



Association of Attractiveness and Popularity with Binge Drinking in Young Adults

Netta Levran

Abstract

This study assessed the relationship between perceived physical attractiveness, perceived popularity, and the level of binge drinking among a nationally representative sample of young adults aged 18 to 26. The level of binge drinking was uniquely associated with popularity, attractiveness, sex, and the interaction between popularity and attractiveness. Drinkers who were popular or attractive binge drank more than those who were not popular or attractive, respectively, with the exception of female drinkers, whose perceived attractiveness did not contribute to their level of binge drinking. There was an interaction between attractiveness and popularity suggesting that if males or females are not attractive, their popularity is associated with their binge drinking. If they are attractive, their popularity is not associated with their binge drinking. Although none of the differences in levels of binge drinking were large in magnitude, recommendations are discussed for the consideration of the inclusion of popularity and attractiveness in prevention programs aimed at curbing binge drinking in young adults.

Introduction

During recent decades, numerous studies have documented increasing rates of binge drinking among college students (e.g., Pirkle & Richter, 2006). There have been many hypotheses put forth about the rise in binge drinking, especially among females, for whom the rates have risen much more drastically (Pirkle & Richter, 2006; Zilberman, Tavares, & el-Guebaly, 2003). The phenomenon might be the result of the increased recognition of alcohol as a socially acceptable substance, and the fact that those who drink alcohol tend to have higher social skills and are prone to being more popular (Diego, Field, & Sanders, 2003). Alternately, popular young adults might have influenced others into believing that drinking is desirable in order to be socially accepted.

According to Wechsler, Dowdall, Davenport, and Castillo (1995), binge drinking has a wide range of negative health effects for young adults, and the consequences of engaging in this risky behavior are often irreversible. Its emergence as a national public health concern has increased

the importance of discovering the factors that influence an individual's propensity to binge drink so that the problem can be adequately and effectively addressed.

There is no established definition of binge drinking, possibly because researchers are wary of classifying young adult binge drinking as alcoholism and prefer to classify it as a social phenomenon (Wechsler et al., 1995). Consequently, the definition of binge drinking is inconsistent between studies. Binge drinkers have been defined as individuals who consume five to six drinks, two to three times a week, and become drunk often or always (Thombs, Beck, & Mahoney, 1993); more than five drinks in a few hours in the past month (Pirkle & Richter, 2006); or just a drink per week in the past three months (Lewis, Phillippi, & Neighbors, 2007).

There has also been no consistent method of rating participants' attractiveness and popularity. Like this study, several previous studies used self-ratings. Some studies using self-rating methods have used a ten-point scale to define attractiveness (Page, 1993), while other studies have used photographs of subjects and had them independently ranked for attractiveness by other students (McCall, 1997; Noles, Cash, & Winstead, 1985), had two interviewers assess participants' attractiveness on a seven-point scale (Burns & Farina, 1987), or had four interviewers assess participants' attractiveness on a fifteen-point scale (O'Grady, 1982). To assess popularity, some studies analyzed social status using the NEGOPY (negative entropy) program to identify friendship groups by linking individuals to their groups of friends (Michell & Amos, 1997), used a twelve-question scale (Santor, Messervey, & Kusumakar, 2000), or used a four-point scale (Diego et al., 2003).

The relationship between substance abuse and numerous social factors have been examined: peer pressure, popularity, and conformity (Santor et al., 2000); morally based self-esteem and drinking motives (Lewis et al., 2007); personality, attitudinal, and behavioral risk profiles (Pirkle & Richter, 2006); social context (Thombs et al., 1993); and academic performance, body image, and depression (Diego, et al., 2003; Noles et al., 1985).

In addition, there have been many studies that have examined the association of physical attractiveness and popularity with substance abuse (Diego et al., 2003; McCall, 1997; Michell & Amos, 1997; Noles et al., 1985; O'Grady, 1982; Page, 1993; Santor et al., 2000; Wechsler et al., 1995). Some studies have reported a positive association between both the popularity and attractiveness of individuals and their engagement in substance abuse (Diego et al., 2003; Michell & Amos, 1997; Pirkle & Richter, 2006; Santor et al., 2000; Wechsler et al., 1995), while other studies have failed to support this association (Page, 1993) or have demonstrated a negative association (O'Grady, 1982). For example, based on a random sample of young girls and college-aged women from urban and rural areas who attend different types of schools, Pirkle and Richter (2006) found that young females who binge drank and smoked nicotine were much more likely to be very popular or somewhat popular compared to females who did not smoke nicotine or binge drink. In addition, they were not able to statistically analyze the binge drinkers that said they were not popular because the sample was so small. Based on a nationally representative sample of accredited 4-year colleges, Wechsler et al. (1995) found that those who valued socializing, and spent more than 2 hours a day talking to friends or had five or more close friends, were more likely to binge drink than those who did not. In contrast, in a study drawn from 12 schools in a northwestern state, Page (1993) found no significant relationship between physical attractiveness and the use of alcohol or cigarettes for either males or females. Based on a sample of females and males at a large northeastern university, O'Grady (1982) found that less attractive individuals believe they are more at risk for mental disorders, including alcohol abuse, because they have to cope with a more hostile social environment than their more attractive peers do.

Studies have consistently shown that physical attractiveness is positively related to social status (Michell & Amos, 1997; Page, 1993), and that attractive individuals have an advantage in social situations over their less attractive peers (O'Grady, 1982).

Previous research has rarely examined these associations within nationally representative samples of young adults. Furthermore, the role of sex has not yet been examined, which may differently affect the association between binge drinking and popularity and/or attractiveness. This potential difference is important when considering the implications it may have for the methods used to address the public health issue of the increase in young adult binge drinking. This study hypothesizes that popularity and attractiveness will be positively associated with binge drinking due to the fact that drinking has become an important factor in maintaining a popular image for college-aged individuals. In addition, it is hypothesized that popular and attractive females would engage in relatively riskier behaviors than their male counterparts.

Methods

Sample

The National Longitudinal Study of Adolescent Health (Add Health) selected a nationally representative school-based sample of adolescents who were enrolled in grades 7 through 12 during the 1994-1995 school year (Harris et al., 2008). Using systematic sampling methods and implicit stratification, where a sample is selected from a list sorted by some characteristic(s) using a fixed sampling interval and a random start, a representative sample of 80 high schools and 52 middle schools was selected. The study design guaranteed that the sample was representative of US schools with respect to region of country, urbanicity, school size, school type, and ethnicity. Add Health combined the longitudinal survey data on respondents' social, economic, psychological and physical well-being with data about their social environments and behavior. Data included questionnaires for parents, siblings, fellow students, school administrators, and romantic partners as well as information about neighborhoods and communities compiled using preexisting databases. This information was analyzed to access the relationship between social environments and behavior on health and achievement outcomes.

In total, 90,118 students completed an in-school questionnaire. Sub-samples ranging from 15,197 to 20,745 respondents were chosen to complete more intensive in-home surveys in 1994-1995 (Wave I), 1996 (Wave II), 2001-2002 (Wave III), and 2007-2008 (Wave IV).

The data set used in this study includes questionnaires from 4,882 of the 15,197 Wave III in-home respondents, who were interviewed between the ages of 18 to 26 (Harris, 2008). The focus of Wave III was to examine the effects of adolescent experiences and behaviors on respondents' decisions, behaviors, and health in early adulthood.

Measures

Binge drinking was defined as having consumed five or more drinks in a row. Although some studies recommend using a lower benchmark for females, the female responses to the questions: "in the past 12 months how many times have you drank more than 5 drinks in a row?" and "in the past 12 months how many times have you been drunk?", were not significantly different. If there were an appropriate lower benchmark for females, there would have been a statistically significant difference between the two questions, because females would have been drunk even when they did not have more than five drinks in a row. Consequently, in this study a binge drinking variable of consuming five or more drinks in a row is considered adequate for women as well. Binge drinking was ranked on the following 1-to-6 scale: one or two days in the

past 12 months, once a month, two or three days a month, one or two days a week, three to five days a week, and every day or almost every day.

Popularity was self-assessed. Respondents could categorize themselves on the following 1-to-4 popularity scale: not at all popular, slightly popular, moderately popular, or very popular.

Attractiveness was also self-assessed. Respondents could categorize themselves on the following 1-to-4 attractiveness scale: not at all attractive, slightly attractive, moderately attractive, or very attractive.

Analyses

Bivariate analyses were used to identify whether an association exists between popularity and binge drinking, and between attractiveness and binge drinking. Logistic regression was used to identify significant correlates of binge drinking and to estimate the strength of the relationship between attractiveness and popularity and the level of binge drinking. Sex and the interaction between attractiveness and popularity were included in the logistic regression model as covariates. The Duncan Multiple Range Test was used in order to understand the level of significance among different groups of binge-drinkers. Analyses were performed using the 18 to 26 year-old population and a subgroup of 18 to 22 year-olds. In addition, analyses were performed using a male subgroup and a female subgroup.

Results

General Statistics

A total of 32.85% ($n = 774$) of people who binge drank did so on one or two days in the past 12 months, 21.18% ($n = 499$) did so once a month, 19.19% ($n = 452$) did so two or three days a month, 19.31% ($n = 455$) did so one or two days a week, 5.86% ($n = 138$) did so three to five days a week, and 1.6% ($n = 38$) did so every day or almost every day (see Table 1, Figures 1 & 2).

TABLE 1
Descriptive statistics of study participants

Variable	Number	Mean	Standard Deviation	Minimum	Maximum
Popularity	4716	2.967	0.761	1	4
Males	2167	3.023	0.776	1	4
Females	2549	2.919	0.746	1	4
Attractiveness	4754	3.071	0.728	1	4
Males	2184	3.079	0.732	1	4
Females	2570	3.065	0.725	1	4
Binge Level	2356	2.490	1.356	1	6
Males	1307	2.779	1.380	1	6
Females	1049	2.130	1.235	1	6

FIGURE 1
Binge level distribution among drinkers

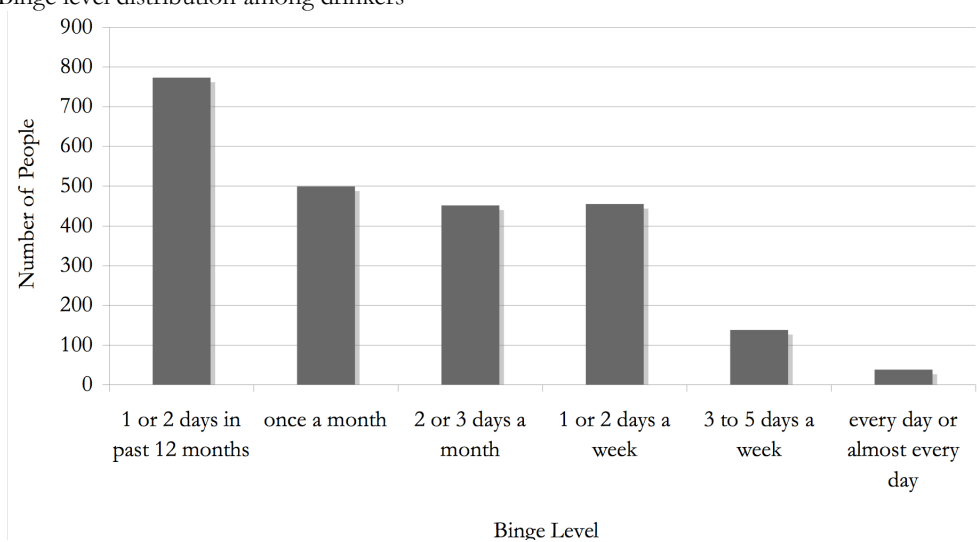
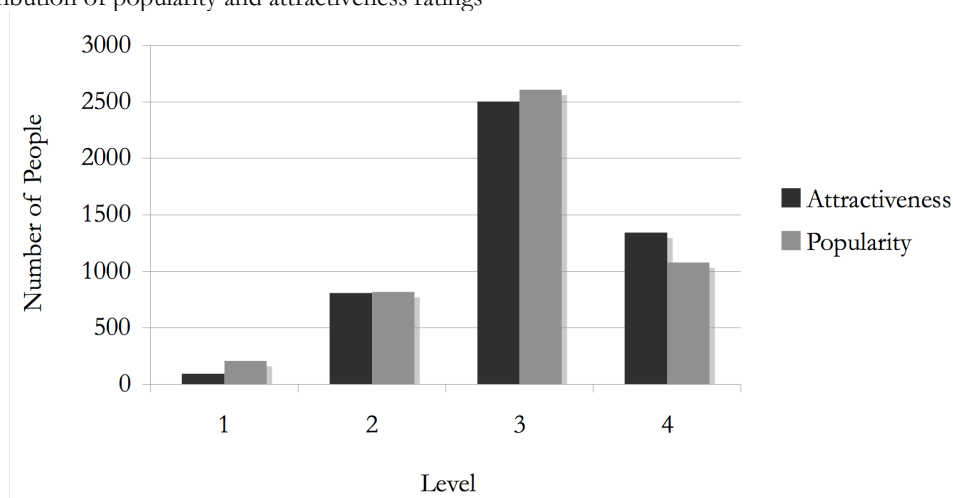


FIGURE 2
Distribution of popularity and attractiveness ratings



There was an 80% overlap between the variables that addressed the frequency that participants reported that they binge drank or were drunk. Among those who reported that they had been drunk, 84% also binge drank. Among those who reported to binge, 88% reported having been drunk.

There was an 85% overlap between the variables that addressed popularity and attractiveness. Among those who reported to be very popular, 94.15% reported to be very

attractive or moderately attractive. Among those who reported to be not at all attractive or slightly attractive, 87.5% reported to be not at all popular or slightly popular.

18 to 26 Year-Old Population

The association of attractiveness and popularity with binge drinking was examined after controlling for gender and the interaction of popularity and attractiveness, popularity and sex, and attractiveness and sex. The level of binge drinking was found to be uniquely associated with popularity, attractiveness, sex, and the interaction between popularity and attractiveness (see Table 2).

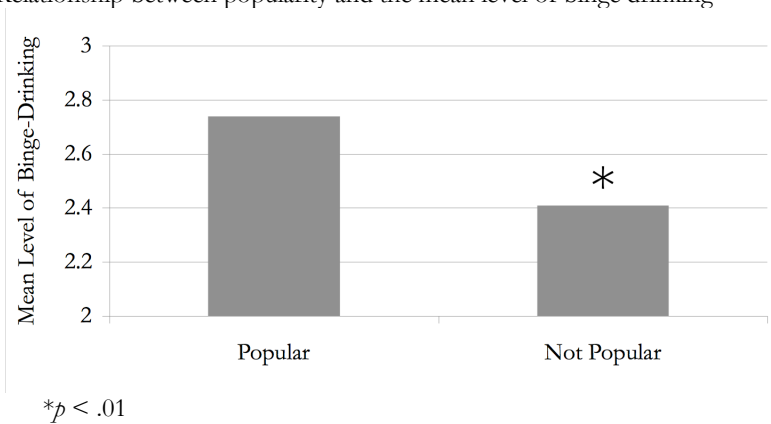
TABLE 2
18 to 26 year-old population

Variables	Standard Error	t-value	p-value
Popularity	0.144	4.96	<.0001
Attractiveness	0.147	3.11	0.0019
Sex	0.220	-2.21	0.0270
Popsex*	0.064	-0.16	0.8731
Attractsex*	0.067	-1.26	0.2082
Popattract*	0.034	-4.51	<.0001

*Popsex is the interaction between popularity and sex. Attractsex is the interaction between attractiveness and sex. Popattract is the interaction between popularity and attractiveness.

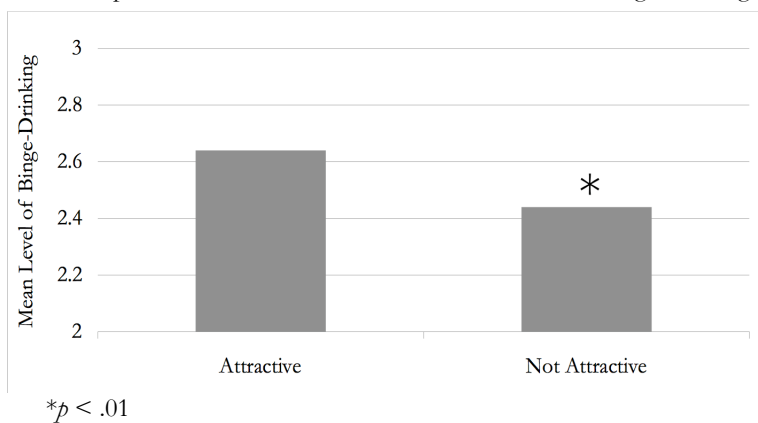
Among drinkers, perceived popularity was significantly associated with the mean level of binge drinking ($F(1) = 24.45, p < 0.0001$). Very popular respondents' binge drinking level ($M = 2.74$) was significantly higher than the moderately, slightly, or not at all popular respondents' level ($M = 2.41$) (see Figure 3).

FIGURE 3
Relationship between popularity and the mean level of binge drinking



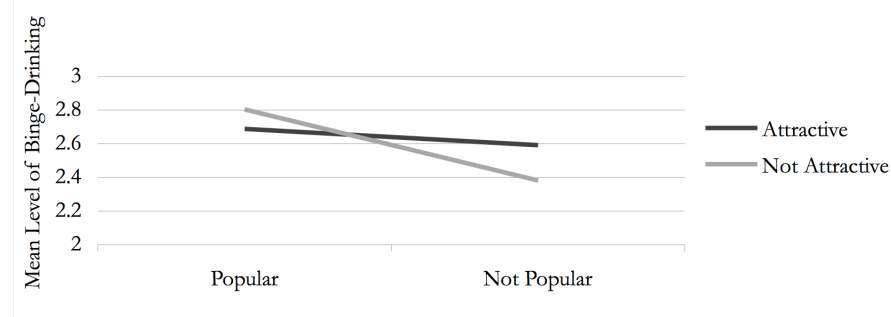
In addition, perceived attractiveness significantly interacted with the mean level of binge drinking ($F(1) = 8.92, p = 0.0029$). Very attractive respondents' binge drinking level ($M = 2.64$) was significantly greater than the moderately, slightly, and not at all attractive respondents' level ($M = 2.44$) (see Figure 4).

FIGURE 4
Relationship between attractiveness and the mean level of binge drinking



Further examination of the interaction between attractiveness and popularity suggested that for unattractive young adults, popularity was associated with binge drinking ($F(1) = 23.20, p < 0.0001$). Moderately, slightly, or not at all attractive participants who were popular binge drank at a significantly higher level ($M = 2.80$) than the mean binge drinking level of those who were not popular ($M = 2.38$). However, for very attractive young adults, popularity was not associated with binge drinking (see Figure 5).

FIGURE 5
Relationship between attractiveness, popularity, and the mean level of binge drinking



Sex Differences (Age 26 and Below)

When the interaction of sex with popularity and attractiveness in predicting binge drinking was taken into account, the mean level of drinking among males was greater. For unattractive male drinkers, popularity was found to be associated with binge drinking ($F(1) = 10.02, p < 0.0016$). Moderately, slightly, or not at all attractive male respondents who were popular binge drank at a significantly higher level ($M = 3.02$) than the mean binge drinking level of those who were not popular ($M = 2.67$).

Popularity was also associated with binge drinking for unattractive female drinkers ($F(1) = 6.86, p < 0.009$). Moderately, slightly, or not at all attractive popular female respondents' binge drinking level ($M = 2.41$) was significantly greater than that of unattractive unpopular female respondents ($M = 2.06$).

Popularity was not associated with binge drinking for very attractive males or females.

Sex Differences (Age 22 and Below)

The association of attractiveness and popularity with binge drinking was examined after controlling for sex and the interaction of popularity and attractiveness, popularity and sex, and attractiveness and sex for respondents under the age of 22. The level of binge drinking was found to be uniquely associated with popularity, attractiveness, and the interaction between popularity and attractiveness. Sex was no longer significant (see Table 3).

Among drinkers, perceived popularity was significantly associated with the mean level of binge drinking ($F(1) = 17.95, p < 0.0001$). Very popular respondents' binge drinking level ($M = 2.78$) was significantly higher than the unpopular respondent's level ($M = 2.42$).

In addition, perceived attractiveness significantly interacted with the mean level of binge drinking ($F(1) = 4.81, p < 0.0285$). Attractive respondents' binge drinking level ($M = 2.64$) was significantly greater than that of unattractive respondents ($M = 2.46$).

The interaction between attractiveness and popularity still suggests that if one is not attractive, popularity is associated with binge drinking ($F(1) = 14.66, p < 0.0001$). Unattractive but popular participants binge drank at a significantly higher level ($M = 2.83$) than the mean binge drinking level of unattractive participants who were not popular ($M = 2.40$).

Popularity was not associated with binge drinking for very attractive respondents under 22.

Discussion

This study examined self-perception of attractiveness and popularity in order to evaluate the association between these constructs and binge drinking. Four major findings emerged: 1) Attractiveness was positively associated with the mean level of binge drinking; 2) Popularity was positively associated with the mean level of binge drinking; 3) For unattractive individuals, there was an association between binge drinking and popularity, while for attractive individuals there was no association; 4) Sex was uniquely associated with binge drinking for the 18 to 26 year-old population, and males drank more than females. However, for the college-aged subgroup of 18 to 22 year-olds, sex was no longer uniquely associated with binge drinking.

Considering the high correlation between attractiveness and popularity (Page, 1993; this study), a possible explanation for this study's findings is that binge drinking can be used as a means to attain social acceptance. High social status is usually accompanied by socially conventional behavior, and much of the young adult culture in the US sees binge drinking as an activity partaken by attractive and popular individuals. Binge drinking was associated with popularity only for unattractive individuals, which might be because drinking has become a way for unattractive individuals to gain popularity. By drinking more, unattractive individuals can be accepted by their attractive peers who have automatically become popular based on their good looks.

The two constructs, attractiveness and popularity, were measured using participants' self-ratings. Although it was possible to use the interviewers' ratings of personality and attractiveness, this study used self-ratings due to the hypothesis that self-perceptions of popularity and attractiveness would yield a stronger association with binge drinking than others' perceptions. Add Health's assessment of popularity and attractiveness was somewhat limited compared to previous work that measured these variables with more depth. In particular, it had fewer questions about popularity, so it was not possible to assess popularity as an aggregate score of multiple questions (Harris, 2008).

According to Wechsler et al. (1995), it is critical to take into account gender when categorizing binge drinking and thus, they defined binge drinking as five or more drinks in a few hours in the past two weeks, for males, while only four or more drinks for females. However, in this study, there was a high correlation between subject's reported frequency of binge drinking (five or more drinks) and their reported frequency of being drunk, thus the five drinks definition is applicable for females as well. If four drinks for females were a better benchmark for binge drinking, the study would have expected to find a higher percentage of people that reported to be drunk than those who reported to binge drink. In addition, the finding that there was no association between sex and binge drinking for college-aged respondents is further evidence that younger females are drinking at a comparable level to males. Nevertheless, it would have been helpful to include a lower female binge benchmark question in the questionnaire to examine if the responses altered the results.

The fact that binge drinking has become such a central aspect of socializing is worrisome because of the negative consequences associated with binge drinking. With young adults engaging in frequent heavy drinking to interact with their peers, it becomes harder to distinguish those who are drinking to socialize from those who are drinking to deal with serious psychological issues. The fact that binge drinking is considered "cool" or desirable (Pirke & Richter, 2006) should be a serious mental health concern, and further research is necessary to determine the best way to address the problem. This study suggests that action needs to be taken to alter the appealing image of binge drinking in order to reduce young adult drinking. This corresponds with Pirke and Richter's (2006) suggestion that substance-use prevention programs should seek to

redefine social norms by starting with popular participants. Popular individuals are more likely to set norms, but at the same time they are also more likely to conform to them. In order to change the social standards it is important to change the perception of binge drinking.

Although the findings of this study begin to paint a picture of the social context in which young adult binge drinking occurs, there are still important limitations that need to be taken into account when drawing conclusions from the study. Firstly, the findings from this study were based solely on self-ratings. It is difficult to ensure that participants were completely honest when reporting their drinking habits, attractiveness, and popularity. Secondly, this study did not take into account subjects' situational factors such as their living conditions, school enrollment, and employment status. Finally, the large sample size makes it possible that the sample was overpowered. The findings might be less clinically or practically meaningful because although they reached statistical significance, they were not large in magnitude. However, this is not a question that a statistical test can answer. On the other hand, the fact that Add Health uses a nationally representative sample is a strength, because it includes a much broader sample than other studies, by incorporating people of different economic, social, racial, and geographic backgrounds.

Future studies should examine the relationship between individuals' drinking habits and their self-assessments of their popularity and attractiveness versus their peers' perceptions of these variables. This supplementary data could help assess if low self-confidence in one's popularity and attractiveness increases drinking. In addition, studies could incorporate popularity and attractiveness in bigger models that include more variables that may influence binge drinking. For example, it would be interesting to study whether situational factors, such as a college setting, or personal characteristics, such as family history or attractiveness, affect binge drinking. Most importantly, there is a serious need to find effective ways to alter young adults' perceptions of binge drinking. Once more research is done on the topic of young adult binge drinking it may be possible to evaluate different approaches in order to weaken its appeal.

Acknowledgments

This research uses data from Add Health, a program project designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris, and funded by a grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 17 other agencies. Special acknowledgment is due to Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Persons interested in obtaining data files from Add Health should contact Add Health, Carolina Population Center, 123 W. Franklin Street, Chapel Hill, NC 27516-2524 (addhealth@unc.edu). No direct support was received from grant P01-HD31921 for this analysis.

Netta Levran is currently a junior Economics and Psychology major at Wesleyan University. She originally wrote this paper for a Research Methods in Clinical Psychology class with Professor Lisa Dierker, and would like to acknowledge Professor Dierker for all her help. She would also like to thank Luci Cassella, Uruj Kamal, Leah Lucid, Stephanie Ross, and the Mind Matters staff for all their time and effort. Correspondence may be addressed to nlevran@wesleyan.edu

References

- Burns, G. L., & Farina, A. (1987). Physical attractiveness and self-perception of mental disorder. *Journal of Abnormal Psychology*, *96*(2), 161-163.
- Diego, M. A., Field, T. M., & Sanders, C. E. (2003). Academic performance, popularity, and depression predict adolescent substance use. *Adolescence*, *38*(149), 35-43.
- Harris, K., Halpern, C., Entzel, P., Tabor, J., Bearman, P., & Udry, J. (2008). *The National Longitudinal Study of Adolescent Health: Research Design*. URL: <http://www.cpc.unc.edu/projects/addhealth/design>
- Harris, K., & Halpern (2008). The National Longitudinal Study of Adolescent Health (Add Health), Wave III, 2001-2002 [machine-readable data file and documentation]. Chapel Hill, NC: Carolina Population Center, University of North Carolina at Chapel Hill.
- Lewis, M. A., Phillippi, J., & Neighbors, C. (2007). Morally based self-esteem, drinking motives, and alcohol use among college students. *Psychology of Addictive Behaviors*, *21*(3), 398-403.
- McCall, M. (1997). Physical attractiveness and access to alcohol: What is beautiful does not get carded. *Journal of Applied Social Psychology*, *27*(5), 453-462.
- Michell, L., & Amos, A. (1997). Girls, pecking order and smoking. *Social Science & Medicine*, *44*(12), 1861-1869.
- Noles, S. W., Cash, T. F., & Winstead, B. A. (1985). Body image, physical attractiveness, and depression. *Journal of Consulting & Clinical Psychology*, *53*(1), 88-94.
- O'Grady, K. E. (1982). Sex, physical attractiveness, and perceived risk for mental illness. *Journal of Personality and Social Psychology*, *43*(5), 1064-1071.
- Page, R. M. (1993). Perceived physical attractiveness and frequency of substance use among male and female adolescents. *Journal of Alcohol and Drug Education*, *38*(2), 81-91.
- Pirkle, E. C., & Richter, L. (2006). Personality, attitudinal and behavioral risk profiles of young female binge drinkers and smokers. *Journal of Adolescent Health*, *38*(1), 44-54.
- Santor, D. A., Messervey, D., & Kusumakar, V. (2000). Measuring peer pressure, popularity, and conformity in adolescent boys and girls: Predicting school performance, sexual attitudes, and substance abuse. *Journal of Youth and Adolescence*, *29*(2), 163-182.
- Thombs, D. L., Beck, K. H., & Mahoney, C. A. (1993). Effects of social context and gender on drinking patterns of young adults. *Journal of Counseling Psychology*, *40*(1), 115-119.
- Wechsler, H., Dowdall, G. W., Davenport, A., & Castillo, S. (1995). Correlates of college student binge drinking. *American Journal of Public Health*, *85*(7), 921-926.
- Zilberman, M., Tavares, H., el-Guebaly, N. (2003). Gender similarities and differences: the prevalence and course of alcohol- and other substance-related disorders. *Journal of Addictive Diseases*, *22*(4), 61-74.