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Social Network Influences and College Student Drinking

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ABSTRACT

Heavy drinking among college students inhibits academic success and poses serious risks to others in the form of alcohol-related violence, sexual assaults, and automobile accidents (Hingson, 2010). Furthermore, data have indicated an increasing rate of heavy drinking among college students (Hingson, 2010; NIAAA, 2002; NIAAA, 2007). Research suggests that parents maintain ongoing influence on young adult alcohol use during the transition to college, even in the face of potentially negative influence from peers and perceived drinking norms. However, the variables used to demonstrate this have varied widely. This study aimed to develop a cohesive model of parent and peer influences on student drinking, and to elucidate the structural and functional components of social influence most relevant to young adult alcohol use. Participants were 792 university students responding to an online survey about their drinking behaviors, as well as behaviors of their parents and friends. Confirmatory factor analysis was used to assess the tenability of latent construct models of mom, dad, and friend behaviors related to student drinking. These behavioral indicators included drinking severity, encouragement of

drinking, social support, contact, and relational conflict. When these variables failed to form cohesive and adequately fitting models across the three social groups (i.e., mom, dad, and friends), hierarchical regression analyses were used to further explore the associations between social network variables and college student drinking. Results indicated generally stronger associations between student drinking and friend behaviors, relative to parent behaviors. Nevertheless, parent behaviors demonstrated significant associations with student drinking; and often times the area of effect was one that was absent for peers (e.g., financial support). In other instances parents demonstrated an opposing effect to that of peers (e.g., support for drinking). Taken together, this suggests that parent behaviors maintain unique and ongoing relationships with their college students' drinking behaviors, and remain worthy of consideration when it comes to prevention and treatment efforts.

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Introduction

Rates of college student drinking have risen over the years, and the related consequences are impacting student drinkers and bystanders alike (Hingson, 2010; NIAAA, 2002; NIAAA, 2007). A national survey reported that between 1999 and 2005, the proportion of young adult college students who binge drank (defined in this survey as 5 or more drinks in one sitting) in the past month rose from 41.7 to 45.2 percent, and the percentage of students who reported driving after drinking also increased significantly (NIAAA, 2007). Heavy drinking among college students inhibits academic success and poses serious risks to others in the form of alcohol-related violence, sexual assaults, and automobile accidents (Hingson, 2010). Thus the need for a more nuanced understanding of this problem is clear.

Ecological Systems Theory (Brofenbrenner, 1994) may provide a guiding framework for conceptualizing the development and maintenance of problematic drinking in youth. Stemming from a contextualist perspective, the Ecological Systems model proposes that human behavior is best understood in relation to one's context. According to this paradigm, there exists a constant exchange of influence between people and their environments. Hence researchers must consider an individual's surroundings in order to fully understand their behavior or intervene appropriately. The Ecological Systems perspective maintains that individual behavior interacts with a number of overarching environmental systems including time, culture, community, and the family (Brofenbrenner, 1994). Although the family represents merely a piece of an individual's wider context, research suggests that family influence, particularly from parents, may be an important consideration for prevention and treatment efforts aimed at problematic drinking behavior (Cleveland et al., 2012; Ichiyama et al., 2009).

Research has demonstrated that parents can influence the course of young adult drinking, although the variables used to demonstrate this have varied widely. For instance, some studies have identified frequency of contact and perceived closeness with parents as having an effect on student drinking outcomes (Jung, 1995; LaBrie & Cail, 2011; Wood, Read, Mitchell, & Brand, 2004). Other studies have found that parents' approval of alcohol use was predictive of later drinking consequences (Fairlie, Wood, & Laird, 2011). Still others cite parental modeling of drinking behavior as a source of influence on young adult drinking behavior (Abar, Abar, & Turrisi, 2009).

Some researchers have attempted to integrate these parental influences on student drinking. For instance, Varvil-Weld, Mallett, Turrisi, and Abar (2011) developed latent profiles based on parental drinking, monitoring, and communication style; they found that one of these profiles, characterized by poor communication with father figures, predicted negative drinking consequences among college students. Nevertheless, studies of college student drinking have not taken into account more general, non-alcohol-specific forms of support, which have been hypothesized to play a major role in health behaviors and overall well-being (Cohen & Wills, 1985). Research on parent support behaviors has been conducted with adolescents and has demonstrated a negative association between parental support, specifically emotional and instrumental support, and the adolescents' drug and alcohol use (Wills, Resko, Ainette, & Mendoza, 2004). The same study found a positive relationship between support from friends and substance use (Wills, Resko, Ainette, & Mendoza, 2004). It remains to be seen whether these relationships would hold for young adults as well.

Research suggests that parents maintain ongoing influence on young adult alcohol use during the transition to college, even in the face of potentially negative influence from peers and

perceived drinking norms. For instance, Wood and colleagues (2004) found that parental involvement moderated the relationship between college students' perceived norms and their drinking behavior, such that the relationship between drinking and norms was weaker among those with greater parental involvement. Similarly, LaBrie and Cail (2011) found that the relationship between perceived norms and drinking behavior was moderated by frequency of contact with parents, such that female students with more frequent maternal contact appeared less influenced by peer drinking norms. Furthermore, Jung (1995) found that parent-child closeness moderated the relationship between fathers' and sons' drinking practices, such that fathers and sons who shared a closer relationship also demonstrated more similar drinking patterns, relative to dyads with more distant relationship styles.

Encouraging evidence such as this has spurred the development of parent-based interventions aimed at reducing problematic drinking on college campuses. Most parent-based interventions target improvements in parent-offspring communication and involve a psychoeducation component, usually delivered through a handbook (Cleveland, Lanza, Ray, Turrisi, & Mallett, 2012; Donovan, Wood, Frayjo, Black, & Surette, 2012). Preliminary results from outcome studies have been mixed (Cleveland, Lanza, Ray, Turrisi, & Mallett, 2012: Donovan, Wood, Frayjo, Black, & Surette, 2012; Ichiyama et al., 2009; Turrisi et al., 2009; Turrisi et al., 2012; Turrisi, Jaccard, Taki, Dunnam, & Grimes, 2001; Wood et al., 2010). For instance, Donovan et al. (2012) found that a parent-based intervention increased parent-offspring communication about protective behavioral strategies, such as avoiding drinking games and using a designated driver. Other studies found that the intervention reduced increases in drinking over time, particularly for females and nondrinkers (Cleveland et al., 2012; Ichiyama et al., 2009). However, Turrisi and colleagues (2009) found that a parent-based intervention was no

more effective than a control condition unless combined with BASICS, a brief intervention that provides personal normative feedback to students. Nevertheless, it should be noted the control condition for this study was a BASICS intervention by mail; therefore it is possible that a parent-based intervention alone would have been demonstrably more effective if the comparison criterion was not so comparably effective. There was, after all, an overall treatment effect.

Parent-based interventions target positive changes in parental monitoring, communication, and disapproval of drinking (Donovan et al., 2012; Wood et al., 2010). Due to mixed trial results and limited mediation analyses (Wood, et al., 2010), it is unknown which parent variables have the potential to influence student drinking above and beyond that of peers. Such information would be instrumental in the development and refinement of parent-based interventions. Furthermore, the unintegrated and wide range of variables used to explain parent and peer influences on young adult drinking indicates that the field lacks a cohesive model of these constructs. Thus the overarching aim of the present study was twofold: to develop a cohesive model of parent and peer influences on student drinking, and to elucidate the structural and functional components of social influence most relevant to young adult alcohol use.

Aims and Hypotheses

Aim 1: Define latent constructs. This study aimed to determine whether maternal, paternal, and friend influences could be modeled as latent constructs, subsuming measures of their drinking behavior, connectedness with the student, approval of the student's alcohol use, general support for the student, and criticism. These variables were proposed as a single construct based on their strong relationships with student drinking demonstrated in the literature. It was hypothesized that, for the proposed constructs of maternal and paternal influence, this set of five variables would be interrelated as they have each demonstrated significant and consistent

individual relationships with adolescent and college student drinking (Abar, Abar, & Turrisi, 2009; Fairlie, Wood, & Laird, 2011; Jung, 1995; LaBrie & Cail, 2011; Wills, Resko, Ainette, & Mendoza, 2004; Wood, Read, Mitchell, & Brand, 2004). In terms of peer influence, fewer of these particular measures have demonstrated relationships with adolescent and college student drinking. These variables include peer alcohol use, approval of drinking, and support (Larimeer, Turner, Mallett, & Geisner, 2004; Wills, Resko, Ainette, & Mendoza, 2004; Wood, Read, Mitchell, & Brand, 2004). Nevertheless, a parallel set of peer influence measures was investigated to provide a comparable construct against which parental influence could be compared.

A primary objective of this study was to investigate these constructs in relation to students' drinking severity, consequences, and subjective evaluation of those consequences. Prior research suggests that subjective evaluations of drinking consequences predict the quantity of future drinking consequences (Merrill, Read, & Barnett, 2013). Likewise, heavy episodic drinking has been shown to be positively related to alcohol-related consequences (Wood, Read, Mitchell, & Brand, 2004). This study sought to explore the relationships among the three measures and evaluate the appropriateness of conceptualizing drinking as a unitary construct.

Aim 2: Main effects of social network influence and social support. A key interest in this project was to determine which forms of perceived, available support were most closely associated with more moderated drinking behaviors and fewer consequences among college students. Based on a stress-buffering model, researchers have posited that the ability of social support to influence health and well-being depends on how well a specific type of support meets the needs of a given stressor, thus certain forms of social support may be more effective than others depending on an individual's situation (Cohen & Wills, 1985; Vaux, Riedel, & Stewart,

1987). For instance, Cohen and Wills (1985) suggested that emotional and informational support are likely applicable to a wide range of scenarios, whereas instrumental support and social companionship may be more limited in their applicability. Among adolescents, emotional and instrumental support have been found to be protective factors in relation to substance use (Barrera, Chassin, & Rogosch, 1993; Wills, Vaccaro, & McNamara, 1992). College students experience a number of stressors and consequences as a result of their alcohol use (Hingson, 2010). As such, it would be useful to investigate which types of support students are receiving and how that may relate to their drinking behavior. Based on a stress-buffering model (Cohen & Wills, 1985; Vaux, Riedel, & Stewart, 1987) and past research (Barrera, Chassin, & Rogosch, 1993; Wills, Vaccaro, & McNamara, 1992), it was hypothesized that emotional support, and possibly instrumental support, would be most closely associated with lower levels of student alcohol use.

An additional aim was to determine whether parents maintain influence over college student drinking behavior. As noted above, there is evidence to suggest that parents have the potential to influence their offspring's behavior during the transition to college, and this holds despite the well-documented effects of perceived peer norms (Jung, 1995; LaBrie & Cail, 2011; Wood, Read, Mitchell, & Brand, 2004). Specifically, prior research has demonstrated that contact and perceived closeness with parents can moderate the effects of perceived drinking norms on student drinking (Jung, 1995; LaBrie & Cail, 2011; Wood, Read, Mitchell, & Brand, 2004). Thus it was hypothesized that parental influence would explain a significant proportion of the variance in college student drinking, even after controlling for related influences from peers.

Aim 3: Explore moderators. It was further hypothesized that variance explained by parent influence would be greater than that of friends for college students who reported more frequent and positive contact with their parents. Additionally, it was predicted that this effect would be greater for college students with moderate to light drinking parents.

This study also aimed to test gender as a possible moderator. Several studies have suggested females may be more amenable to parental influence, and female relatives may have stronger impacts than male relatives on offspring alcohol use. For instance, LaBrie and Cail (2011) found that mother-daughter contact was negatively associated with student drinking, yet this association did not hold for father-daughter dyads or contact between male students and their parents. Similarly, Turner and colleagues (1993) found that through a family history model of alcohol dependence, maternal relatives accounted for more of the variance in family members' drinking behavior. Hence, in accordance with previous research, a stronger effect of maternal influence on female student drinking was predicted for this study as well. Other possible moderators included year in school and whether the participant was living with their parents or outside the home.

Method

Participants

Participants in this study were 792 college students at a large Southwestern University, ages 18 to 25, who identified as drinkers and maintained contact with at least one parent (defined as a person the participant identified as their mother or father, either biological or adoptive). Of the study sample, 65.9% were female, 33.8% were male, and .4% identified as transgender. Ethnic distributions were 48.0% Hispanic, 37.3% White, and 14.6% other ethnicities (see Table 1).

A small sample of data also was collected from 10 parents in effort to assess the validity of students' reports of their parents' drinking severity. Parent participants were invited to participate via student participants and filled out an online survey of the AUDIT (see 'Social network variables' in 'Measures' below). Of this small sample, 70% (n = 7) were mothers.

Measures

Demographic information. Questions regarding age, gender, race, ethnicity, sexual orientation, housing, and income were administered, along with additional inquiries about their year in school (e.g., sophomore), and family variables (i.e., marital status and with which parents they maintain contact). This portion of the questionnaire was adapted from the Demographic Interview 2.2 (CASAA Research Division, 1997). Race and ethnicity questions were incorporated from an NIH Demographics form (National Institute on Aging, 2014).

College student drinking variables. Three facets of alcohol use were assessed, including drinking severity, drinking consequences, and subjective evaluations of those consequences.

Drinking severity. Drinking severity was assessed using the Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993; see Appendix B). This is a measure intended to detect harmful levels of drinking and the possible presence of an alcohol use disorder (Allen, Reinert, & Volk, 2001). Ten items ask respondents to rate their drinking behaviors on five- and three-point Likert-type scales, yielding scores that range from 10 to 50 (e.g., How often do you have six or more drinks on one occasion?). The AUDIT scores traditionally range from 0 to 40, however the item response scale was altered to begin at 1 so that scores could be $\log_{10}$ transformed if needed. The AUDIT has demonstrated good internal consistency (α within the .80s; Allen, Litten, Fertig, & Babor, 1997) as well as

good test-retest reliability (r = .88; Daeppen, Yersin, Landry, Pecoud, & Decrey, 2000). Within the current sample, α = .806.

Drinking consequences. Drinking consequences were assessed using the Brief Young Adult Alcohol Consequences Questionnaire (B-YAACQ; Kahler, Strong, & Read, 2005; see Appendix C). This inventory asks participants whether they have experienced any of 24 possible drinking consequences in the past six months. The original B-YAACQ included dichotomous yes/no response options (Kahler, Strong, & Read, 2005); however this study expanded response options to a 5-point Likert-type scale ranging from "never" to "more than 10 times" in order to allow for greater range in responses and stability in the measure. The B-YAACQ was developed for specific use with college students, and it is a modified version from the original 48-item YAACQ (Read, Kahler, Strong, & Colder, 2006). The 24 consequences included in the B-YAACQ are independent of each other and encompass a comprehensive range in severity. Over a 10 week span, alphas have been reported between .90 and .95 (Merrill, Read, & Barnett, 2013). Among participants responding to the adapted scale, α = .945.

Negative evaluation of consequences. Research has indicated that subjective evaluations of drinking consequences are related to subsequent drinking (Merrill, Read, & Barnett, 2013; see Appendix D). As such, students were asked to rate their perception of the aversiveness of their consequences, as reported through the B-YAACQ. Five items estimated college students' overall evaluations of their drinking consequences (e.g., "In thinking about all the drinking consequences you just endorsed, how negative were these experiences for you?") and ranged on a scale from 1 (not at all) to 7 (extremely). Past research using this type of measure has reported alphas ranging from .83 to .91 (Merrill, Read, & Barnett, 2013). From the present study, α = .926.

Social network variables. College students completed measures to provide separate ratings of their mother's, father's, and friends' behaviors and attitudes. Some of these behaviors and attitudes were specific to drinking (e.g. support for drinking), while others were more general (e.g., emotional support).

Support. Perceived available support was measured using an adapted version of the Social Support Behaviors (SS-B) scale (Vaux, Riedel, & Stewart, 1987; see Appendix E). This is a self-report questionnaire, consisting of 45 items intended to provide five subscale measurements, including emotional support, socializing, practical assistance, financial assistance, and guidance. Participants were asked to rate how likely would their mother, father, or friends be to provide various support behaviors (e.g., give a ride if needed, help out with a necessary purchase, suggest a way to do something, comfort when upset, or visit). Items were rated on a Likert-type scale, ranging from 1 (my mom/dad/friends would certainly not do this) to 5 (my mom/dad/friends would certainly do this). This measure has demonstrated reliability in its original form (full scale r = .85, subscale r's > .80; Wills & Shinar, 2000). Within the current sample, alphas for mom, dad, and friends were .979, .983, and .973, respectively.

Contact. A measure of the quality and frequency of communication consisted of three items, two of which were extracted from the Important People Instrument (IPI; Clifford & Longabaugh, 1991). IPI items used in this study asked that the participant rate how frequently they have been in contact with their mom/dad/friends, how important their mom/dad/friends have been to them, and how close they feel to their mom/dad/friends. Responses were provided on a Likert-type scale ranging from 1 to 7. The IPI in its original form provides an index of investment in one's social network based on three items. One of these items was deemed inappropriate for the current study as it asks participants to quantify the number of people in their

social network, and unlike the IPI, the present study aim was to gauge participants' cohesion with specific network members (i.e., their mom, dad, and friends), rather than assess network size. Hence the third IPI item was replaced with a question asking participants how close they feel to their mom/dad/friends. The entire, original IPI consists of 10 items, which provide a summary variable of social network support for drinking. This summary variable has demonstrated reliability over a three day period; the Shrout-Fleiss intraclass correlation was reported as .80, and the product moment correlation was .95 (Longabaugh, Wirtz, Zweben, & Stout, 1998). Alphas for the mom, dad, and friend measures were .832, .885, and .851, respectively.

Support for drinking. Support for drinking was assessed using three items per mother, father, and friends. Two items were adapted from the IPI ("How often do your friends drink alcohol with you?" and "How have your friends reacted to your drinking?") and a third item was added to improve the stability of the measure ("How have your friends accepted your drinking?"). Items were rated on a five-point Likert-type scale. From the present study, alphas for mom, dad, and friends were .783, .783, and .727, respectively.

Drinking severity. Mothers' and fathers' drinking severity were assessed using an adapted version of the AUDIT (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993; see Appendix B). This measure was intended to be administered to friends as well in the original study plan; however due to clerical error, it was omitted from the survey. The original ten items were adjusted to ask the participant to estimate, to the best of their abilities, their mom's, dad's, and friend's behaviors on five- and three-point Likert-type scales (e.g., "How often do your friends have six or more drinks on one occasion?"). Alpha reliability coefficients were .854 and .884 for the mom and dad versions of this measure.

The AUDIT was the basis of the parent survey. Thus in addition to students responding to items for their mothers and fathers, moms and dads were invited to answer these items for themselves in order to provide a measure of corroboration. Correlation analyses suggested strong agreement between student and parent responses for mothers' AUDIT scores (r = .856, p = .014), however the correlation between student and parent report of fathers' scores could not be interpreted due to a lack of variance in the fathers' self-report scores. Nevertheless, difference scores between participant and parent reports of fathers' drinking severity yielded minimal discrepancies (M = 1.57, min = 0, max = 3, SD = 1.27). Such was the case for moms as well (M = 2.33, min = 1, max = 5, SD = 2.31). The corroborative data provided by parents was evaluated with the understanding that this was an extremely small sample and possibly vulnerable to selection bias.

Conflict. Relational conflict was measured using four items from an interview developed by Fischer (1982) and modified by Finch and colleagues (1989). The items asked participants to rate how often someone has been critical of their behavior, taken advantage of them, broken a promise, or provoked feelings of anger. Response options were provided on a five point Likert-type scale, ranging from 1 (none of the time) to 5 (all of the time). Items were adapted for the current study, to specifically gauge the participants' negative experiences with their mother, father, and friends. This measure yielded alpha reliability coefficients of .766, .752, and .803 for the mom, dad, and friend measures.

Procedure

Participants were recruited from the UNM student body via email invitation from an online survey service, Opinio (ObjectPlanet, 2014), as well as the Psychology Department subject pool via the SONA system, a website that lists Psychology Department studies in which

students can participate for course credit. Participants read a detailed electronic consent form, which explained the purpose of the study, potential risks, and compensation. Participants who completed questionnaires via Opinio were entered into a drawing for one of 55 gift cards to iTunes and Amazon, ranging in amounts from $5 to $200; and participants from the Psychology Department subject pool received credit for their time. The consent form also included the study investigators' contact information. Participation was contingent upon students' indication that they had read and understood the consent form, as well as their meeting inclusion criteria that they were between the ages of 18 and 25 and consumed alcohol at least occasionally. Participants were be notified that they could discontinue their participation at any time for any reason.

After consent had been indicated, participants were guided through a series of online questionnaires. It was estimated that the questionnaires would take about 45 minutes to complete, although the study was untimed and participants were able to take as long as they needed to finish. Upon completion, participants from the Psychology Department's subject pool were given participation credit, and participants from the general student body were redirected to a secondary survey to collect contact information for a gift card drawing. A final web page thanked participants for their time and provided contact information for the researchers and the Institutional Review Board at the University of New Mexico. All study procedures were reviewed and approved by the University of New Mexico Institutional Review Board.

Data Analysis

Prior to testing study aims, basic descriptive statistics, including means, standard deviations, and correlation matrices were examined. Measurement distributions were examined and transformations were performed as necessary. Preliminary analyses also examined the

underlying statistical assumptions associated with the planned inferential tests. This included checking that the relationships between the coefficients and the error term were linear. This also involved determining whether residuals had means of zero, were independent, were normally distributed, and had equal variances across the variable. Additional effort focused on the assessment of missing data.

Aim 1: Define latent constructs. Using Mplus version 7.3 (Muthén & Muthén, 2014), confirmatory factor analysis (CFA) was used to test whether the proposed groups of observed variables could be appropriately modeled as latent constructs. Models were estimated using all available data via maximum likelihood estimation, and procedures recommended by Kline (2011) were followed in assessing the tenability of these measurement models. Acceptable model fits were determined with absolute fit indices (RMSEA) below .08 and an incremental fit index (CFI) above .95. A non-significant χ^2 difference test also was consulted to determine adequate model fit, keeping in mind that the present study's large sample size might bias test results toward significance. If model fits were acceptable, planned analyses included using structural regression models to further investigate the relationships between social relationship constructs and student drinking. It was decided that if acceptable model fit could not be reached, regression analyses would be used to test the relationships among the proposed variables.

Aim 2: Main effects of social network influence and social support. Two-stage hierarchical regression analyses were used to assess the unique associations between parent and friend behaviors and student drinking. Hierarchical regression analyses also were used to explore relationships between social support subscales and student drinking. This was done by entering the independent variables in question (e.g., the five measure scores for mom) into stage two of the analyses and controlling for other social network variables (e.g., the nine measure

scores for friend and dad) into stage one. A change in effect between the two stages was used as an indicator of that independent variable group's collective association with college student drinking. Individual beta coefficients were used for comparisons among the individual measures.

Aim 3: Explore moderators. SEM multi-group analyses was the planned method to test for moderating effects of gender, ethnicity, living situation, year in school, and type of support on the relationships between mom/dad/friend behaviors and student drinking. These tests would have involved constraining structural paths to equality and conducting chi square difference tests. In the case of poor model fit, it was decided that possible moderators would be dummy-coded and entered as interaction terms into the main effect regression equations.

Results

Missing Data

The first set of analyses assessed the extent of missing data. Of the present sample, 42.3% (n = 335) provided complete data on all measures. A series of *t*-tests determined that completers versus non-completers did not differ in their responses to dependent variable measures, nor did they differ in age, gender, year in school, student status (i.e., full- vs. part-time), or chosen means of compensation (i.e., course credit or raffle entry). However, a greater proportion of students who provided complete data lived with their parents, as opposed to outside the home in a dorm or apartment (t (790) = 2.56, p = .011). Additionally, there was a small but significant correlation between time of participation and provision of complete data, such that later participation dates were related to higher rates of complete responses (r = .094, p = .008). Time of participation also was related to means of compensation, such that those who participated at later dates were more likely to be participating for course credit (r = .368, p <.001). However,

consistent with the above *t*-test analysis, there was no direct relationship between means of compensation and rate of complete responses.

Assumption Verification

Additional analyses ensured that assumptions for the following inferential tests were met. Data were screened for normal distributions using histograms and statistics for kurtosis and skewness. For statistics above or below 2 standard deviations, transformations were performed. A $\log_{10}$ transformation was chosen to correct for positive skew, and squaring the data adjusted the negative skew. However, the support, contact, and conflict measures were entered into CFA models untransformed because of either too high or too low variance, and transforming the data seemed to exacerbate these problems, resulting in models that would not converge. Distribution statistics for transformed and raw variables can be seen in Table 2. Homoscedasticity and normal distributions of residuals were verified through examination of residual plots. Lastly, residual time series plots were examined to ensure that the error terms were independent. Upon making the necessary transformations, it was determined that assumptions for the inferential analyses had been adequately met.

Correlations

Bivariate correlations were run for both transformed and raw variables (see Table 3). There was little discrepancy between the two sets of data and associations demonstrated; however, following are observations focusing on the transformed data. Significant relationships between parent and friend behaviors and student drinking were indicated, although it was often the case that variables exhibiting significant relationships for parents were opposite those exhibiting relationships for friends (see Table 3). For instance, greater contact with parents was associated with less participant drinking, whereas greater contact with friends was associated

heavier participant drinking. Additionally, friends' support for drinking exhibited moderate associations with participant drinking, whereas the same relationship was non-significant for parents. Parent support was negatively related to student drinking, whereas contrary to previous research (Larimer, Turner, Mallett, & Geisner, 2004; Wills, Resko, Ainette, & Mendoza, 2004; Wood, Read, Mitchell, & Brand, 2004), overall support from friends did not appear to be associated with student drinking behavior. Correlations also were examined for the possibility of multicollinearity among the variables. As this did not appear to be the case (see Table 2), we proceeded with a CFA to determine whether these variables could be modeled as latent constructs.

Aim 1: Latent Constructs

The original model proposed three factors of mom, dad, and friend behaviors associated with student drinking (see Figure 1). Based on a chi square difference test as well as RMSEA and CFI fit indices, original model fits were determined to be poor (mom: CFI = .00, RMSEA = .24, χ^2 (10) = 402.74, p <.001; dad: CFI = .00, RMSEA = .28, χ^2 (10) = 515.33, p <.001; friends: CFI = .00, RMSEA = .25, χ^2 (6) = 255.60, p <.001). Model respecification began with the 'mom behavior' construct. Given that the Support for Drinking measure was aimed at gauging one's support or discouragement of drinking behaviors, it was possible that this measure overlapped with one of the subscales of the Support measure, possibly guidance. Thus it was plausible that the two measures might have had shared variance unexplained by the hypothesized construct. For this reason, re-specification of the model allowed for correlated error terms of the Support and Support for Drinking measures. However, the new model, with covariance between Support and Support for Drinking freely estimated, did not improve model fit (CFI = .84; RMSEA = .21; χ^2 (4) = 59.92, p <.001). In a third iteration of the analysis, the Support for Drinking measure

was removed from the model. This improved the incremental fit index (CFI = .96); however, the absolute fit index (RMSEA = .15 and χ^2 goodness of fit test (χ^2 (2) = 316.15, p <.001) continued to indicate poor model fit. It was noted that the highest residual correlation for this model was between the Support and Contact measures (residual = .39). Thus building upon this model, a fourth iteration of the analysis allowed the covariance between SSB and Contact to be freely estimated. This yielded acceptable model fit to the data (CFI = 1.00; RMSEA = .06; χ^2 (1) = 2.00, p = .16). Nevertheless, this model did not provide adequate fit for the dad measures or convergence for the friend measures.

Further examination of the relationships among variables suggested that the variables might be more appropriately modeled with a two- rather than single-factor structure, splitting between variables that were positively versus negatively related to student drinking (see Figure 2). For instance, certain measures (i.e., parent alcohol use, friends' support for drinking, and conflict) were related to higher levels of student drinking, whereas others (i.e., contact and support) were related to lower levels student drinking. Thus respecified models of mom and dad behaviors included measures of drinking severity, conflict, contact, and support. Respecified models of friend behaviors included measures of drinking severity, support for drinking, contact and support. Support for drinking remained removed from the parent models since this seemed to enhance previous model fits, however it was included in the friend model to achieve adequate model identification since the drinking severity measure was not available for this social network group. These two-factor models demonstrated adequate fit for the mom (CFI = .99; RMSEA = .06; χ^2 (1) = 3.44, p = .06) and dad (CFI = .99; RMSEA = .07; χ^2 (1) = 4.65, p = .03) constructs. Nevertheless, models of the friend data would not converge. Furthermore, the student drinking

dependent variable did not include enough measures to be modeled as a unitary drinking construct.

Aim 2: Main Effects of Social Network Variables

Due to inadequate fit across the three proposed constructs, two-stage hierarchical regression analyses were performed to determine the unique variance in student drinking severity, consequences, and evaluations explained by mom, dad, and friend behaviors. Statistics for the individual measure coefficients are provided in Table 4. After controlling for dad and friend behaviors, mom behaviors continued to collectively explain a small but significant proportion of variance in participant drinking severity ($\Delta R^2 = .033$, ΔF (5, 367) = 3.60, $p = .003$). After controlling for mom and friend behaviors, dad behaviors collectively accounted for variance in the participants' drinking severity ($\Delta R^2 = .025$, ΔF (5, 367) = 2.72, $p = .020$) and evaluation of drinking consequences ($\Delta R^2 = .030$, ΔF (5, 366) = 2.53, $p = .029$). Friend behaviors accounted for unique variance in the participants' drinking severity, drinking consequences, and evaluation of consequences ($\Delta R^2 = .224$, ΔF (4, 367) = 30.52, $p < .001$; $\Delta R^2 = .192$, ΔF (4, 345) = 22.80, $p < .001$; $\Delta R^2 = .062$, ΔF (4, 366) = 6.59, $p < .001$, respectively). Associations between mom behaviors and drinking consequences and evaluations, as well as an association between dad behaviors and drinking consequences, were not observed after controlling for other variables.

Of note, most effect sizes were substantially larger for friends relative to individual mom or dad effects. However, analyzing the parent behaviors together, while controlling for friend behaviors, lessened this discrepancy. Together, parents accounted for variance in all three dependent variables, though the increases in effect sizes were small (drinking severity: $\Delta R^2 = .076$, ΔF (10, 367) = 4.13, $p < .001$; drinking consequences: $\Delta R^2 = .059$, ΔF (10, 345) = 2.79, $p =$

.002; evaluation of drinking consequences: $\Delta R^2 = .068$, ΔF (10, 345) = 2.89, $p = .002$). Only in relation to evaluation of drinking consequences did combined parent effects become comparable to that of friends.

At the individual measure level, moms' support for drinking continued to be significantly associated with students' evaluation of drinking consequences, after controlling for dad and friend variables (see Table 4); this was such that more support for drinking was associated with students' more negative evaluations of their drinking consequences. After controlling for mom and friend variables, dads' drinking severity was positively associated with all three dependent measures of student drinking: severity, consequences, and evaluations of those consequences (see Table 4). After controlling for parent variables, friends' 'support for drinking' and 'relational conflict' were positively related to the three dependent participant drinking variables as well (see Table 4).

Social support subscales. A separate set of analyses was aimed at exploring various subtypes of perceived social support and their relationships with college student drinking. Regressions initially were run for each social network group without controlling for social support from the other groups (e.g., regressing the five support subscales from mom without accounting for variance explained by dad or friends.) For subscales demonstrating significant associations with student drinking variables, two stage hierarchical regressions were used to assess the extent of these effects while controlling for support from the other social network groups. These analyses indicated that, when controlling for support from dads and friends, moms' financial support accounted for a significant proportion of the variance in participant drinking severity ($\beta = .167$, t (5,705) = 1.973, $p = .049$). This was somewhat in line with our hypothesis and previous research suggesting a relationship between instrumental support and

substance use (Barrera, Chassin, & Rogosch, 1993; Wills, Vaccaro, & McNamara, 1992); however contrary to that research and our hypothesis, the relationship demonstrated here was positive, such that more financial support from mothers was related to higher levels of student drinking severity. Post-hoc analyses indicated that among participants living at home, higher family incomes were related to more drinking severity and consequences from the participant, r (n = 747) = .126, p = .001, r (n = 685) = .112, p = .003, whereas the opposite was true of financially independent participants. Among financially independent students, higher incomes were related to lower rates of drinking and consequences, r (n = 722) = -.145, p <.001, r (n = 667) = -.150, p <.001.

A second hypothesis, that parents' emotional support would be relevant to student drinking, was not supported. Emotional support from friends, however, was related to less negative evaluations of drinking consequences, after controlling for support from parents (β = -.193, t (5,716) = -2.431, p = .015). Additionally, and perhaps unsurprisingly, higher levels of socializing from friends were related to more negative evaluations of drinking consequences (β = -.234, t (5,716) = 3.277, p = .001).

Aim 3: Moderators

The significant relationships between parent and friend behaviors and student drinking behaviors (see Table 4) were not moderated by ethnicity, living situation, or the student's year in school. Contrary to initial hypotheses, these relationships were not affected by gender of the participant. Furthermore, mom behaviors, relative to dad behaviors, explained only a slightly larger proportion of variance in student drinking severity (ΔR^2 = .033 versus .025; see Table 4).

The hypothesis that parent behaviors' relation to student drinking would be stronger for those demonstrating closer relationships was not supported. This was determined through a

median split of the parent contact variables, followed by a comparison of effect sizes between friend associations and those of parents' with closer relationships to the participant. Contrary to the hypothesis, moms in closer relationships with the participant did not demonstrate a significant relation to student drinking severity ($\Delta R^2 = .012$, ΔF (5, 164) = .58, $p = .713$), whereas moms in more distant relationships did ($\Delta R^2 = .046$, ΔF (5, 188) = 2.65, $p = .024$). Neither effect surpassed that of friends' ($\Delta R^2 = .224$, ΔF (4, 367) = 30.52, $p < .001$). Fathers in closer relationships demonstrated a sustained effect in relation to students' evaluations of their drinking consequences ($\Delta R^2 = .071$, ΔF (5, 156) = 2.99, $p = .013$); however this effect was substantially less than the parallel effect demonstrated by friends ($\Delta R^2 = .062$, ΔF (5, 156) = 6.59, $p < .001$).

Discussion

The initial aims of the present study were to identify social network variables related to college student drinking, and to assess the tenability of these variables as unitary latent constructs. The initial plan was to then model the relationships between these constructs and student drinking variables, while also assessing for possible moderators of these relationships. Ultimately, variables from the mom and dad social groups were able to be modeled as indicators of latent variables. However, convergence for this model was not reached for the friend variables. Thus in order to move forward with hypothesis testing and to further explore these relationships, hierarchical regressions were used to assess the unique variance in student drinking explained by the different social network groups.

Analyses indicated that mom behaviors and dad behaviors uniquely accounted for small but significant portions of the variance in student drinking, namely drinking severity for mom, and both drinking severity and evaluation of consequences for dad. However, friend behaviors

accounted for a greater proportion of the variance in all three student drinking variables (i.e., drinking severity, drinking consequences, and negative evaluations of drinking consequences). Standardized coefficients for the individual measures seemed to mirror this pattern in that small but significant effects were found for mom and dad measures, however effects generally tended to be greater for the friend measures. Support for drinking appeared to be the most predictive measure for friends, such that more encouragement of drinking was related to more drinking severity, consequences, and negative evaluations of consequences among student participants. Moms' support for drinking maintained an opposite effect such that more encouragements of drinking was related to less negative evaluations of drinking consequences from students. Intuitively, it would seem as though less negative evaluations of drinking consequences would be a reflection of having experienced fewer consequences, however a relationship between moms' support for drinking consequences and students' drinking consequences was not demonstrated. Among fathers, drinking severity appeared to maintain the strongest relationship with student drinking behaviors, such that higher drinking severity among fathers was related to elevations in all three student drinking variables. None of the hypotheses regarding possible interactions were supported.

It was interesting that social support from mom, dad, and friends did not account for a significant amount of variance in student drinking. Nevertheless when analyzing the individual subscales, financial support from mothers' emerged as having a significant association with student drinking. This partially supported the hypothesis that instrumental support would be related to student drinking. However, results presented here suggested the opposite effect such that more financial support from mothers was related to more student drinking. It could be the case that greater financial backing allows for more liberal spending habits, though it also could

have been the case that a third variable unassessed here was accounting for this relationship (e.g., personality factors such as independence or responsibility).

A second hypothesis that emotional support from parents would be related to student drinking was not supported. Although counter-intuitive, this finding could possibly be better understood within the context of a stress-buffering model of social support and health outcomes (Cohen & Wills, 1985; Vaux, Riedel, & Stewart, 1987). As noted previously, the stress-buffering hypothesis posits that, in the event of distress, social support becomes an instrumental buffer against ensuing negative health outcomes. Although we could assume that all college students experience a degree of stress, this study did not assess for subjective distress among the participants. Additionally, this was not a clinical sample, and accordingly AUDIT scores were quite positively skewed. Thus it is possible that social support's relation to drinking and other health outcomes is contingent on a certain degree of distress precipitating those outcomes.

Overall, it appeared as though friend behaviors and attitudes maintained stronger relations to student drinking behavior, relative to those of parents. Nevertheless, it was interesting to note that individual measures tending to demonstrate the strongest associations for one social network group were often demonstrating the weakest associations for another. For instance, of all the support subscales, financial assistance from parents explained the most variance in student drinking severity, whereas none of the support subscales for friends demonstrated an association with this variable. Only in the case of consequence evaluations did support from friends demonstrate an effect. In other instances, the same measures demonstrated opposite associations with participant drinking, depending on the social network group. For instance, mom's 'support for drinking' demonstrated a negative association with students' evaluation of their drinking consequences, such that more support for drinking on behalf of

moms was associated with less negative evaluation of consequences. Friends' 'support for drinking' maintained an opposite effect, such that more support for drinking was related to participants' more negative evaluations of drinking consequences.

This lack of consistency in relationships between parent and friend variables and college student drinking possibly indicates that influence from these social network groups operates via different mechanisms. It might also be the case that these groups cannot be adequately or equally represented by the same measures and model structures. Since these measure were chosen based on an interest in parent variables that have been most closely associated with young adult drinking in the literature, it is likely that these same variables were not the most optimal choices in trying to model friend behaviors associated with student drinking. This might partially account for the adequate CFA model fit found for parents but lack of convergence among 'friend behavior' models.

Strengths and Limitations

A number of other factors may have contributed to the initial CFA models' lack of adequate fit or convergence. The support, contact, and relational conflict measures needed to undergo transformations due to exaggerated skew and/or kurtosis. However, correcting for negative skew in the case of the support and contact measures exaggerated the variance. The relational conflict measure, on the other hand, yielded minimal variance in its raw form, and correcting for its positive skew reduced its variance further. Given the CFA analysis' reliance on the variance-covariance matrix, these issues undoubtedly contributed to the CFA models' lack of convergence.

Some of the more problematic measures described above were adapted specifically for this study, and it is evident that they lacked the psychometric soundness characteristic of more

well-established measures. However, these distribution issues also are likely indicative of a larger sampling limitation. Participants for this study were recruited from an undergraduate student body, thus they are likely to represent a higher functioning and possibly more privileged portion of the wider community. This too could have contributed to issues with variance and distribution. Lastly, due to clerical error, participants were not administered questions about their friends' drinking severity. This severely limited the flexibility in model respecifications for the friend group.

Despite these limitations, this study had several strengths. For instance, despite distributional issues exhibited by the measures, reliability analyses, even for measures that were adapted for this study, yielded moderate to high reliability coefficients. Additionally this study was able to employ data from a diverse sample. Although this means that this sample is perhaps not representative of most college campuses, this study offered findings that are applicable to important and growing sectors within the population, and for whom representation is often lacking in the literature. Lastly, this study offered findings that can be built upon in future studies and applied clinically.

Future Directions and Conclusions

Findings presented here suggest that although influence from peers is substantial, parent behaviors do continue to be significantly related to college students' drinking behavior, even when taking into account the (sometimes counteracting) behaviors from the students' closest friends. This suggests that parent interventions aimed at reducing college student drinking and family interventions for young adults struggling with alcohol are worth continued research and implementation in communities. For instance, there might be cases in which parent invitation into treatment sessions is appropriate. Data presented here also suggests parent financial support

might be directly or indirectly related to a student's drinking. Further research will help define the nature of this association, though for now it might be topic to assess on an individual basis in treatment.

Findings presented here not only suggest that parents matter, but they might matter in particular areas where friends do not. Thus it might be the case that parent and friend influences operate through different mechanisms, and this should be further explored to more accurately inform treatment development. Furthermore, in accordance with a stress-buffering model, it is possible that subtypes of support serve more instrumental and variant roles when paired with greater need for their presence. Hence, it is possible that the small effects for parents and disparities between parent and friend effects would be magnified in a clinical sample, where need for particular types of support are hypothesized to be greater. Thus it will be valuable and interesting to observe how the relationships studied here are expressed within a clinical sample.

In summary, this study provided moderate support for the incorporation of parents into young adult treatment and prevention efforts. It is anticipated that further analyses within a clinical subsample will provide clarifying evidence, either bolstering or weakening this argument. More generally, it is hoped that continued research in this area will lead to more effective and possibly more holistic alcohol treatment approaches.

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Table 1

Demographics

	n (%)	*M* (*SD*)
Gender		
Male	267 (33.7)	
Female	521 (65.8)	
Transgender	3 (00.4)	
Missing	1 (00.1)	
Age		20.27 (1.95)
Race/Ethnicity		
American Indian/ Alaska Native	20 (02.5)	
Asian	42 (05.3)	
Black/African Am.	20 (02.5)	
Pacific Islander	2 (00.3)	
White	293 (37.0)	
Hispanic	377 (47.6)	
Multi-racial	26 (03.3)	
Other	5 (00.6)	
Missing	7 (00.9)	
Living Situation		
With Parents	269 (34.0)	
Without Parents	523 (66.0)	
Years in College		2.45 (1.19)

Table 2

Descriptive Statistics

	n	Mean	*SD*	Variance	Skewness	Kurtosis
Student						
Drinking Severity	764	15.71	4.262	18.165	1.330	2.283
Drinking Severity[1]	764	1.18	.108	.012	.618	.032
Consequences	702	36.39	13.232	175.097	1.957	4.357
Consequences[1]	702	1.54	.132	.017	1.090	.842
Evaluation	775	12.37	7.121	50.706	1.051	.554
Mom						
Drinking Severity	702	12.96	4.077	16.624	3.152	12.843
Drinking Severity[1]	702	1.10	.105	.011	1.923	4.464
Support for Drinking	756	7.26	2.157	4.654	.119	-.418
Support	574	186.11	39.179	1534.974	-1.607	2.520
Support[2]	574	36169.14	12308.964	151510594.163	-.969	.161
Contact	769	18.22	3.521	12.398	-1.982	4.356
Contact[2]	769	344.29	105.552	11141.255	-1.240	.976
Conflict	766	6.95	2.915	8.497	1.553	2.781
Conflict[1]	766	.81	.161	.026	.575	-.164
Dad						
Drinking Severity	711	15.29	5.819	33.861	1.989	4.623
Drinking Severity[1]	711	1.16	.137	.019	1.070	.797
Support for Drinking	739	7.41	2.215	4.908	.217	-.191
Support	568	168.90	47.257	2233.238	-1.070	.491
Contact	773	16.02	4.859	23.614	-1.212	.690
Conflict	760	6.83	3.134	9.820	1.453	2.198
Conflict[1]	760	.80	.176	.031	.620	-.526
Friends						
Support for Drinking	761	10.73	2.091	4.373	-.666	.672
Support	556	164.84	35.435	1255.667	-.500	.148
Contact	776	17.90	3.211	10.313	-1.462	2.807
Contact[2]	776	330.55	101.306	10262.895	-.776	.004
Conflict	770	6.85	2.812	7.907	1.167	1.183

Note: Drinking severity measured with the AUDIT, possible score range: 10-50. Drinking consequences measured with the B-YAACQ, possible score range: 24-120. Evaluation of negative drinking consequences scores range 5-35, higher scores = more negative evaluations. Support for drinking scores range 9-45, higher scores = more encouragement of drinking behaviors. Support scores range 45-225. Contact scores range 9-63. Relational conflict scores range 4-20. [1]Log transformed. [2]Squared.

Table 3

Correlations among Social Network Behaviors and Student Drinking Variables

	S DS	S Cons	S Eval	M DS	M Sup	M Cont	M SD	M Conf	D DS	D Sup	D Cont	D SD	D Conf	F Sup	F Cont	F SD	F Conf
S DS.[1]	-	.794**	.407**	.172**	-.130**	-.133**	.010	.140**	.137**	-.122**	-.099**	.022	.088*	-.030	.082*	.432**	.166**
S Cons[1]	.782**	-	.494**	.177**	-.090*	-.103**	-.025	.162**	.109**	-.106*	-.079*	-.035	.106**	-.005	.048	.392**	.213**
S Eval	.406**	.472**	-	.104**	-.046	-.042	-.105**	.132**	.140**	-.085*	-.084*	-.103**	.137**	-.008	-.087*	.100**	.163**
M DS[1]	.185**	.102*	.120**	-	-.165**	-.198**	.291**	.261**	.294**	-.051	-.101**	.148**	.030	-.057	-.056	.064	.044
M Sup[2]	-.155**	-.094*	-.048	-.173**	-	.635**	.133**	-.341**	-.050	.578**	.205**	.067	-.072	.547**	.210**	.083*	-.138**
M Cont[2]	-.165**	-.112**	-.044	-.225**	.667**	-	.021	-.346**	-.073	.288**	.281**	-.060	-.113**	.218**	.169**	-.039	-.084*
M SD	.004	-.020	-.105**	.231**	.128**	.023	-	-.048	.045	.099*	.038	.567**	-.057	.059	.025	.252**	-.058
M Conf[1]	.123**	.135**	.119**	.271**	-.364**	-.381**	-.042	-	.066	-.219**	-.160**	-.058	.447**	-.148	-.063	.046	.371**
D DS[1]	.111**	.089*	.140**	.292**	-.053	-.087*	.017	.098**	-	-.136**	-.194**	.200**	.247**	-.045	.007	.010	.009
D Sup	-.132**	-.109*	-.085*	-.052	.568*	.290**	.099*	-.231**	-.151**	-	.727**	.173**	-.305**	.420**	.180**	.073	-.114**
D Cont	-.110**	-.081*	-.084*	-.110**	.205**	.267**	.038	-.162**	-.225**	.727**	-	.091*	-.295**	.088*	.126**	.018	-.043
D SD	.013	-.034	-.103**	.115**	.085*	-.053	.567**	-.049	.151**	.173**	.091*	-	-.066	.012	-.001	.223**	-.062
D Conf[1]	.078*	.079*	.140**	.037	-.076	-.113**	-.059	.407**	.292**	-.345**	-.338**	-.056	-	-.096*	-.020	-.004	.287**
F Sup	-.039	-.008	.008	-.052	.510**	.205**	.059	-.136**	-.045	.420**	.088*	.012	-.090*	-	.563**	.113**	-.233**
F Cont[2]	.055	.036	-.096**	-.051	.188**	.157**	.038	-.057	.009	.179**	.127**	.016	-.018	.566**	-	.131**	-.129**
F SD	.385**	.347**	.100**	.038	.103*	-.032	.252**	.021	-.019	.073	.018	.223**	-.016	.113**	.165**	-	.089*
F Conf	.165**	.196**	.163**	.041	-.107*	-.087*	-.058	.331**	.015	-.114**	-.043	-.062	.268**	-.233**	-.156**	.089*	-

Note: S = student participant, M = mom, D = dad, F = friends. DS = drinking severity, Cons = drinking consequences, Eval = evaluation of consequences, Sup = support, Cont = contact, SD = support for drinking, Conf = confront. Untransformed variables are below the diagonal, transformed variables are above the diagonal. [1]Log transformed. [2]Squared. *$p < .05$, **$p < .01$.

Table 4

Student Drinking Variables Regressed on Social Network Variables

	DV: Student Drinking Severity						DV: Student Drinking Consequences						DV: Student Evaluation of Drinking Consequences					
Indep. Variable	*β*	*t*	Sig.	ΔR^2	ΔF	Sig. ΔF	*β*	*t*	Sig.	ΔR^2	ΔF	Sig. ΔF	*β*	*t*	Sig.	ΔR^2	ΔF	Sig. ΔF
Mom				.033	3.60	.003				.019	1.82	.107				.015	1.28	.273
Drinking Severity[1]	.067	1.335	.183				.000	.001	.999				.036	.629	.530			
Support Drinking	-.057	-1.007	.315				-.067	-1.097	.273				-.153	-2.390	.017			
Support[2]	-.117	-1.398	.163				.028	.304	.761				.049	.518	.605			
Contact[2]	-.049	-0.790	.430				-.107	-1.631	.104				-.024	-.345	.731			
Conflict[1]	.077	1.356	.176				.084	1.373	.171				.026	.400	.690			
Dad				.025	2.72	.020				.020	1.91	.092				.030	2.53	.029
Drinking Severity[1]	.122	2.554	.011				.122	2.407	.017				.141	2.595	.010			
Support Drinking	-.089	-1.593	.112				-.113	-1.858	.064				-.068	-1.068	.286			
Support	.102	1.156	.248				.022	.227	.821				-.082	-0.815	.416			
Contact	-.121	-1.736	.083				-.011	-0.145	.884				.065	.814	.416			
Conflict[1]	.005	.084	.933				.021	.353	.724				.067	1.067	.287			
Friends				.224	30.52	<.001				.192	22.80	<.001				.062	6.59	<.001
Support Drinking	.466	10.347	<.001				.412	8.487	<.001				.182	3.549	<.001			
Support	-.016	-0.236	.813				-.002	-.029	.977				.123	1.614	.107			
Contact[2]	.080	1.452	.147				.041	.686	.493				-.110	-1.765	.078			
Conflict	.093	1.909	.057				.156	3.001	.003				.158	2.870	.004			

Note: Coefficients are from stage 2 of a hierarchical regression controlling for other social network variables (e.g., mom controlling for dad and friend variables). [1]Log transformed. [2]Squared.

Figure 1.

Hypothesized Model of Social Network Variables Related to Student Drinking

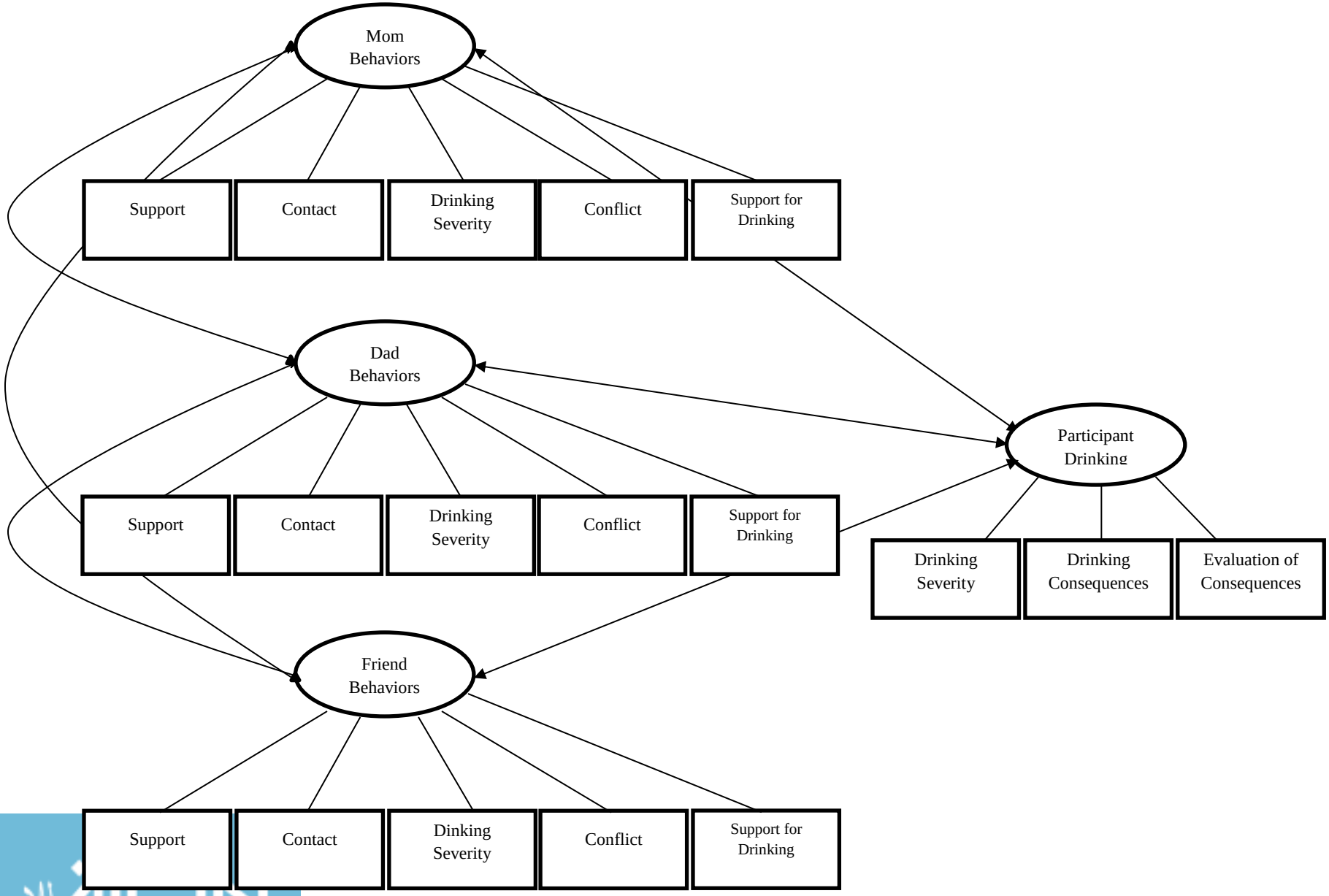

Figure 2.

Respecified CFA Models