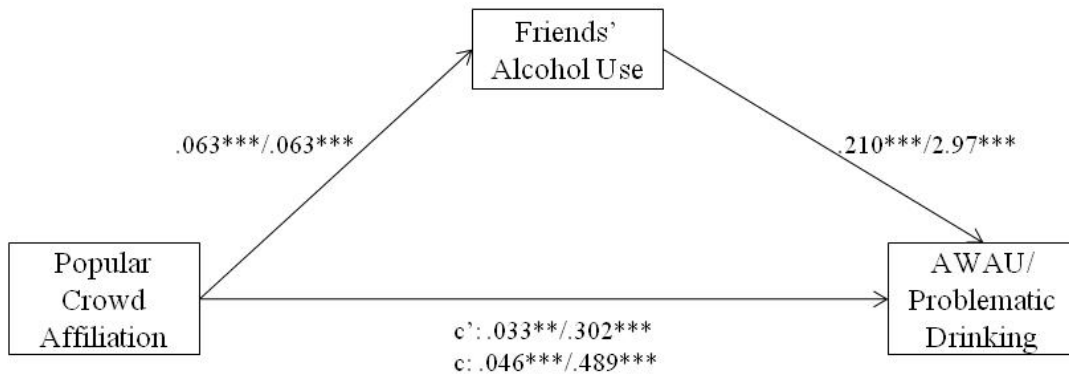


Figure 3.2. Popular crowd mediation model. Two variations of this model were tested to examine the associations among Popular crowd affiliation and both alcohol use outcomes, AWAU and problematic drinking. * $p < .05$. ** $p < .01$. *** $p < .001$.

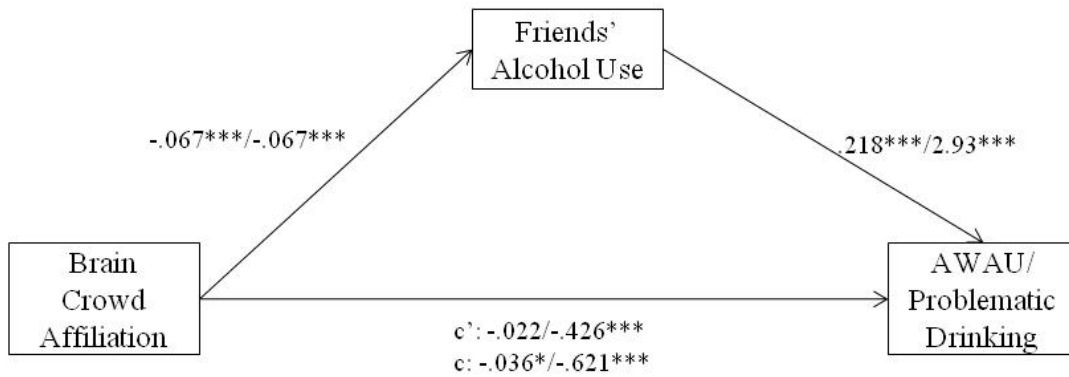


Figure 3.3. Brain crowd mediation model. Two variations of this model were tested to examine the associations among Brain crowd affiliation and both alcohol use outcomes, AWAU and problematic drinking. * $p < .05$. ** $p < .01$. *** $p < .001$.

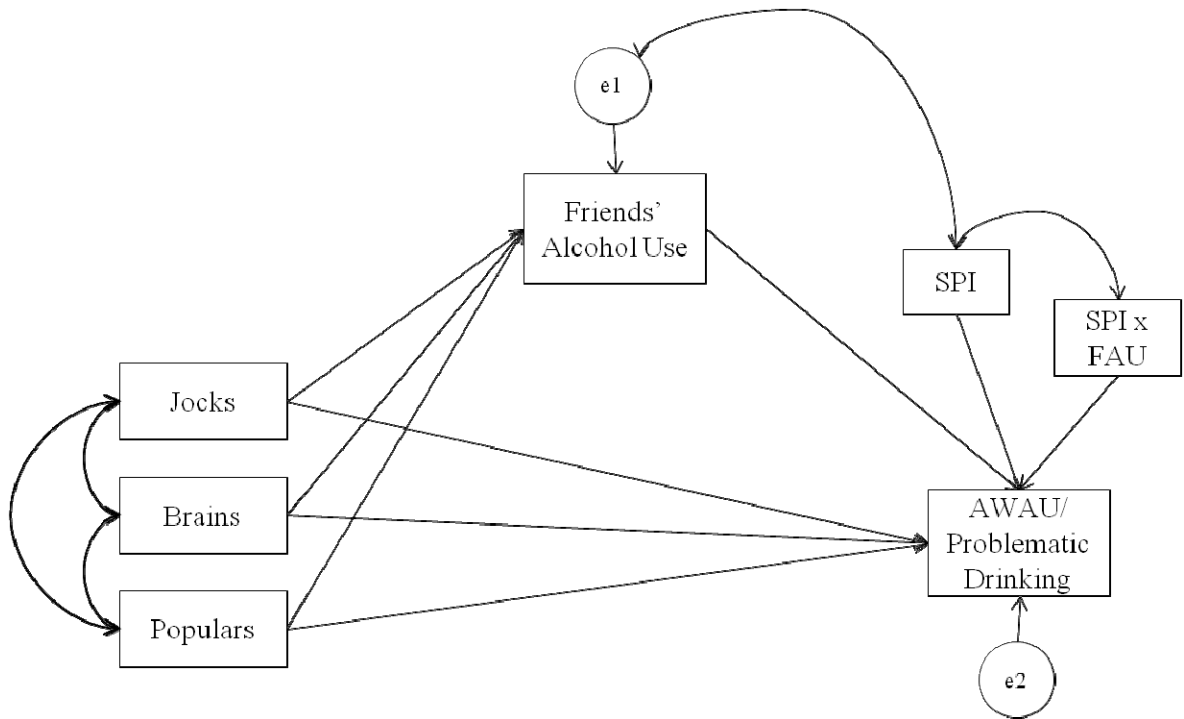


Figure 3.4. SEM moderated-mediation model. Two variations of this model were tested to examine the associations for both alcohol use outcomes, AWAU and problematic drinking.

Chapter Four: Discussion

The purpose of this study was to examine the associations among high school peer crowd affiliation and weekly and problematic alcohol use during the first year of college. The peer relations literature has linked variables such as peer crowd affiliation to participation in health-risk behaviors, such as alcohol use, in adolescents. However, the long term implications of early peer factors have not been thoroughly researched. Specifically, the field has yet to comprehensively study the role of peer influence and social identity, current and longstanding, in college students' drinking. The college years are a particularly dangerous time period, one with the highest levels of alcohol consumption and problems, due in part to increased access, frequency, and opportunities for drinking. Considering the short- and long-term consequences associated with alcohol use, it is necessary for us to understand what contributes to heightened risk and escalation during this transition. This study sought to address this important gap by examining how early peer crowd affiliation, in conjunction with college peer descriptive drinking norms, influences drinking during the freshman year of college.

As hypothesized, we found significant association among the three studied peer crowds, friends' alcohol use, and college drinking. Affiliation with the Jock, Popular, and Brain crowds differentially predicted reported levels of average weekly alcohol use, and more strongly predicted likelihood of reporting problematic drinking. Namely, individuals who reported higher affiliation with Jock and Popular crowds were more likely also to report consuming more alcohol on a weekly basis and drinking at problematic levels. Conversely, individuals who reported higher affiliation with the Brain crowd were more likely to report lower weekly alcohol consumption and less problematic

drinking. These findings are consistent with those found in the 2001 study by Barber, Eccles, and Stone wherein PCA significantly predicted substance use and psychological adjustment in adulthood.

Additionally, this study determined that close friends' drinking behavior is one mechanism by which this association may operate. Individuals who identify strongly as Jocks or Populars are more likely to report having close friends who drink more heavily and frequently and, in turn, report higher levels of weekly and problematic drinking. Individuals who identify strongly as Brains are more likely to report that their close friends drink in lower quantities and frequencies and, in turn, report lower levels of weekly and problematic drinking.

Comparing the findings in predicting AWAU and problematic drinking, we saw that peer crowd affiliation and descriptive norms accounted for considerably more variance in the latter outcome. Considering how prevalent and seemingly normative drinking is during college, it is likely that freshman will partake in this behavior in low, unproblematic levels regardless of high school PCA. However, PCA becomes important in distinguishing which college students drink to a more extreme, problematic degree.

When considering the different patterns for Jocks, Populars, and Brains, it is important to bear in mind that each crowd has different set of values, behaviors, and outcomes that are deemed important and characterize that crowd's reputation, and may also be shared among close friends. Alcohol use, especially at problematic levels, may impede behaviors and activities that contribute to maintaining a strong Brain identity, such as studying, participating in school clubs, or focusing on intellectual pursuits. It is possible that Brain crowd affiliation could serve as a protective factor with these

individuals also being less likely to drink and less likely to have friends who do so. From the perspective of social context, Brains aren't exposed to high alcohol use in people they consider close and may not find themselves in environments where alcohol is accessible or normatively consumed. Whereas, having friends who drink alcohol more frequently would place Jocks and Populars in more contexts that condone and/or facilitate alcohol use. These individuals may select into friend groups that have similar alcohol use patterns as themselves, be it frequent or infrequent drinkers, or they may be socialized by their peers once in a group, to drink in higher or lower amounts.. It may also be the case that there is overlap among Jocks, Populars, and membership in Greek Letter Organizations where drinking is a large part of socializing. Studies by Park and colleagues (2009a, 2009b) have found strong associations between Greek affiliation and drinking norms and behaviors during early college years. As few Jocks go on to play sports at collegiate level, perhaps alcohol use is a shared behavior that becomes more important or easy to engage in to maintain such an identity.

Unfortunately, moderation of the observed mediation pathways was not supported. Although, it was found that individuals who are more susceptible to peer influence also report higher levels of weekly and problematic drinking, and drinking among close friends, we cannot conclude that the mechanism by which affiliation with Jocks, Populars, or Brains predicts levels of weekly and problematic drinking in college is stronger or only operates for more susceptible individuals. It may be the case that susceptibility to peer influence is more relevant at a different pathway in the model, such as the association between PCA and friends' alcohol use. This might suggest that individuals with high Jock or Popular crowd affiliation, for example, who are also highly

susceptible to peer influence are more likely to succumb to the pressure in risky college environments to engage with or select into peer groups with high alcohol use.

As stated, these findings begin to address an important gap in PCA and peer relations research. This study expands upon previous research by shedding light on the long term implications of high school identity. While it is important to examine how peers and social identity may influence risky behaviors in adolescence, it is also important to examine their influence across the life span. This information could influence intervention programs as they suggest the need to intervene early, during high school, with emphasis on certain crowds. These results also highlight the importance of descriptive peer norms in behavior, even during early adulthood, and suggest that interventions might be more effective if they include these key sources of potential influence.

Future Directions

Future studies can expand upon these findings by considering injunctive norms in conjunction with descriptive norms to determine if they account for additional variance in predicting alcohol outcomes and if they have different associations with studied peer crowds. Research by Berkowitz (2004) and LaBrie and colleagues (2010) have highlighted the importance of injunctive norms in predicting alcohol-related outcomes, despite being subject to more pronounced misestimations than descriptive norms. In fact, these misperceptions make norms an important target for interventions. Further study with a longitudinal model would be important in determining whether the observed effects persist past the transition to college or if other variables become more relevant predictors of alcohol use. These models might also be tested with other drugs use as

outcomes of interest in order to determine if similar patterns and processes emerge.

Limitations

There are several limitations to this study that are important to note and may be improved upon in future studies. Due to limited variability in the sample endorsement, Burnout, Loner, and Alternative crowds were not included in data analyses. Not enough individuals reported identifying with these groups in order to perform the analyses with sufficient power. Alternatively, allowing individuals to identify with more than one crowd may have inflated the associations among different peer crowds.

This study featured a retrospective longitudinal design and this design comes with its own limitations. The data may be of limited validity and interpretability due to faulty memory or retrospective biases. Similarly, it is possible that the participants' maturation could have affected how they perceive themselves and how they evaluate their high school selves. All data were reported by a single informant, including data regarding peer alcohol use. As the participants were reporting on behaviors that are illegal for their age group, even though they are reassured that there will not be any legal ramifications for reporting illegal substance use, it is possible that some participants may have underreported or otherwise distorted their substance use history. Additionally, participants were not randomly selected from the entire population of undergraduates and still constitute a convenience sample. It is possible that there may be differences in the individuals who participate in the research pool and the population as a whole.

Nevertheless, the findings of this study indicate that high school peer crowd affiliation may play an important role in college drinking, partially by way of close friends' drinking behavior. For some crowds, namely Jocks and Populars, affiliation is

associated with higher risk of problematic drinking and more frequent weekly drinking, partly because of more frequent drinking amongst close friends. For Brains, however, affiliation might operate in a protective manner against such outcomes, in part by having friends who drink less. These findings provide valuable insights about drinking behavior during the transition to college, and more studies should consider how identity and peer factors play a role in this process. Such information could ultimately lead to development of early social intervention to prevent this risky behavior in college.

References

- Arbuckle, J. L. (2011). *IBM SPSS Amos 20 User's Guide*. IBM Corporation, Armonk, NY.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations, *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Berkowitz, A. D. (2004). The social norms approach: Theory, research, and annotated bibliography. [Electronic Version]. Retrieved from http://www.alanberkowitz.com/articles/social_norms.pdf.
- Borsari, B., & Carey, K. B. (2003). Descriptive and injunctive norms in college drinking: A meta-analytic integration. *Journal of Studies on Alcohol*, 64, 331–341.
- Brechwald, W. A., & Prinstein, M. J. (2011). Beyond homophily: A decade of advances in understanding peer influence processes. *Journal of Research on Adolescence*, 21(1), 166-179.
- Brown, B., & Lohr, M. J. (1987). Peer-group affiliation and adolescent self-esteem: An integration of ego-identity and symbolic-interaction theories. *Journal of Personality and Social Psychology*, 52(1), 47-55.
- Coggans, N., & McKellar, S. (1994). Drug use amongst peers: Peer pressure or peer preference?. *Drugs: Education, Prevention & Policy*, 1(1), 15-26.
- Corbin, W. R., Iwamoto, D. K., & Fromme, K. (2011). Broad social motives, alcohol use, and related problems: Mechanisms of risk from high school through college. *Addictive Behaviors*, 36(3), 222-230.
- D'Amico, E., & McCarthy, D. (2006). Escalation and Initiation of Younger Adolescents'

- Substance Use: The Impact of Perceived Peer Use. *Journal of Adolescent Health*, 39(4), 481-487.
- Dawson, D. A., B. F. Grant, et al. (2004). Another look at heavy episodic drinking and alcohol use disorders among college and noncollege youth. *Journal of Studies on Alcohol*, 65(4): 477-488.
- Faul, F., Erdfelder, E., Lang, A.G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191.
- Fleming, M. F., Barry, K. L., & MacDonald, R. (1991). The Alcohol Use Disorders Identification Test (AUDIT) in a college sample. *International Journal of the Addictions*, 26(11), 1173-1185.
- Fromme, K., Corbin, W.R., & Kruse, M.I. (2008). Behavioral risks during the transition from high school to college. *Developmental Psychology*, 44 (5), 1497-1502.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55.
- Hussong, A. M. (2002). Differentiating Peer Contexts and Risk for Adolescent Substance Use, 31(3), 207-220.
- Jaccard, J., Blanton, H., & Dodge, T. (2005). Peer Influences on Risk Behavior: An Analysis of the Effects of a Close Friend. *Developmental Psychology*, 41(1), 135-147.
- Jackson, K. M., Sher, K. J., & Park, A. (2005). Drinking among College Students. In M. Galanter, M. Galanter (Eds.), *Recent developments in alcoholism: Volume 17*.

Alcohol problems in adolescents and young adults (pp. 85-117). New York, NY
US: Kluwer Academic/Plenum Publishers.

Kandel, D. (1978). Homophily, selection, and socialization in adolescent friendships.

American Journal of Sociology, 84(2), 427-436.

La Greca, A. M., Prinstein, M. J., & Fetter, M. D. (2001). Adolescent peer crowd
affiliation: Linkages with health-risk behaviors and close friendships. *Journal of
Pediatric Psychology*, 26(3), 131-143.

LaBrie, J. W., Huchting, K., Pedersen, E. R., Hummer, J. F., Shelesky, K., & Tawalbeh,
S. (2007). Female college drinking and the social learning theory: An examination
of the developmental transition period from high school to college. *Journal of
College Student Development*, 48(3), 344-356.

LaBrie, J. W., Hummer, J. F., Neighbors, C., & Larimer, M. E. (2010). Whose opinion
matters? The relationship between injunctive norms and alcohol consequences in
college students. *Addictive Behaviors*, 35(4), 343-349.

Landrine, H., Richardson, J. L., Klonoff, E. A., & Flay, B. (1994). Cultural diversity in
the predictors of adolescent cigarette smoking: The relative influence of peers.
Journal of Behavioral Medicine, 17, 331-346.

Mercken, L., Candel, M., Willems, P., & de Vries, H. (2009). Social influence and
selection effects in the context of smoking behavior: Changes during early and
mid adolescence. *Health Psychology*, 28(1), 73-82.

Miller, J., Flory, K., Lynam, D., & Leukefeld, C. (2003). A test of the four-factor model
of impulsivity-related traits. *Personality and Individual Differences*, 34(8), 1403-
1418.

- Neighbors, C., Lee, C. M., Lewis, M. A., Fossos, N., & Larimer, M. E. (2007). Are social norms the best predictor of outcomes among heavy-drinking college students? *Journal of Studies on Alcohol and Drugs, 68*, 556–565.
- Park, A., Sher, K. J., Wood, P. K., & Krull, J. L. (2009a). Dual mechanisms underlying accentuation of risky drinking via fraternity/sorority affiliation: The role of personality, peer norms, and alcohol availability. *Journal of Abnormal Psychology, 118*, 241–255.
- Park, A., Sher, K. J., & Krull, J. L. (2009b). Selection and socialization of risky drinking during the college transition: The Importance of microenvironments associated with specific living units. *Psychology of Addictive Behaviors, 23*, 404-414.
- Perkins, H. W. (2002). Social norms and the prevention of alcohol misuse in collegiate contexts. *Journal of Studies on Alcohol, Supp. No. 14*, 164–172.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, and Computers, 36*, 717-731.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Assessing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research, 42*, 185-227.
- Prinstein, M. J., & Greca, A. M. L. (2002). Peer crowd affiliation and internalizing distress in childhood and adolescence: A longitudinal follow-back study. *Review Literature and Arts of the Americas, 12*(3), 325-351.
- Prinstein, M., Boergers, J., & Spirito, A. (2001). Adolescents' and their friends' health-risk behavior: Factors that alter or add to peer influence. *Journal of Pediatric*

Psychology, 26(5), 287-298.

Saunders, J. B., Aasland, O. G., Babor, T. F., De La Fuente, J. R., & Grant, M. (1993).

Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption--II. *Addiction*, 88, 791-804.

Sieving, R., Perry, C., & Williams, C. (2000). Do friendships change behaviors, or do behaviors change friendships? Examining paths of influence in young adolescents' alcohol use. *Journal of Adolescent Health*, 26(1), 27-35.

Simons-Morton, B., & Chen, R. (2006, July). Over time relationships between early adolescent and peer substance use. *Addictive Behaviors*, 31(7), 1211-1223

Steinberg, L., & Monahan, K. C. (2007). Age differences in resistance to peer influence. *Developmental Psychology*, 43(6), 1531-1543.

Sussman, S., Pokhrel, P., Ashmore, R. D., & Brown, B. B. (2007). Adolescent peer group identification and characteristics: A review of the literature. *Addictive Behaviors*, 32, 1602 - 1627.

Urberg, K., Degirmencioglu, S., & Pilgrim, C. (1997). Close friend and group influence on adolescent cigarette smoking and alcohol use. *Developmental Psychology*, 33(5), 834-844.

Urberg, K. A., Luo, Q., Pilgrim, C., & Degirmencioglu, S. M. (2003). A two-stage model of peer influence in adolescent substance use: Individual and relationship-specific differences in susceptibility to influence. *Addictive Behaviors*, 28(7), 1243-1256.

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