Educational Attainment and Alcohol Use Before, During, and After College

by

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ABSTRACT

The well-educated tend to have lower levels of morbidity and mortality than their less-educated counterparts. Although college attendance is generally associated with improved well-being and health behaviors, research suggests one exception – college attendance increases risky drinking. If a college education is linked with improved health, why is college attendance associated with an increase in alcohol use? This study attempts to resolve this theoretical disparity by comparing the drinking patterns of youth who do and do not attend college before, during, and after typical college ages. Results from the National Longitudinal Survey of Youth, 1997 cohort, indicate that although college attenders increase their drinking during their college years, college-non-attenders drink more, and more riskily, at the same ages. In general, our results confirm a negative relationship between educational attainment and risky drinking, but suggest that this relationship is driven by selection rather than a causal effect of educational attainment.

Extended Abstract

The well-educated tend to have healthier habits, live in better, safer neighborhoods, eat better food, live longer, and have smaller waists than their less-educated counterparts (Link and Phelan 1995; Lantz et al. 1998; Masters, Hummer, and Powers 2012; Von Hippel and Lynch 2012). The link between college attendance and binge drinking, however, is a notable exception to the health benefits of a college education. If a college education is linked with improved health, why is college attendance associated with an increase in risky drinking?

Social science and public health research has consistently found that college attendance is associated with a dramatic increase in alcohol consumption (White et al. 2006; Timberlake et al. 2007; Henry Wechsler and Nelson 2008; Crosnoe and Riegle-Crumb 2007), and that college students tend to drink more than comparable non-attending teenagers (H Wechsler, Dowdall, Davenport, and Rimm 1995). Yet, much of the research examining the link between college and alcohol consumption is limited by narrow definitions of problem drinking (Crosnoe and Riegle-Crumb 2007), an exclusive focus on college students that fails to make a reasonable comparison to non-attenders (H Wechsler, Dowdall, Davenport, and Castillo 1995), small, unrepresentative samples of students (Read et al. 2002), and a failure to examine drinking patterns across gender or race/ethnicity (Gfroerer, Greenblatt, and Wright 1997; White et al. 2006). To be sure, binge drinking and excessive alcohol consumption is a public health problem, and the physical and social consequences of problem drinking are severe and long lasting, but previous research may have overstated the influence of college attendance on binge drinking and drinking behavior, leaving some important issues unclear:

1. Is the relationship between educational attainment and risky drinking causal or the result of selection?
2. Is the educational attainment gap in drinking consistent at all levels of alcohol consumption, or do college-attenders drink more only at extreme levels of drinking?
3. Does the relationship between educational attainment and risky drinking vary by race/ethnicity and gender?
4. Finally, what are possible mechanisms linking educational attainment with alcohol consumption?

We address these questions by examining alcohol consumption by educational attainment among young adults from age 16 to 27. Despite the longstanding national conversation about binge drinking, few studies have examined drinking behavior before, during, and after typical college ages. Studies that only examine drinking among college-attenders are likely to overstate the influence of college on drinking behavior because they fail to compare their findings with a reasonable control group, college non-attenders. Moreover, studies that measure respondents as few as two times or miss large swaths of young

adulthood may overlook important variations in alcohol consumption that take place during the transition to college, within college, and across young adulthood. Our study improves upon past studies by broadly measuring alcohol consumption, making use of longitudinal data, and examining patterns of alcohol consumption across racial/ethnic status and gender.

Data

We analyze the National Longitudinal Survey of Youth-1997 cohort (NLSY97), a probability sample of American adolescents with an oversample of blacks and Hispanics. The NLSY97 has 8,984 participants; after removing the 83 participants who identify as mixed race, we stratify the remaining 8,901 participants into six groups defined by gender and race/ethnicity. Our key variables are educational attainment at age 27 and a series of alcohol consumption measures. Educational attainment is defined as an ordinal variable with five levels: (1) high school dropout, (2) high school diploma or GED, (3) completed associates degree, (4) completed bachelor's degree, and (5) completed graduate degree. Our measures of alcohol consumption include: number of alcoholic drinks consumed on an average day in the past 30 days, number of days consumed alcohol in the past 30 days, consumed 5 drinks or more in a single day in the past 30 days (binge drinking), abstained from alcohol in the past 30 days, consumed alcohol before or during school or work in the past 30 days[1].

NLSY97 participants were 12 to 16 years in 1996 and were interviewed every year from 1997 until 2009. Thus, the youngest participants were followed from ages 12 to 25 and the oldest participants were followed from ages 16 to 29. We limit our observations to the ages when a majority of all respondents were interviewed, ages 16 to 27. Accordingly, we report measures of alcohol consumption through age 27, effectively observing drinking patterns before, during, and after typical college ages.

Preliminary results

As seen in Figure 1, at no point from age 16 to 27 are college graduates drinking more or more problematically than their non-attending counterparts. Moreover, there are large education disparities in rates of binge drinking and drinking before or during school or work such that non-college-attenders drink significantly more and more problematically on average than those who graduated college. The general trend observed in Figure 1suggests that drinking before or during school declines after age 21, but that educational gaps persist and remain large. Conversely, the trend for binge drinking holds relatively steady after age 18, and after a slight decrease until age 25, appears to increase slightly at age 27. Interestingly, binge drinking peaks for college attenders around age 19, while it peaks for non-attenders at age 21 – the

[1] To comply with space constraints of an extended abstract we present two measures of alcohol consumption: Binge Drinking (>5 drinks in a night) and drinking before or during school or work in the past 30 days.

universal legal drinking age, and rates of binge drinking drop more precipitously for attenders after it peaks than for non-attenders. Indeed, for non-attenders rates of binge drinking remain somewhat steady through age 27 (20% vs. 16%), while rates decline by more than half among college-attenders (17% vs. 7%). There is also evidence of a college drinking effect for men, though this effect is generally limited to college ages. As we found among the sample at large and among women, binge drinking peaks for college attending men at younger ages than it does for non-attenders and drops more sharply afterward, as well (figure not shown).

Examining alcohol consumption trends by educational attainment highlights some important differences by education level. First, as seen in Figure 2, without exception, high school dropouts have higher odds of binge drinking in the past 30 days than all other educational groups relative to high school graduates, regardless of race/ethnicity or gender. However these differences are not always significant suggesting that for some racial/ethnic groups education is not a significant cause of variation in drinking behavior. For example, among black males and females there is little variation in binge drinking by education status. Second, with one exception, college graduates have significantly lower odds of binge drinking than high school graduates regardless of race/ethnicity or gender, however, at most ages, college graduates are not significantly different than high school graduates.

In general, results in Figure 3suggest that high school dropouts have high rates of drinking before school or work, a particularly damaging form of risky drinking. Whites have the most significant and largest variation in early drinking by educational attainment. Similar to Figure 2, there is little variation in consumption by educational attainment for blacks, suggesting the effect of educational attainment for Hispanics and blacks is weak, and tied to other factors.

Preliminary conclusion

In general, our results suggest that there is a negative relationship between educational attainment and risky drinking, but that this relationship is likely due to selection. In other words, non-college-attenders drink more and more problematically than college attenders before during and after typical college ages. While it is true that rates of alcohol consumption increase for college attenders, rates of drinking before or during school or work and rates of binge drinking are higher for non-attenders. As we move forward, we will incorporate more measures of alcohol consumption, make clear comparisons by race/ethnic status and gender, and carefully examine factors that contribute to both alcohol consumption and educational attainment.

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Table 1.Logit regression predicting drinking behavior at Age 23 and 27 by Gender and Race/Ethnicity.

Panel A. Logit regression predicting odds of **drinking during work or school** at Age 23 by Gender and Race/Ethnicity.

	Female			Male		
	White	Black	Hispanic	White	Black	Hispanic
(ref=High School Grad)						
Dropout	1.62***	1.21	1.06	1.86***	1.66***	1.59**
	(0.24)	(0.23)	(0.21)	(0.24)	(0.25)	(0.28)
Some College	1.00	1.16	0.75	1.05	0.85	0.68*
	(0.14)	(0.21)	(0.15)	(0.14)	(0.16)	(0.13)
AA	0.61*	0.88	0.78	0.73	0.59	0.63
	(0.12)	(0.25)	(0.25)	(0.15)	(0.21)	(0.22)
Bachelor	0.32***	0.82	0.97	0.54***	0.48**	0.75
	(0.05)	(0.19)	(0.22)	(0.08)	(0.12)	(0.21)

Panel B. Logit regression predicting odds of **drinking during work or school** at Age 27 by Gender and Race/Ethnicity.

	Female			Male		
	White	Black	Hispanic	White	Black	Hispanic
(ref=High School Grad)						
Dropout	1.82*	1.00	1.71+	1.27	1.11	1.05
	(0.47)	(0.25)	(0.53)	(0.27)	(0.32)	(0.27)
Some College	1.53+	1.07	1.81**	1.03	0.52*	1.66+
	(0.35)	(0.26)	(0.53)	(0.2)	(0.15)	(0.49)
AA	1.01	1.47	2.05	1.09	1.18	1.08
	(0.28)	(0.62)	(1.04)	(0.33)	(0.75)	(0.52)
Bachelor	1.00	1.92+	2.37*	0.68+	0.60	0.93
	(0.21)	(0.69)	(0.85)	(0.14)	(0.23)	(0.34)

Panel C. Logit regression predicting **more than 5 drinks** when drinking at Age 23 by Gender and Race/Ethnicity.

	Female			Male		
	White	Black	Hispanic	White	Black	Hispanic
(ref=High School Grad)						
Dropout	1.50**	1.18	1.38	1.48**	1.80***	1.22
	(0.22)	(0.23)	(0.27)	(0.19)	(0.28)	(0.21)
Some College	0.89	1.18	0.84	0.93	0.98	0.61**
	(0.12)	(0.22)	(0.17)	(0.12)	(0.18)	(0.11)
AA	0.64*	1.02	0.99	0.68*	0.97	0.66
	(0.12)	(0.29)	(0.31)	(0.13)	(0.33)	(0.22)
Bachelor	0.30***	0.76	0.91	0.46***	0.50**	0.55*
	(0.04)	(0.18)	(0.21)	(0.07)	(0.13)	(0.15)

Panel D. Logit regression predicting **more than 5 drinks** when drinking at Age 27 by Gender and Race/Ethnicity.

	Female			Male		
	White	Black	Hispanic	White	Black	Hispanic
(ref=High School Grad)						
Dropout	1.66*	1.05	1.48	1.28	1.14	1.03
	(0.43)	(0.27)	(0.45)	(0.3)	(0.33)	(0.3)
Some College	1.46	0.9	1.64+	0.85	0.52*	1.33
	(0.34)	(0.22)	(0.48)	(0.18)	(0.16)	(0.42)
AA	1.01	1.43	1.85	1.23	1.75	0.95
	(0.29)	(0.6)	(0.94)	(0.43)	(1.33)	(0.5)
Bachelor	1.01	1.56	1.98+	0.57*	0.40*	0.84
	(0.22)	(0.54)	(0.7)	(0.13)	(0.15)	(0.34)

+p<.10, *p<.05, **p<.01, ***p<.001.

Note: Additional controls not shown for each panel include mother's education, log of family income, ASVAB score, 8th grade GPA, and alcohol consumption during high school.

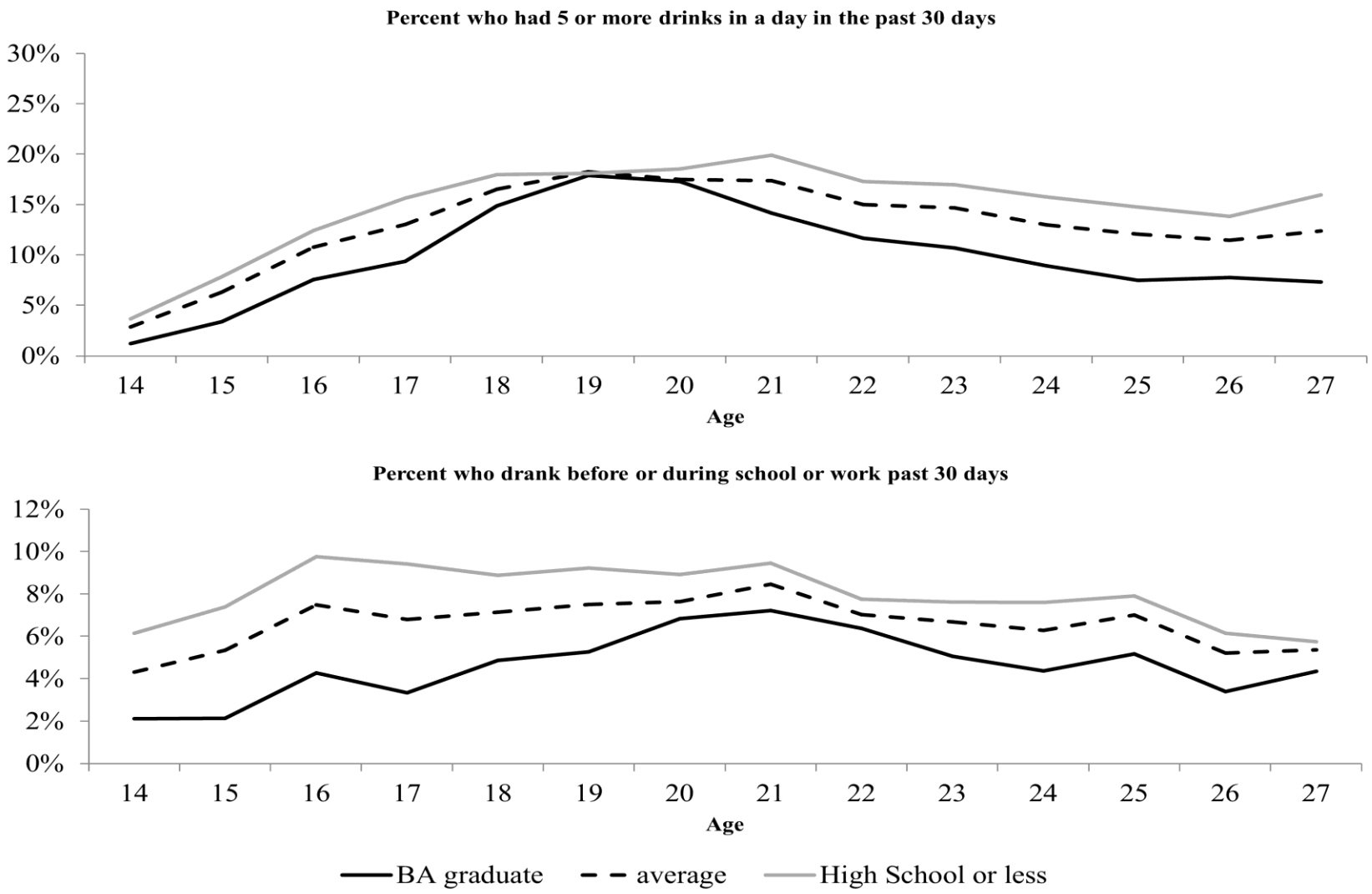

Figure 1. Rates of binge drinking (5+ drinks in a day) and drinking before or during school or work in the past 30 days from age 14-27 by educational attainment at age 27.

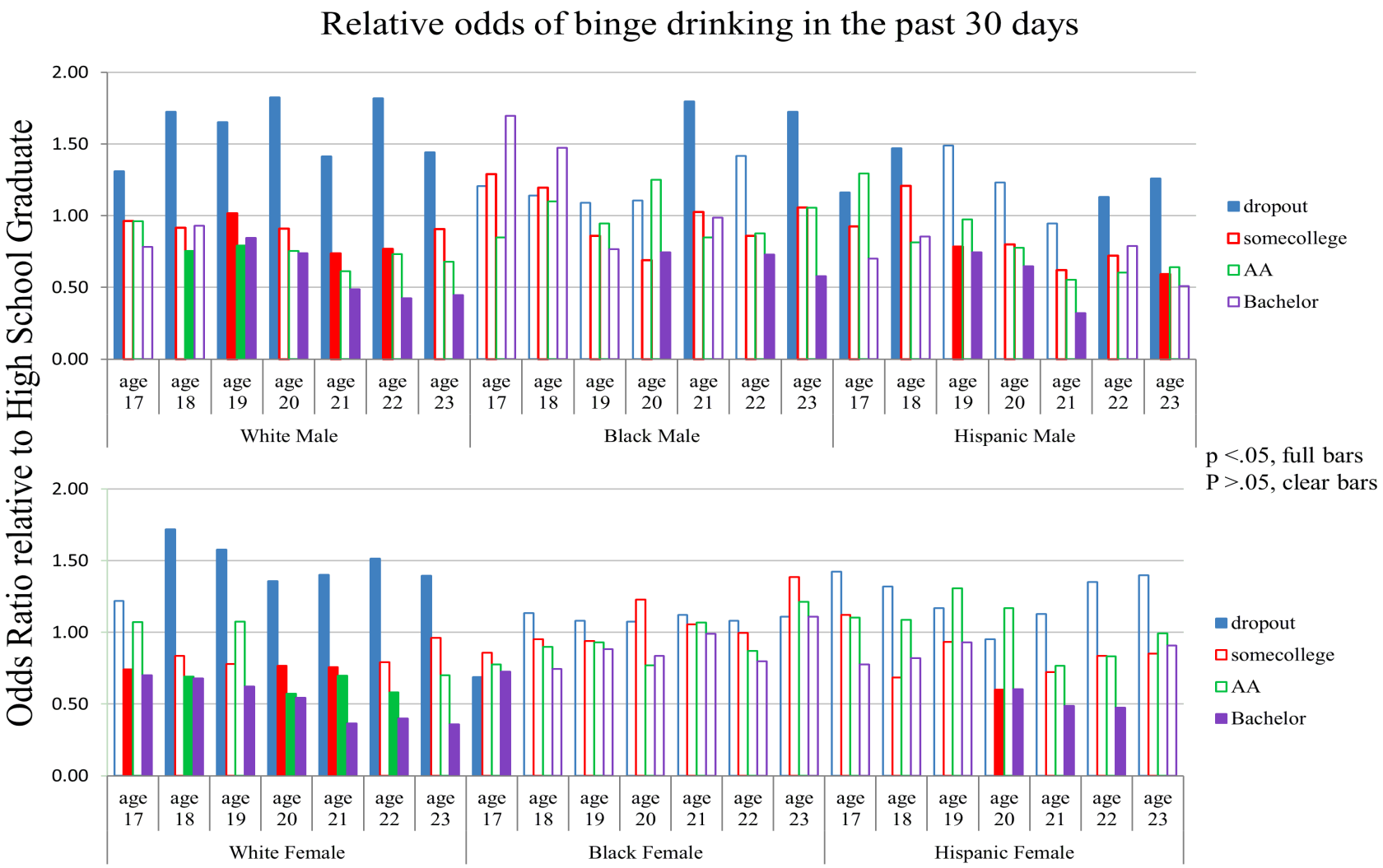

Figure 2. Unadjusted odds of binge drinking (5+ drinks in a day) in the past 30 days from age 17-23 by educational attainment at age 27 stratified by race/ethnicity and gender.

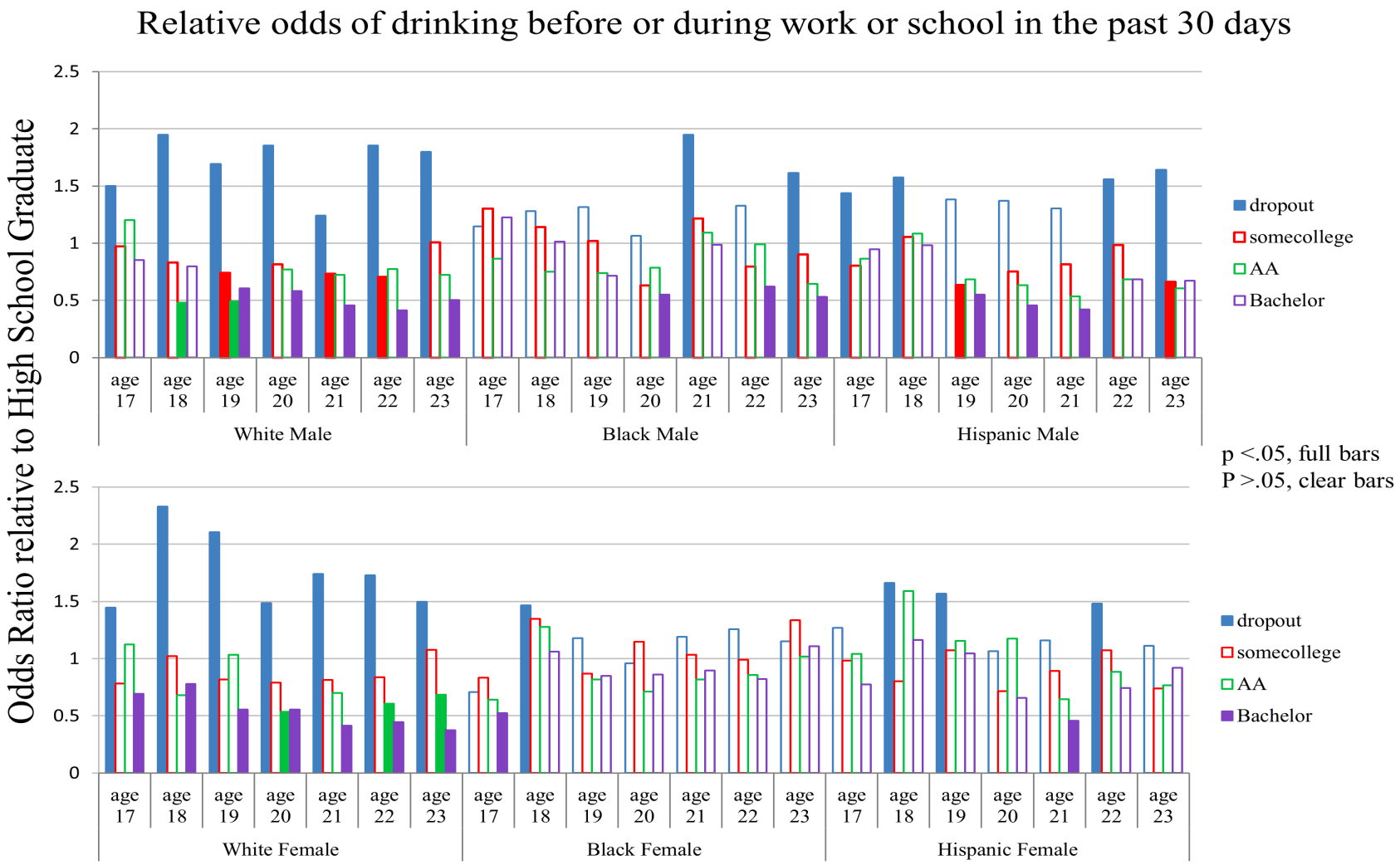

Figure 3. Unadjusted odds of drinking before or doing school or work in the past 30 days from age 17-23 by educational attainment at age 27 stratified by race/ethnicity and gender.