



Original article

Longitudinal Relationships Between College Education and Patterns of Heavy Drinking: A Comparison Between Caucasians and African-Americans

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A B S T R A C T

Purpose: The current study compared longitudinal relationships between college education and patterns of heavy drinking from early adolescence to adulthood for Caucasians and African-Americans.

Methods: We analyzed data from 9,988 non-Hispanic Caucasian and African-American participants from all four waves of the National Longitudinal Study of Adolescent Health. Growth curve modeling tested differences in rates of change and levels of heavy drinking from ages 13 to 31 years among non-college youth, college withdrawers, 2-year college graduates, and 4-year college graduates, and compared these differences for Caucasians and African-Americans.

Results: There were significant racial differences in relationships between college education with both changes in and levels of heavy drinking. Rates of change of heavy drinking differed significantly across the college education groups examined for Caucasians but not for African-Americans. In addition, Caucasians who graduated from 4-year colleges showed the highest levels of heavy drinking after age 20 years, although differences among the four groups diminished by the early 30s. In contrast, for African-Americans, graduates from 2- or 4-year colleges did not show higher levels of heavy drinking from ages 20 to 31 years than the non-college group. Instead, African-American participants who withdrew from college without an associate's, bachelor's, or professional degree consistently exhibited the highest levels of heavy drinking from ages 26 to 31 years.

Conclusions: The relationship between college education and increased levels of heavy drinking in young adulthood is significant for Caucasians but not African-Americans. Conversely, African-Americans are likely to be more adversely affected than are Caucasians by college withdrawal.

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IMPLICATIONS AND
CONTRIBUTION

This study is the first to examine racial differences in longitudinal relationships between college education and heavy drinking. Findings suggest that in later adulthood, college attendance may not have long-term risks on heavy drinking for Caucasians, whereas African-American college withdrawers may be particularly vulnerable to developing alcohol use problems.

Heavy alcohol use among college-age populations, defined as drinking an excessive amount of alcohol at one sitting and/or drinking to the point of intoxication, remains a serious public health concern. In addition to the immediate risks of heavy drinking (e.g., alcohol poisoning), heavy drinking in adolescence and young adulthood has been associated with broader long-term health consequences, such as increased risks of alcohol

dependence, risky sexual behaviors, and mental health problems [1]. According to the most recent National Survey on Drug Use and Health [2], rates of binge drinking are higher among 21- to 25-year-olds than among either teenagers or adults aged ≥ 26 years. Likewise, longitudinal research indicates that heavy drinking increases during adolescence and peaks during the mid-20s [3–6], which suggests that the transition from high school to college or non-college settings is a critical period for development of alcohol misuse.

Cross-sectional research has documented higher levels of heavy drinking among college students compared with non-college youth [7–12]. For example, data from Monitoring the Future [10–12] indicate that although college-bound high school

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students report lower rates of heavy drinking than their non-college-bound peers, they are more likely to exhibit higher levels of heavy drinking during college years. However, previous work in this area has focused largely on mean-level comparisons between currently enrolled college students and their non-college counterparts, without looking at longitudinal relationships between college education and patterns of heavy drinking.

Only two studies have used nationally representative samples to examine relationships between college education and heavy drinking longitudinally. Based on a subsample of 7,083 participants aged 13–24 years during the first three waves of the National Longitudinal Study of Adolescent Health (Add Health), youth enrolled in 2- or 4-year colleges reported higher levels of binge drinking and different rates of change in binge drinking than non-college youth from their late teens to early 20s [13]. In contrast, the second study, based on 7,859 participants from the National Longitudinal Survey of Youth, found relatively lower levels of heavy drinking from ages 18 to 37 years among individuals with at least some college education than among individuals who did not go to college; the differences were particularly pronounced between the mid-20s and early 30s [3]. This latter finding suggests that the adverse effects of college attendance on heavy drinking during late adolescence and young adulthood commonly found in research using college-aged samples may attenuate, or even reverse, after the mid-20s. This hypothesis is consistent with cross-sectional data collected at age 35 years from Monitoring the Future, which showed that levels of substance use, including heavy drinking, were actually lowest among adults with a college degree compared with both college withdrawers and individuals who did not attend college [14]. The longitudinal study based on Add Health, which measured participants' drinking through only age 24 years, could not assess the long-term effect of college education on heavy drinking in later adulthood. At the same time, the study based on the National Longitudinal Survey of Youth did not measure drinking behaviors before age 18 years. Thus, it is possible that the observed group differences were present before the college years, which may have biased the interpretation of their results. Longitudinal studies beginning in early adolescence and continuing beyond the college years are needed to evaluate the long-term effects of college attendance on heavy drinking throughout adulthood, while considering any preexisting differences among groups.

In addition, neither of the studies examining longitudinal relationships between college education and heavy drinking considered racial/ethnic differences in these associations. There is evidence that motivations for drinking may differ across race/ethnicity. For example, African-Americans are more likely to engage in heavy alcohol use in stressful situations, such as unemployment or low educational attainment [15–18], whereas Caucasians are more likely to be influenced by peer alcohol use and to drink heavily during celebratory events or holidays [19,20]. Given that drinking behaviors among Caucasians may be more strongly influenced by social context, the college setting, where alcohol is readily available and alcohol use is perceived as normative [18], may be more conducive to excessive alcohol use for Caucasians than for African-Americans. Several cross-sectional studies have found that Caucasian college students report higher levels of heavy drinking than their non-college-educated counterparts, but college attendance is inversely related to, or not associated with, heavy drinking among African-American youth [17,20,21]. However, because these studies were

cross-sectional, it is unclear whether the observed racial/ethnic differences were present before young adulthood and/or whether differences persisted beyond the college years.

Using a nationally representative sample, the current study compared longitudinal relationships between college education and patterns of heavy drinking from early adolescence to adulthood for Caucasians and African-Americans. Gender was included as a control variable, given observed differences in levels of and changes in alcohol use and heavy drinking across males and females [5,6,22]. Parental education was also included as a covariate, given its association with both alcohol use [23,24] and academic attainment [25–27]. We compared patterns of heavy drinking among four different groups: non-college youth, college withdrawers, 2-year college graduates, and 4-year college graduates, given prior evidence supporting differences in heavy drinking among these groups [13,21]. Based on findings from previous cross-sectional research, we hypothesize that college education will be more strongly associated with both changes in and levels of heavy drinking for Caucasians than for African-Americans. We did not develop hypotheses about the specific differences across the four college education groups in trajectories of heavy drinking, because there is a lack of theoretical and empirical work considering these between-group differences separately for Caucasians and African-Americans.

Methods

Sample

Data are from Waves I (1994–1995) through IV (2007–2008) of Add Health [28]. Add Health is a population-based, nationally representative sample of adolescents followed longitudinally. Add Health includes youth aged 11–21, 12–22, 18–28, and 24–34 years at Waves I, II, III, and IV, respectively. Current analyses focus on comparisons between the two largest groups: non-Hispanic Caucasians ($N = 10,825$) and non-Hispanic African-Americans ($N = 4,603$).

The present sample was restricted to participants with data on heavy drinking in at least one of the four waves, and who reported college education status in Wave IV ($N = 11,959$). We processed missing data with list-wise deletion, which resulted in a sample of 11,383 participants. In addition, we excluded participants whose reports of educational status were inconsistent ($N = 123$) and participants who were attending school at Wave IV but had not yet achieved any type of degree, because their college completion status remained unknown ($N = 1,272$). Wave I data for 305 participants younger than age 13 years and Wave IV data for 179 participants older than age 31 years were also excluded because sample sizes at these ages were too small to be representative of each racial and college status group. The final sample size for the current study is 9,988.

Measures

Age. We calculated participants' ages by subtracting their birth date from the interview date at each of the four waves of data collection.

Gender. Gender was coded as 1 = male and 0 = female. The sample consisted of 4,731 males (47.4%) and 5,257 females (52.6%).

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