



**Digital Commons@**

Loyola Marymount University  
LMU Loyola Law School

---

Heads UP

Psychology

---

2-2010

## Disparity between the perceived alcohol-related attitudes of parents and peers increases alcohol risk in college students

Jessica Cail

*Loyola Marymount University*

Joseph W. LaBrie

*Loyola Marymount University, jlabrie@lmu.edu*

Follow this and additional works at: <https://digitalcommons.lmu.edu/headsup>



Part of the [Psychology Commons](#)

---

### Recommended Citation

Cail, J., & LaBrie, J. W. (2010). Disparity between the perceived alcohol-related attitudes of parents and peers increases alcohol risk in college students. *Addictive Behaviors*, 35(2), 135–139. <http://doi.org/10.1016/j.addbeh.2009.09.019>

This Article - pre-print is brought to you for free and open access by the Psychology at Digital Commons @ Loyola Marymount University and Loyola Law School. It has been accepted for inclusion in Heads UP by an authorized administrator of Digital Commons@Loyola Marymount University and Loyola Law School. For more information, please contact [digitalcommons@lmu.edu](mailto:digitalcommons@lmu.edu).



Published in final edited form as:

*Addict Behav.* 2010 February ; 35(2): 135–139. doi:10.1016/j.addbeh.2009.09.019.

## Disparity between the perceived alcohol-related attitudes of parents and peers increases alcohol risk in college students

**Jessica Cail, Ph.D** and

Loyola Marymount University, Research Fellow, Heads UP, Department of Psychology, 1 LMU Drive, Suite 4700, Los Angeles, CA 90045, (310) 258-7931, jcail@lmu.edu

**Joseph W. LaBrie, Ph.D**

Loyola Marymount University, Associate Professor, Department of Psychology, Director, Heads UP, 1 LMU Drive, Suite 4700, Los Angeles, CA 90045. (310) 338-5238, jlabrie@lmu.edu

### Abstract

Although peer norms have been found to be a particularly strong correlate of alcohol consumption by college students, research suggests that parents also have a significant impact on the behaviors of their children, even after their child has departed for college. The current study investigated the effect of disparity between the perceived approval of alcohol (injunctive norms) of parents and closest friends on college student drinking and consequences, and explored gender differences in this effect. It found that injunctive disparity was significantly correlated with individual drinking and related consequences over and above the strongest known predictor variables of gender, same-sex descriptive norms and drinks per week. Males experienced significantly greater disparity between the beliefs of their parents and their peers, which was related increased drinking and a greater sense of connection to their same-sex peer group. Among females, greater perceived disparity was associated with greater alcohol-related consequences. These results suggest that it may not be the individual attitudes of parents and peers, but rather the difference between them, that is impacting behavior. Interventions that reduce perceived disparity, either by correcting the over-estimation of peer's drinking, or by encouraging parents to stay involved in their children's social lives by promoting socialization with peers whose attitudes more closely match their own, may be beneficial in reducing risky college drinking.

### Keywords

alcohol; peers; parents; injunctive norms; college students; gender

---

© 2009 Elsevier Ltd. All rights reserved.

Please direct all correspondence regarding this manuscript to Joseph LaBrie, Department of Psychology, Loyola Marymount University, 1 LMU Drive, Los Angeles, CA 90045. Phone: (310) 338-5238, Fax (310) 338-2776, jlabrie@lmu.edu.

#### Contributors

Dr. Joseph LaBrie generated the idea for the study in conjunction with Dr. Jessica Cail. Dr. Jessica Cail contributed by writing the introduction, methods, results and discussion. Dr Joseph LaBrie edited various versions of the manuscript, wrote pieces of the discussion and conducted analyses. All authors contributed to and approved the final manuscript.

#### Conflict of Interest

All authors declare they have no conflicts of interest.

**Publisher's Disclaimer:** This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## 1. Introduction

Whether due to increased access to alcohol, freedom from parental control, or an increase in the salience of peer groups (Turrisi, Mastroleo, Mallett, Larimer & Kilmer, 2007), numerous studies have shown that students increase their alcohol consumption in college (See Borsari, Murphy & Barnett, 2007 for review). Unfortunately, heavy drinking by students can lead to a wide array of negative consequences, ranging from missed classes and hangovers, to fights, sexual assaults, and even death (Hingson, Heeren, Winter & Wechsler, 2005; Wechsler, Lee, Kuo & Lee, 2000; Wechsler, Moeykens, Davenport & Castillo, 1995).

### 1.1 Peer norms

In the highly social environment of college, alcohol use has been strongly linked to the perceived attitudes and behaviors of peers (Borsari & Carey, 2003; Perkins, 2002). Normative beliefs concerning how much their peers are drinking (descriptive norms), and how much they approve of drinking (injunctive norms), have been found to be the strongest correlates of alcohol consumption by college students when compared to variables such as race, gender, year in school, fraternity/sorority membership, alcohol expectancies, motives, or even the attitudes of parents (Neighbors, Lee, Lewis, Fossos & Larimer, 2007; Perkins, 2002; Perkins, Haines & Rice, 2005). Research suggests that the norms of closer and more salient peer groups may be more predictive of individual behavior than more distal groups. Thus, the norms of “typical students” are the least predictive of behavior, while those of close same-sex friends have been found to have the greatest influence on drinking and consequences (Korcuska & Thombs, 2003; Lewis & Neighbors, 2004; Lewis, 2007; Thombs, Ray-Tomasek, Osborn & Olds, 2005).

### 1.2. Parental norms

Although many parents believe that their influence on their children diminishes once their children are in college (Turrisi, Wiersma & Hughes, 2000), research suggests that parents continue to have an impact on their children’s drinking through early adulthood (Birch, O’Toole & Kanu, 1997; Brook, Whiteman, Finch & Cohen, 2000; Turrisi, Jaccard, Taki, Dunnam & Grimes, 2001; Turrisi et al., 2000). However, it remains unclear whether this influence operates directly (as in behavioral modeling, parental monitoring or via direct communication) or indirectly (for example, by affecting the child’s choice of friends). Turrisi and colleagues (2001) who found that students whose parents had spoken to them about alcohol before college drank less and showed less tendencies toward drunkenness in college. Turrisi, Wiersma, & Hughes (2000) found that mothers’ communications about alcohol were related to their child’s beliefs about binge drinking and its consequences during the first year of college. Alternatively, parent-child attachment has been associated with a greater intolerance of deviance, which is related to a greater socialization with non-deviant peers, which is in turn associated with less drug use (Barnes, Hoffman, Welte, Farrell & Dintcheff, 2006; Wood, Read, Mitchell & Brand, 2004).

### 1.3. Parents vs. peers

Several studies have investigated the relative influence of parents and peers. Neighbors et al (2008) found that both greater perceived approval of alcohol use by friends and parents were positively associated with students’ drinking. Turrisi, Mastroleo & Mallett et al (2007) found a significant negative correlation between the frequency of alcohol-related parental communications and the child’s descriptive peer norms, as well as the number of friends that drink, or drink to get drunk. Abar & Turrisi (2008) found that the more first-year students perceive that their parents try to find out how they spend their free time, the less likely they were to hang out with heavy-drinking peers, and the less likely they were to drink. However,

only average levels of parental monitoring were associated with low friend use - very low or very high levels of monitoring were associated with high friend use.

Wood et al (2004) found that higher levels of parental involvement in their child's life were associated with weaker relationships between peer influence and alcohol use and consequences. Coombs, Paulson & Richardson (1991) found that youths with a relationship of respect and understanding with their parents were less involved with drugs and less influenced by drug-oriented peers. Furthermore, youths who abstained from drugs were more likely to report that their parents were more of an influence on them than their peers, whereas users were more likely to report the opposite. Users were also more likely to report that they felt better understood by their friends, and respected their opinions more than their parents. Overall, stronger affiliation with peers was associated with higher levels of substance use. In a study of first-year college students, closest friend drinking was found to be positively associated with individual drinking, except among students that had received a parental drinking intervention (D'Amico et al., 2005). The authors suggested that the intervention had impacted drinking, in part, by reducing the influence of their child's closest friends.

Finally, there is also some evidence suggesting that the gender of the child may be an important consideration when weighing the relative influence of parents and peers. Parents may exert greater influence on female college students (Lo, 1995), while males may be more influenced by their peers (Lo, 1995; Read, Wood, Davidoff, McLacken, & Campbell, 2002).

#### 1.4. Parent-peer disparity

Given the considerable evidence of the influence of both parents and peers in college drinking, especially proximal peers such as close friends, several authors have recommended further investigation into the interplay between these important referents (Barnes et al., 2006; Brook et al., 2000; Jones, Hussong, Manning & Sterrett, 2008; Lee, Geisner, Lewis, Neighbors & Larimer, 2007; Neighbors et al., 2008).

Thus, the current study investigates the correlates of greater perceived disparity between the perceived approval of alcohol use (injunctive norms) of a college student's parents, and those of their closest friends, on individual drinking and consequences. Based on the literature, the following predictions were made: First, that students will generally perceive their peers as being more approving of alcohol than their parents. Second, greater disparity between perceived peer and parental approval (computed by subtracting perceived parent approval from perceived peer approval) will be related to increase drinking and consequences. Third, as the literature has suggested that males and females may respond differently to the influence of parents and peers, gender differences will also be explored. It is expected that greater disparity will create greater increases in drinking and consequences among male students.

## 2. Method

### 2.1. Sample

Participants were recruited from two west-coast campuses with distinct demographic characteristics. Campus 1 was a large, public research university with an undergraduate enrollment of nearly 30,000 students. Campus 2 was a private mid-size university with approximately 5,500 undergraduate students.

Of the 3753 participants (n1=1936; n2=1817) who completed the survey, 61% were female. Participants' age ranged from 18-25 years (mean=19.88, sd=1.36), and their ethnic make-up

was 57.4% Caucasian, 18.7% Asian, 10.7% Multiracial, 7.8% “Other”, 3.2% African American, 1.7% Hawaiian/Pacific Islander and 0.5% American Indian/Alaskan.

## 2.2 Procedure

During the first two weeks of the fall 2007 semester, 3500 students from each campus received letters informing them of an opportunity to participate in an upcoming study about alcohol use and perceptions of drinking in college. A few days following the initial mailing, two emails were sent to participants. The first email contained a link to the study survey, while the second included a unique pin number required to enter the survey. Upon clicking the link and entering their pin number, students were provided with a campus-specific IRB-approved informed consent form. If consent was provided, participants were administered a survey that took approximately 40 minutes to complete. A small stipend of \$20 was provided for completion of the survey.

## 2.3. Measures

The survey contained questions on demographics, alcohol use and consequences, injunctive and descriptive norms. Demographic characteristics included age, height, weight, sex, race and ethnicity.

**2.3.1. Individual alcohol use**—Alcohol consumption was measured using the Daily Drinking Questionnaire (DDQ; Collins, Parks & Marlatt, 1985; Kivlahan, Marlatt, Fromme, Coppel & Williams, 1990), in which participants reported the typical number of drinks they typically consumed on each day of the week. The variable “drinks per week” was created by summing the seven days of DDQ data for each participant.

**2.3.2. Alcohol-related consequences**—Alcohol problems were assessed using the Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989), which assesses the occurrence of 25 situations over the past month (i.e. “Not able to do your homework or study for a test” and “Had withdrawal symptoms, that is, felt sick because you stopped or cut down on drinking”). Each item was rated on a scale from 1-4 with 1 indicating “never” and 4 indicating “more than 10 times”. Inter-item reliability was acceptable ( $\alpha = .918$ ). Each participant’s consequences were computed by summing their RAPI scores.

**2.3.3. Perceived injunctive norms**—Participants’ perceptions of their parents’ and peers’ attitudes towards drinking were assessed using the Injunctive Norms Questionnaire (Baer, 1994). Participants were asked to estimate the extent to which their parents or closest friends approve or disapprove of four alcohol related scenarios including “drinking alcohol every weekend”, “drinking alcohol daily”, “driving a car after drinking” and “drinking enough to pass out”. Items were scored on a 7-point scale, ranging from 1 (strongly disapprove) to 7 (strongly approve). Inter-item reliability was lower for perception of parents’ attitudes ( $\alpha = .576$ ) than for friends’ ( $\alpha = .706$ ). For the purposes of analysis, composite variables were created by combining the four injunctive normative items for each referent into an approval composite representing an average level of approval across a range of drinking behaviors.

**2.3.4. Perceived injunctive disparity**—This variable was calculated by subtracting the composite for perceived parental approval from the composite for perceived peer approval.

**2.3.5. Perceived descriptive norms**—Perceptions of peers’ drinking were measured using the Drinking Norms Rating Form (DNRF; Baer, Stacy & Larimer, 1991), in which participants estimated the average number of drinks consumed by a typical same-sex student on their campus on each day of the week.

### 3. Results

Preliminary analyses revealed that the mean disparity experienced by all subjects was  $+0.82$  ( $sd = .92$ ), indicating a general perception that peers approve of drinking more than parents. In fact, the perceptions of the vast majority (92.3%) of students held to this pattern. However, the presence of a minority of participants that perceived their parents to be more permissive than their peers resulted in a number of disparity values in the negative range, which were problematic for statistical analyses. As our original intent was to explore the correlates of greater perceived disparity between peers and parents, two important and proximal referent groups in a college student's life, we only included those participants who had a positive discrepancy score. As previously noted this included the vast majority of the original sample and allowed us to focus on discrepancy while being able to conduct meaningful statistical analyses. Thus, our new sample consisted of 3381 participants from both campuses ( $n_1=1740$ ;  $n_2=1641$ ). There were no differences on any demographic variables between those who were included in the new sample and those who were excluded.

Using this new sample, mean levels of alcohol consumption, related consequences and disparity were calculated for all subjects, as well as for males and females separately. For all subjects, students reported consuming an average of 6.26 ( $sd = 8.75$ ) drinks over an average of 1.64 ( $sd = 1.54$ ) drinking days per week. The average score for RAPI consequences over the past month was 2.47 ( $sd = 4.73$ ). Further, the mean disparity between perceived peer and perceived parental approval was  $.95$  ( $sd = .85$ ). Next, ANOVAs explored possible gender differences on these variables. Males consumed significantly more drinks per week than females (8.76 vs. 4.68,  $p < .001$ ), experienced more alcohol related consequences (2.76 vs. 2.29,  $p < .01$ ), and rated their peers as drinking more per week (16.76 vs 10.84,  $p < .001$ ). Males experienced significantly greater disparity between perceived peer and perceived parental approval of drinking (males: 1.07; females:  $.87$ ,  $p < .001$ ). Results of these analyses along with means and standard deviations for the entire sample as well as for males and females can be found in Table 1.

The relationships between injunctive disparity, drinks per week, consequences and descriptive norms were then examined using correlational analyses. For all subjects, disparity was found to be significantly associated with individual drinks per week ( $r = .293$ ,  $p < .001$ ), RAPI consequences ( $r = .185$ ,  $p < .001$ ) and descriptive norms ( $r = .201$ ,  $p < .001$ ). Table 2 shows the same correlations broken down by gender, and shows that all relationships are significant. However, further analyses using the Fisher  $r$ -to- $z$  transformation revealed that disparity was significantly more strongly related to drinks per week ( $z = 3.46$ ,  $p < .001$ ) and descriptive norms ( $z = 1.88$ ,  $p < .05$ ) for males, although it was not differentially associated with consequences for males versus females.

#### 3.1. Disparity and drinking

Hierarchical regression was then used to assess the contribution of injunctive disparity to individual alcohol use while controlling for the well-established predictor variables of gender and same-sex descriptive norms, and additionally to discover whether there was a gender  $\times$  discrepancy interaction. Results displayed in Table 3 reveal that parent-peer injunctive disparity was significantly related to individual drinks per week ( $p < .001$ ), over and above both gender and same-sex descriptive norms. Furthermore, disparity significantly interacted with gender ( $p < .001$ ) such that, although males and females drank similarly at low levels of disparity, at higher levels of disparity, greater disparity in males was associated with greater increases in individual drinking. Figure 1 provides a graphical illustration of this relationship. Note that in this graph, high and low levels of disparity are depicted as one standard deviation above and below the mean respectively (Aiken & West, 1991).

### 3.2. Disparity and consequences

Hierarchical regression was also used to assess the contribution of disparity to the experience of alcohol-related consequences. Disparity was found to be associated with RAPI consequences ( $p < .05$ ) over and above the predictor variables of gender, drinks per week and same-sex descriptive norms (See Table 3). However, there was no disparity  $\times$  gender interaction.

## 4. Discussion

The current study found that the disparity between the perceived drinking approval of peers versus parents was significantly associated with individual drinking and negative alcohol-related consequences. The relationship between disparity and drinking emerged even after controlling for the well-known predictors of gender and same-sex descriptive norms; while the relationship between disparity and consequences was significant when controlling for gender, same-sex descriptive norms and actual drinking. Analyses of gender differences revealed that males perceived greater disparity between their parents and their peers, and that gender moderates the relationship between disparity and drinking. Specifically, it was found that while males and females drank similarly at low levels of disparity, at higher levels of disparity, greater disparity in males was associated with greater increases in individual drinking. Interestingly, disparity was not found to significantly interact with gender in relation to alcohol-related consequences.

The fact that the gender moderation revealed differential risk for males on drinking warrants further exploration. It is possible that male students more readily detach themselves from their parents (Lapsley, Rice & Shadid, 1989; Lopez, Campbell & Watkins, 1986) and integrate themselves into their new college peer group, one which bonds primarily through alcohol-related activities. Conversely, it may be that high levels of perceived disparity between parents and peers, perhaps resulting from misperception of the norm (Berkowitz, 2004; Perkins et al., 2005; Perkins, Meilman, Leichliter, Cashin & Presley, 1999) may force a student to feel that they must choose between the values of their parents and their peers, and males are more likely to choose their peers. Regardless of the reason, when faced with greater disparity, males appear to be adopting the norms of their peers over their parents, with the end result of greater alcohol consumption.

Although both genders believed that their peers are more approving than their parents, males reported greater disparity between peer and parental attitudes. As there was a smaller difference between males' and females' perceived parental approval (1.73 vs. 1.58, respectively) than for peer approval (2.80 vs. 2.45), most of the disparity in males therefore resulted from the greater perceived approval of their closest friends. This suggests that males may be hanging out with friends they perceive as highly approving of alcohol use and further from their parent's ideals. Although these findings may appear to be contradictory to recent work suggesting that adolescents and college students generally choose friends whose attitudes are perceived to match those of their parents (Abar & Turrise, 2008), they support those of Neighbors et al. (2008). Neighbors et al. found that, while both males and females perceive that their friends are more approving of risky drinking than either themselves or their parents (the least approving), women are more likely to rate their friends' approval as more similar to their own.

This study is unique in that it focuses on the effects of injunctive norms (approval/attitudes) on college drinking, rather than the more widely-used descriptive norms (perceived amount of alcohol use). Although the influence of descriptive norms in college student drinking has been well established (see Berkowitz, 2004 for review), the precise role of injunctive norms remains unclear (Neighbors et al., 2008). Rimal (2008) stated that the power of peers is

more complex than the direct influence assumed by many descriptive normative interventions currently in use around the country, and that this complexity may explain some of the inconsistencies seen in the effectiveness of these interventions. Lee et al. (2007) found that injunctive approval and descriptive drinking norms may interact synergistically to drive individual drinking. Further, several authors have suggested that proximity of referent group must additionally be taken into consideration, as proximal referents such as friends and family may be of greater importance than those of more distal groups (Chawla, Neighbors, Lewis, Lee & Larimer, 2007; Cho, 2006; Neighbors et al., 2008)

Therefore, this study is also unique in that it suggests that perhaps it is not so much the individual attitudes of parents and peers that are important, but rather the degree to which they are different. Thus, risk-reducing interventions with an injunctive norms component may choose to focus on the interplay between the perceived attitudes of those figures that are most proximal figures in a student's life, parents and closest friends. This may provide benefit beyond the traditional descriptive interventions currently in use. On the peer side of the equation, normative interventions that correct misperceptions in peer approval of drinking may serve to reduce this perceived disparity. On the parent's side, by remaining involved in their child's social life and encouraging them to socialize with peers whose attitudes more closely match their own, parents may continue to play a role in their child's drinking choices, even though he or she is away at college. Currently, little is known about the actual injunctive beliefs of parents in relation to their college-age children's drinking, and future research is needed to determine whether students actually misperceive their parents' approval, and if so, in what direction these misperceptions exist.

#### 4.1. Study limitations

Although this study includes a large representative sample of students from two diverse universities, limitations of the current findings must be taken into consideration. First, individual drinking and consequences were measured by self-report data. However, previous studies have shown that self-report survey data (Babor, Steinberg, Anton & Del Boca, 2000; Midanik, 1988) and self-reported drinking (Johnston & O'Malley, 1985) are reliable, particularly when participants are assured of the confidentiality of their responses. Second, analyses in the current study were correlational in nature, thus precluding the ability to show causal relationships between disparity and drinking variables. However, as the first study to examine the effects of injunctive disparity between two important personal influences, correlational data still yields valuable insight into the motivations for college drinking.

#### 4.2. Conclusions

In conclusion, this study found that the disparity between the perceived drinking attitudes of peers versus parents was significantly correlated with individual drinking and consequences over and above well-known correlates. Analyses of gender differences found that injunctive disparity interacted with gender such that increased disparity was associated with increased drinking in men. These results suggest that disparity between the alcohol related attitudes of close friends and parents may be an important new factor in understanding the motivations that lead to college student drinking, and that interventions that reduce this perceived disparity may be beneficial in reducing risky college drinking and consequences.

### Acknowledgments

This research was funded by a grant from the National Institute of Alcohol Abuse and Alcoholism (NIH/NIAAA R01 AA 012547-06A2).

#### Role of Funding Sources



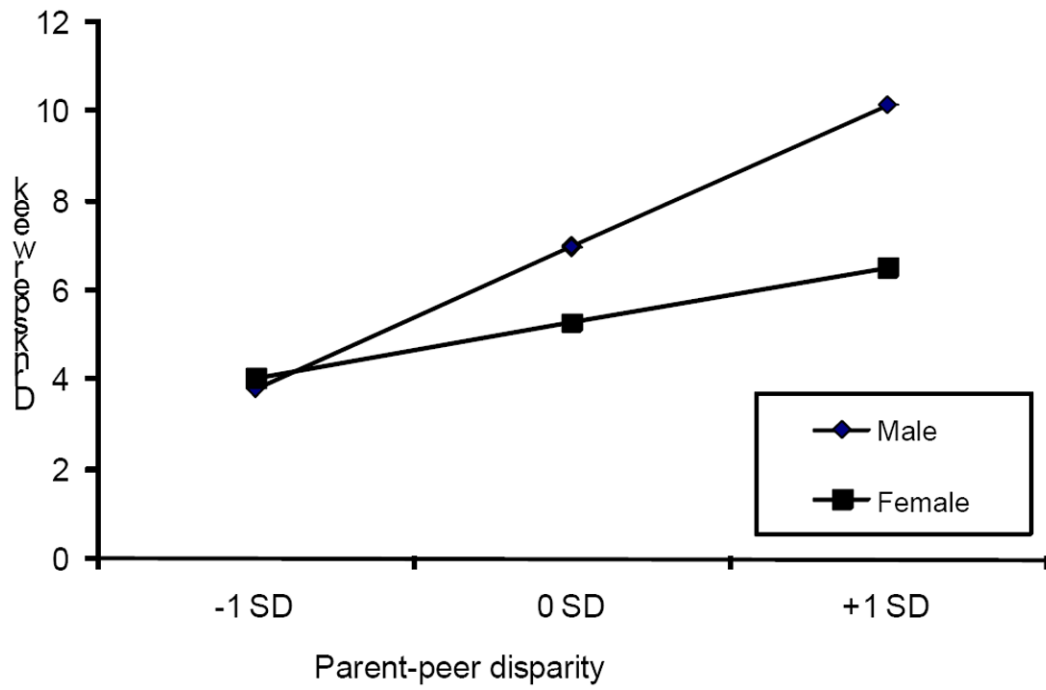
This study was funded by National Institute of Alcohol Abuse and Alcoholism grant R01-AA012547. The National Institute of Alcohol Abuse and Alcoholism had no role in the study design, collection, analysis or interpretation of the data, writing the manuscript, or the decision to submit the paper for publication.

## References

- Abar C, Turrisi R. How important are parents during the college years? A longitudinal perspective of indirect influences parents yield on their college teens' alcohol use. *Addictive Behaviors*. 2008; 33:1360–1368. [PubMed: 18635318]
- Aiken, LS.; West, SG. *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA, US: Sage Publications, Inc; 1991.
- Babor TF, Steinberg K, Anton R, Del Boca F. Talk is cheap: Measuring drinking outcomes in clinical trials. *Journal of Studies on Alcohol*. 2000; 61:55–63. [PubMed: 10627097]
- Baer JS. Effects of college residence on perceived norms of alcohol consumption: An examination of the first year in college. *Psychology of Addictive Behaviors*. 1994; 8:43–50.
- Baer JS, Stacy A, Larimer ME. Biases in the perception of the drinking norms among college students. *Journal of Studies on Alcohol*. 1991; 52:580–586. [PubMed: 1758185]
- Barnes GM, Hoffman JH, Welte JW, Farrell MP, Dintcheff BA. Effects of parental monitoring and peer deviance on substance use and delinquency. *Journal of Marriage and Family*. 2006; 68:1084–1104.
- Berkowitz, AD. *The social norms approach: Theory, research, and annotated bibliography*. 2004. Retrieved from [http://www.alanberkowitz.com/articles/social\\_norms.pdf](http://www.alanberkowitz.com/articles/social_norms.pdf)
- Birch DA, O'Toole TP, Kanu AJ. Health discussions between college students and parents: Results of a Delphi study. *Journal of the American College Health Association*. 1997; 46:139–143.
- Borsari B, Carey KB. Descriptive and injunctive norms in college drinking: A meta-analytic integration. *Journal of Studies on Alcohol*. 2003; 64:331–341. [PubMed: 12817821]
- Borsari B, Murphy JG, Barnett NP. Predictors of alcohol use during the first year of college: Implications for prevention. *Addictive Behaviors*. 2007; 32:2062–2086. [PubMed: 17321059]
- Brook JS, Whiteman M, Finch S, Cohen P. Longitudinally foretelling drug use in the late twenties: Adolescent personality and social-environmental antecedents. *Journal of Genetic Psychology*. 2000; 161:37–51. [PubMed: 10705583]
- Chawla N, Neighbors C, Lewis MA, Lee CM, Larimer ME. Attitudes and perceived approval of drinking as mediators of the relationship between the importance of religion and alcohol use. *Journal of Studies on Alcohol and Drugs*. 2007; 68:410–418. [PubMed: 17446981]
- Cho H. Influences of norm proximity and norm types on binge and non-binge drinkers: Examining the under-examined aspects of social norms interventions on college campuses. *Journal of Substance Use*. 2006; 11:417–429.
- Collins RL, Parks GA, Marlatt GA. Social determinants of alcohol consumption: The effects of social interaction and model status on the self-administration of alcohol. *Journal of Consulting and Clinical Psychology*. 1985; 53:189–200. [PubMed: 3998247]
- Coombs RH, Paulson MJ, Richardson MA. Peer vs. parental influence in substance use among hispanic and anglo children and adolescents. *Journal of Youth and Adolescence*. 1991; 20:73–88.
- D'Amico EJ, Ellickson PL, Wagner EF, Turrisi R, Fromme K, Ghosh-Dastidar B, et al. Developmental considerations for substance use interventions from middle school through college. *Alcoholism: Clinical and Experimental Research*. 2005; 29:474–483.
- Hingson RW, Heeren T, Winter M, Wechsler H. Magnitude of alcohol-related mortality and morbidity among US college students ages 18-24: Changes from 1998 to 2001. *Annual Review of Public Health*. 2005; 26:259–279.
- Johnston, L.; O'Malley, P. *Issues of validity and population coverage in student surveys of drug use*. Washington, DC: National Institute of Drug Abuse; 1985. No. DHHS Publication No. ADM 85-1402
- Jones DJ, Hussong AM, Manning J, Sterrett E. Adolescent alcohol use in context: The role of parents and peers among African American and European American youth. *Cultural Diversity and Ethnic Minority Psychology*. 2008; 14:266–273. [PubMed: 18624591]

- Kivlahan DR, Marlatt GA, Fromme K, Coppel DB, Williams E. Secondary prevention with college drinkers: Evaluation of an alcohol skills training program. *Journal of Consulting and Clinical Psychology*. 1990; 58:805–810. [PubMed: 2292630]
- Korcuska JS, Thombs DL. Gender role conflict and sex-specific drinking norms: Relationships to alcohol use in undergraduate women and men. *Journal of College Student Development*. 2003; 44:204–216.
- Lapsley DK, Rice KG, Shadid GE. Psychological separation and adjustment to college. *Journal of Counseling Psychology*. 1989; 36:286–294.
- Lee CM, Geisner IM, Lewis MA, Neighbors C, Larimer ME. Social motives and the interaction between descriptive and injunctive norms in college student drinking. *Journal of Studies on Alcohol and Drugs*. 2007; 68:714–721. [PubMed: 17690805]
- Lewis MA, Neighbors C. Gender-specific misperceptions of college student drinking norms. *Psychology of Addictive Behaviors*. 2004; 18:334–339. [PubMed: 15631605]
- Lewis TF. Perceptions of risk and sex-specific social norms in explaining alcohol consumption among college students: Implications for campus interventions. *Journal of College Student Development*. 2007; 48:297–310.
- Lo CC. Gender differences in collegiate alcohol use. *Journal of Drug Issues*. 1995; 25:817–836.
- Lopez FG, Campbell VL, Watkins CE. Depression, psychological separation, and college adjustment: An investigation for sex differences. *Journal of Counseling Psychology*. 1986; 33:52–56.
- Midanik LT. Validity of self-report alcohol use: a literature review and assessment. *British Journal of Addictions*. 1988; 83:1019–1030.
- Neighbors C, Lee CM, Lewis MA, Fossos N, Larimer ME. Are social norms the best predictor of outcomes among heavy-drinking college students? *Journal of Studies on Alcohol and Drugs*. 2007; 68:556–565. [PubMed: 17568961]
- Neighbors C, O'Connor RM, Lewis MA, Chawla N, Lee CM, Fossos N. The relative impact of injunctive norms on college student drinking: The role of reference group. *Psychology of Addictive Behaviors*. 2008; 22:576–581. [PubMed: 19071984]
- Perkins HW. Social norms and the prevention of alcohol misuse in collegiate contexts. *Journal of Studies on Alcohol*. 2002; (Supp No. 14):164–172.
- Perkins HW, Haines MP, Rice R. Misperceiving the college drinking norm and related problems: A nationwide study of exposure to prevention information, perceived norms and student alcohol misuse. *Journal of Studies on Alcohol*. 2005; 66:470–478. [PubMed: 16240554]
- Perkins HW, Meilman PW, Leichter JS, Cashin JR, Presley CA. Misperceptions of the norms for the frequency of alcohol and other drug use on college campuses. *Journal of American College Health*. 1999; 47:253–258. [PubMed: 10368559]
- Read JP, Wood MD, Davidoff OJ, McLacken J, Campbell JF. Making the transition from high school to college: The role of alcohol-related social influence factors in students' drinking. *Substance Abuse*. 2002; 23(1):53–65. [PubMed: 12444360]
- Rimal RN. Modeling the relationship between descriptive norms and behaviors: A test and extension of the theory of normative social behavior (TNSB). *Health Communication*. 2008; 23:103–116. [PubMed: 18443998]
- Thombs DL, Ray-Tomasek J, Osborn CJ, Olds RS. The role of sex-specific normative beliefs in undergraduate alcohol use. *American Journal of Health Behavior*. 2005; 29:342–351. [PubMed: 16006231]
- Turrisi R, Jaccard J, Taki R, Dunnam H, Grimes J. Examination of the short-term efficacy of a parent intervention to reduce college student drinking tendencies. *Psychology of Addictive Behaviors*. 2001; 15:366–372. [PubMed: 11767270]
- Turrisi R, Mastroleo NR, Mallett KA, Larimer ME, Kilmer JR. Examination of the mediational influences of peer norms, environmental influences, and parent communications on heavy drinking in athletes and nonathletes. *Psychology of Addictive Behaviors*. 2007; 21:453–461. [PubMed: 18072827]
- Turrisi R, Wiersma KA, Hughes KK. Binge-drinking-related consequences in college students: Role of drinking beliefs and mother-teen communications. *Psychology of Addictive Behaviors*. 2000; 14:342–355. [PubMed: 11130153]

- Wechsler H, Lee JE, Kuo M, Lee H. College binge drinking in the 1990s: A continuing problem: Results of the Harvard School of Public Health 1999 College Alcohol Study. *Journal of American College Health*. 2000; 48:199–210. [PubMed: 10778020]
- Wechsler H, Moeykens B, Davenport A, Castillo S. The adverse impact of heavy episodic drinkers on other college students. *Journal of Studies on Alcohol*. 1995; 56:628–634. [PubMed: 8558894]
- White HR, Labouvie EW. Towards the assessment of adolescent problem drinking. *Journal of Studies on Alcohol*. 1989; 50:30–37. [PubMed: 2927120]
- Wood MD, Read JP, Mitchell RE, Brand NH. Do parents still matter? Parent and peer influences on alcohol involvement among recent high school graduates. *Psychology of Addictive Behaviors*. 2004; 18:19–30. [PubMed: 15008682]



**Figure 1.**  
Gender moderates the effect of parent-peer disparity on individual drinking.

**Table 1**

Mean differences between males and females on key variables

Variable	All		Females		Males		Males vs Females	
	M	(SD)	M	(SD)	M	(SD)	F	
Injunctive disparity	.95	.85	.87	.78	1.07	.92	45.88	***
Drinks per week	6.26	8.75	4.68	5.88	8.76	11.54	183.73	***
Consequences past month	2.47	4.73	2.29	4.01	2.76	5.68	7.89	**
Perceived descriptive norms	13.11	9.27	10.84	6.41	16.76	11.68	355.24	***

\*  $p < .05$ .\*\*  $p < .01$ .\*\*\*  $p < .001$ .

**Table 2**

Correlations between variables for males (upper right half) and females (lower left half)

Variable	1	2	3	4
1 Injunctive disparity	--	.331***	.199***	.206***
2 Drinks per week	.218***	--	.445***	.370***
3 Consequences past month	.162***	.514***	--	.112***
4 Perceived descriptive norms	.141***	.250***	.130***	--

\* p < .05.

\*\* p < .01.

\*\*\* p < .001.

Regression results evaluating individual drinking and consequences as a function of gender, disparity and perceived same-sex drinking norms

**Table 3**

Drinks per week	At Step		Final Model			
	R <sup>2</sup>	FIR <sup>2</sup>	B	SE	$\beta$	d
Step 1:	.205	.205				
Gender			-.830	.144	-.095***	.10
Perceived descriptive norms			2.517	.142	.292***	.29
Perceived disparity			1.988	.152	.209***	.22
Step 2:	.215	.010				
Perceived disparity × Gender			-.951	.145	-.105***	.11
RAPI consequences						
Step 1:	.222	.222				
Gender			.244	.078	.052**	.05
Perceived descriptive norms			-.183	.084	-.038*	.04
Perceived disparity			.314	.085	.061***	.06
Drinks per week			2.229	.081	.474***	.43
Step 2:	.222	.222				
Perceived disparity × Gender			.101	.079	.020	.02

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .