Published in final edited form as:

Deviant Behav. 2016 ; 37(6): 615–633. doi:10.1080/01639625.2015.1060804.

Race, Adolescent Binge Drinking, and the Context of Neighborhood Exposure

Andrea G. Krieg and Danielle C. Kuhl

Bowling Green State University, Bowling Green, Ohio, USA

Abstract

Drawing on theories of social structure and normative exposure, we examine how the neighborhood context of socioeconomic advantage and racial composition affects race/ethnic differences in youth binge drinking. Using data from Waves 1 and 2 of the National Longitudinal Study of Adolescent to Adult Health, logistic regressions reveal significant racial differences, with whites having higher odds of binge drinking than other groups. We also find that neighborhood advantage and racial composition have moderating effects on binge drinking; black youths' odds of binge drinking are significantly lower than whites' odds in highly advantaged neighborhoods, and Hispanics living in racially integrated neighborhoods have significantly lower odds of binge drinking than Hispanics living in white neighborhoods.

Introduction

Of all the various substances that adolescents use, alcohol continues to have the highest prevalence levels (Johnston et al. 2013b), and a significant proportion of youth drink to the point of bingeing. In fact, binge drinking is the most common form of alcohol consumption among adolescents and on average, youth consume more drinks per occasion than adult drinkers (CDC 2012). In 2011, 6.4% of 8th graders, 14.7% of 10th graders, and 21.6% 12th graders reported having drunk five or more drinks in a row in the past two weeks (Patrick and Schulenberg 2013). Recent research also shows that more adolescents report binge drinking two or more times in the past two weeks than binge drinking just once (Patrick and Schulenberg 2010). Ironically, despite these rates of heavy drinking, high school students do not perceive great risks to drinking alcohol, and perceived harm associated with trying one or two alcoholic beverages actually declines as students progress through older grade levels (from 13.9% in 8th grade to 11.3% in 10th grade to 8.6% in 12th grade), despite drinking prevalence rates *increasing* with age. Not surprisingly, therefore, binge drinking has been linked to a range of negative health and behavioral outcomes both in the short term and long term, including reduced neuro-cognitive functioning, risky sexual behavior, poor academic performance, and missed school or work (Brown et al. 2000; Greenblatt 2000; Komro et al. 2008; Lopez-Frias et al. 2001).

Importantly, risk for drinking is not equal across all racial and ethnic subgroups. Black youth (especially in older grades) report significantly lower levels of binge drinking than white youth, while levels for Hispanic youth fall somewhere between those for black and white youth. In 2011, for example, 12th-grade reports of drinking five or more drinks in the past two weeks were 11.3% for black youth, 20.8% for Hispanic youth, and 25.9% for white youth (Johnston et al. 2013a). Yet despite lower quantities and lower frequencies for black youth, this group suffers “disproportionately from physical and social consequences of use” (Tobler, Livingston, and Komro 2011:799), which may be due to different social ecologies of use for racial minorities (Wallace 1999). However, as scholars like Wallace point out, most examinations of racial disparities in alcohol use tend to focus on individual-level risk factors, while largely ignoring the “differences in socioeconomic status (SES) and ... contextual level risk factors to which black and Hispanic Americans are disproportionately exposed” (1999:1124; see also Seffrin 2012 for similar arguments regarding blacks and whites). More contemporary scholarship in the past decade has heeded the call to look at neighborhood contextual influences on youth alcohol use, yet much of this research is limited to a single city (e.g., Chicago) or examines negative influences such as structural disadvantage or alcohol availability (Duncan, Duncan, and Stycker 2002; Snedker, Herting, and Walton 2009; Toomey et al. 2008). Here, we draw on prior research on adolescent drinking as well as arguments from macro-structural theories of group exposure and normative regulation to examine racial/ethnic differences in adolescent binge drinking. We hope to add to the existing literature by placing this health behavior within the broader community context of race and class composition.

Neighborhood SES and adolescent binge drinking

Research that examines larger contextual influences on adolescent alcohol use tends to situate this outcome within a social disorganization theoretical perspective. Stemming from the Chicago School, the assumption that guides this research is that problem behaviors of youth are not equally distributed across communities, and that variation in problem behaviors is due largely to the breakdown of informal control (or collective efficacy) in places where socioeconomic disadvantage is highly concentrated (Sampson and Wilson 1995). Most of the research testing this assumption examines juvenile violence or delinquency, although there have been recent examples of scholarship that extend this argument to adolescent substance use.

Duncan and colleagues (2002) use data from one metropolitan area in the Pacific Northwest to examine neighborhood effects on youth substance use. They find that neighborhood poverty indirectly leads to an increase in youth drug and alcohol arrests, through reduced neighborhood social cohesion. Chuang and colleagues (2005) use nationally representative data from the Family Matters survey to examine youth substance use. They find that high-SES neighborhoods have higher adolescent alcohol levels, but this is mediated through increased parental alcohol use in these neighborhoods. They also find that low-SES neighborhoods have lower levels of adolescent alcohol use, which is mediated by increased parental monitoring. In a separate paper, Chuang and colleagues (2009) find (using the same Family Matters data) that parents' substance use influences youth substance use differently in different neighborhood contexts. Specifically, parents' substance use matters only in

suburban and urban white, middle-SES neighborhoods; it has no effect on youths in urban black, low-SES neighborhoods or rural neighborhoods. This suggests that neighborhood SES interacts with individual-level risk factors to influence youth substance use. Finally, Toomey and colleagues (2008) examine underage alcohol purchases in the city of Chicago as a proxy for underage drinking. They find that communities with higher unemployment rates are significantly more likely to sell alcohol to underage people than communities with low unemployment.

Other research has found that neighborhood disadvantage does not lead to higher levels of alcohol use (e.g., Hoffmann 2002; Snedker, Herting, and Walton 2009). Using data from the Reconnecting Youth prevention project in Seattle, Snedker and colleagues (2009) find a direct negative effect of disadvantage on adolescent alcohol use: youth living in more disadvantaged communities have lower rates of use, not higher rates. Hoffman (2002) uses data from the National Educational Longitudinal Study (NELS) to examine adolescent drug use (a composite measure including alcohol, marijuana, cocaine, and binge drinking). He finds that neighborhood male joblessness is associated with an increase in adolescent substance use, yet neighborhood poverty is associated with a decrease in substance use.

The inconsistent association between neighborhood poverty or disadvantage and youth substance use is not entirely surprising. Recent research has demonstrated that for certain health-related outcomes, neighborhood concentrated *advantage* rather than disadvantage is what matters. For example, Browning and Cagney (2003) use data from the Project on Human Development in Chicago Neighborhoods (PHDCN) to examine self-rated health and find that neighborhood affluence (the prevalence of middle- and upper-class residents as measured by income) is protective for health, yet poverty has no unique influence on health (which suggests that it is really measuring the absence of residents with resources). In a related paper that specifically examines race differences in health using the PHDCN, Browning, Cagney, and Wen (2003) again find no effect of poverty but a significant effect of community affluence. Wen, Browning, and Cagney (2003) confirm this effect of affluence but not of poverty.

Thus, social disorganization theory and its emphasis on the *negative* structural characteristics of communities may be less relevant for considerations of youth drinking behavior than theories that emphasize exposure to positive resources—both structural and cultural. It is rather surprising that still today the term “at-risk” usually refers to youth who live in disadvantaged contexts, while youth who live in affluent families and neighborhoods receive very little attention. Research shows, though, that those in the affluent context may “manifest more disturbance than others, particularly in relation to substance use, anxiety, and depression” (Luthar 2003:1588). Thus, here we examine youth binge drinking behavior as a result of structural advantage, not disadvantage.

Researchers have argued that affluence can lead to isolation and to a diminishing ability of institutional regulation when economic considerations (e.g., wealth) are emphasized. Institutional anomie theory (Messner, Thome, and Rosenfeld 2008) situates increases in crime, for example, to a devaluation of non-economic institutions and roles (e.g., religion, family) relative to economic ones. Thus, a preoccupation with wealth becomes all-

consuming and the regulatory ability of other institutions is weakened. For example, we might expect that in places characterized by affluence, the accumulation of material wealth is the priority, and other institutions become “enfeebled” and people “fail to develop strong attachments to them” (Messner et al. 2008:169). Thus, those who live in affluent communities may be less controlled by religious fellowship, because it offers less incentive in terms of attainment. As such, youths in these communities may be at higher risk for unhealthy behaviors such as binge drinking because the collectivity around them—their parents, their neighbors, their churches—have weak influence relative to material considerations. The relationship between drinking and religion can also be seen in research that contends black norms toward drinking are more conservative and focus on abstinence (Herd and Grube 1996). The research argues that this is due to history with the temperance movement and involvement with Protestant churches. Thus, in majority–minority communities, it may be that religion maintains institutional dominance, and in places where conservative religious values are emphasized, this may translate into more religious involvement with youth who live there, thus inhibiting their binge drinking.

Further, economic institutional dominance tends to promote a focus on how attainment can translate into future benefits, which leads to a devaluing of personal relationships that offer no benefit. Thus, in places with an emphasis on material wealth, relationships become transactions and their fellowship value is unimportant unless it procures tangible rewards. This is in line with Hagan’s (1991) research on party subcultures, in which he finds that young men from better-off socioeconomic backgrounds who value “partying,” which involves drinking and other “mildly disreputable” pursuits, are ultimately rewarded for it with increased status attainment and occupational prestige.

Other scholarship also makes the case that affluence leads to reduced community cohesion. For instance, Myers’ (2001) work hints that affluence reduces interdependence among people and ultimately leads to declines in social connectedness—connectedness “that is routinely enjoyed by people in communities where mutual dependence is often unavoidable” (Luthar 2003:1586). Luthar (2003) also connects affluence to high levels of autonomy and choice, which emphasizes personal failure when success is elusive; individualism places attribution on the self, not on external sources. Thus, in such a high-pressure environment in which success is expected, social norms can lead to excessive drinking because it not only helps you later (as Hagan found) but perhaps because it helps those who are not measuring up to cope.

Neighborhood racial composition and adolescent binge drinking

In addition to normative expectations and regulations that come from living in affluent communities, research points to racial composition as an additional source of exposure. Again, whereas social disorganization theory called attention to racial heterogeneity as a negative influence on behaviors, we focus more on the positive potential for racial diversity—to argue that diversity may in fact reduce the risk of binge drinking for some adolescents. We also draw on theories of differential social organization and Blau’s (1977) theory of social structure to situate behavior within a racial/ethnic context. We then use nationally representative data to examine these arguments, and our findings may seem somewhat at

odds with the traditional “heterogeneity is bad” argument stemming from these classical perspectives.

Scholarship on youth substance use has not focused so much on racial composition of communities, though there are a few recent exceptions. Using nationally representative data (NELS), Johnson and Hoffmann (2000) examine race differences in cigarette smoking. Their findings reveal that black and Hispanic adolescents who attend schools with greater percentages of minority students have a decreased risk of smoking. Thus, predominant minority context is protective against substance use. However, they also find that white youth do not receive the same benefit of attending minority schools, possibly because white youth are “not as sensitive to the norms that oppose” substance use (Johnson and Hoffmann 2000:404), thus leaving them at increased risk of use even in minority contexts. More recently, Stock and colleagues (2012) examine contextual effects on substance use for youths in Iowa and Georgia, as well as young adults in Washington, D.C. They find that, among black adolescents living in white neighborhoods, those with a lessened racial identity have the highest levels of alcohol use, but those with high racial identification did experience a buffering effect in that they are less likely to use substances despite greater access to them. Whaley and colleagues (Whaley, Smith, and Hayes-Smith 2011) use data from a Michigan sample of students and find that percent white in school districts is associated with a significant increased odds of binge drinking and other substances, even net of demographic controls.

Using the Toledo Adolescent Relationships Study (TARS), Seffrin (2012) examines the effects of racial composition on adolescent alcohol use. His research points to the possibility that there are cultural and historical difference between racial groups and their attitudes toward alcohol that account for disparities in drinking. Regarding community effects, he finds no increase in alcohol use for black adolescents in communities that are 75% black, which indicates the lower tolerance of adolescent drinking. He does find increased alcohol use for adolescents in white-only neighborhoods.

This research suggests that the greater contact minority youth have with white youth, the more likely they are to engage in substance use. However, these studies situate their arguments within more micro-level theoretical orientations (e.g., differential association theory or social learning theory (Johnson and Hoffmann 2000; Seffrin 2012) or self-concept/racial identity theory (Stock et al. 2012), which call attention to exposure to peers with certain characteristics or to cultural influences on identity. Their attention to larger racial context in schools or communities is certainly a step forward in terms of examining larger contextual influences on youth substance use (Whaley, Smith, and Hayes-Smith 2011 is an exception in focusing on macro theory, in particular social disorganization theory and Akers’ social structure–social learning model). However, it is noteworthy that differential association theory’s focus on “exposure to definitions of behavior” comes from a macro-level orientation toward normative conflict and differential social organization: in fact, as Matsueda (1988) argues, heterogeneous communities are more likely to experience conflicting norms or expectations for behavior, which results in more negative behaviors: “given a society in which members are surrounded by conflicting definitions of behavior ... social organization determines crime rates by influencing the probability that members will

be exposed to competing definitions” (Matsueda 1988:282). This argument also applies to the level of communities, as they too can serve as “conduits” of definitions and opportunities (Matsueda 1988:298). The logical extension is that communities characterized by more homogeneity (e.g., places with a majority of one group) have a consensus on normative expectations for behavior, which should reduce levels of problem behavior. More diverse places should experience conflicting norms/definitions, which might increase problem behaviors.

A related structural argument about exposure to groups comes from Blau (1977) who explicitly connected group size to the likelihood of exposure. Blau argued that ingroup associations are more prevalent than intergroup associations and that larger group size is related to less interaction. For example, in a setting in which one group predominates over another, smaller group, the larger group has, on average, more associations with those of its own group. In fact, “when differences in group size are very great, most members of the majority have no social contact with the minority” (Blau 1977:35). Blau also went on to elaborate on the *implications* of heterogeneity: it “creates barriers to social intercourse” (which is precisely what Kornhauser [1978] says, and this is why it leads to delinquency) but at high levels, it also “weakens these barriers” because it creates opportunities for social contact (Blau 1977:43–44). The assumption that follows from the latter argument is akin to Sutherland’s argument that differential social organization in heterogeneous places produces conflicting norms, which leads to higher levels of delinquency. Blau’s arguments did not pertain to specific behavioral outcomes, just associations between groups. However, the logical follow-up is that when one is exposed largely to people of the same status (e.g., same race) then this promotes behavioral norms in line with group expectations. Since drinking receives less approval in minority communities than in white communities (Seffrin 2012), then predominantly minority communities should increase exposure to this overall disapproval, thereby possibly accounting for differences in drinking.

Current study

The current study departs from the previous literature by situating racial and ethnic differences in adolescent binge drinking within a structural “exposure” framework. We predict individual differences in binge drinking across race and ethnic groups, and we test whether neighborhood socioeconomic advantage and racial composition can help explain these differences. From a structural “opportunities for contact” argument (Blau 1977), we predict that neighborhood racial homogeneity (i.e., the predominance of one group over others) will help solidify group norms toward drinking. Thus, to the extent that black and Hispanic youth live in neighborhoods with primarily their own racial group, this will help explain their lower levels of binge drinking compared to whites. In terms of socioeconomic advantage, prior research on the effect of SES on party behavior and drinking (Chuang et al. 2005; Hagan 1991) leads us to predict that higher levels of advantage will increase drinking; however, because there is racial/ethnic variation in the experience of economic advantage (in which whites live in higher-SES neighborhoods than minorities), there may be different effects of advantage on binge drinking for different groups. We therefore test interactions between individual race and neighborhood advantage to explore this possibility.

Data and methods

Sample

This study uses Waves I and II of the National Longitudinal Study of Adolescent to Adult Health (Add Health) to test hypotheses. Add Health is based on a random stratified sample that generalizes to all school-attending adolescents in the United States in 1994. Schools were stratified into clusters based on region, level of urbanization, school size, school type, percent white, percent black, grade span, and curriculum. After selecting 145 middle schools, junior high schools, and high schools, 90,118 students were interviewed along with 144 school administrators. After a 45-minute in-person, paper questionnaire at school, the school provided a roster of all students enrolled in order to interview the youth at home. Students were stratified based on age and sex. Over-samples were taken in order to study ethnicity, social networks, disabilities, and siblings. In the end, 20,745 youth were interviewed by computer-assisted personal interview/audio computer-assisted self-interview in their homes at Wave I. Wave I was collected between 1994 and 1995, while the adolescents were in 7th to 12th grades. Wave II was collected a year later in 1996, when 14,732 respondents were interviewed. There are additional follow-up waves in 2001–02 and 2007–08 but in these waves, the age of respondents is beyond the developmental phase of adolescence and thus we use just the first two waves.¹ Neighborhood variables come from a separate Wave I contextual database compiled by staff at the University of North Carolina, taken largely from the U.S. Census Bureau. Our analyses went through a process of multiple imputation (largely to account for attrition at the follow-up, a strategy discussed most recently by Biering, Frydenberg, and Hjollund 2014; Biering, Hjollund, and Frydenberg 2015) using STATA's series of *mi* commands.

Following imputation, this study includes 20,487 respondents who took part in Wave I. Respondents who participated in Wave II but not Wave I were dropped, as were those who were missing neighborhood indicator variables. In the pre-imputed sample, missing data come from a few specific variables: 283 respondents were missing binge drinking information at Wave I, and 914 respondents were missing their school grades, while because of follow-up attrition, 6,062 respondents had missing data regarding their binge drinking at Wave II. We used STATA's *mi* procedure to create five complete datasets with imputed values for the missing cases, then ran analyses using the combined estimates from all five datasets.

Table 1 shows descriptive statistics for our sample. In order to safeguard against the possibility of bias due to imputation, we compared the means for the variables in our analyses against those from the non-imputed sample. Generally, the means for the variables are similar across the samples (non-imputed means not shown but available on request). Important to these analyses, the proportion of those who report binge drinking in the last 12

¹While binge drinking among adolescents has declined between the late 1990s through 2014 (Databank 2014), the fact remains that binge drinking is still the most common form of alcohol consumption among youth (CDC 2012) and the Healthy People 2020 initiative continues to focus on youth binge drinking; two objectives for 2020 are to see a reduction in the proportion of persons 12–17 years old who report binge drinking in the past month, and to see a reduction in the proportion of high school seniors who engage in binge drinking in the past two weeks (USDHHS 2012).

months is only two percent higher in the imputed sample versus the non-imputed sample. Additionally, the proportion of each racial/ethnic group does not vary by sample.

Measures

Dependent variable—*Adolescent binge drinking* is measured using two questions from the Wave II interview. First, adolescents were asked, “During the past 12 months, on how many days did you drink alcohol?” Responses for this measure included 1 = every day or almost every day, 2 = 3 to 5 days a week, 3 = 1 or 2 days a week, 4 = 2 or 3 days a month, 5 = once a month or less (3–12 times in the past 12 months), 6 = 1 or 2 days in the past 12 months, and 7 = never. Adolescents were also asked, “Over the past 12 months, on how many days did you drink five or more drinks in a row?” Response options included 1 = every day or almost every day, 2 = 3 to 5 days a week, 3 = 1 or 2 days a week, 4 = 2 or 3 days a month, 5 = once a month or less (3–12 times in the past 12 months), 6 = 1 or 2 days in the past 12 months, and 7 = never. Those who indicated any drinking in the first question (i.e., had responses from 1 to 6) were drinkers, who were then coded as binge drinkers if they had a response of 1 through 6. Following Crosnoe and Riegle-Crumb (2007), the final measure is dichotomous, indicating that the respondent binge drank (had 5 or more drinks in a row) at least once in the last 12 months.

Independent variables—All individual-level predictor variables come from the Wave I interview. *Individual race/ethnicity* is measured based on whether the respondent indicated that he/she is white, black or African American, of Hispanic or Latino origin, Asian/Pacific Islander, American Indian/Native American, or other race. This construct was coded by giving priority to Hispanic ethnicity; thus, if an individual indicated that he/she was black and also indicated that he/she was Hispanic, then he/she was placed in the Hispanic/Latino category. Black/African American and white are thus non-Hispanic categories so all groups are mutually exclusive. Asian/Pacific Islander, American Indian/Native American, and other races were combined into an “other category” due to the small number of respondents in each category separately.

To measure *family SES*, we follow the lead of Ford, Bearman, and Moody (1999), and combine five parental education categories (1 = less than high school, 2 = high school degree, 3 = some college, 4 = college degree, 5 = graduate/professional degree) with six occupation categories (0 = not in the labor force, 1 = unskilled laborer, 2 = skilled laborer, 3 = white collar lower-level, 4 = white collar upper-level, and 5 = professional) to create an SES score for each parent from 1 to 10. In cases where data were available for both parents, we selected the higher combined score. Numerous studies have adopted this approach using Add Health (Haynie, Doogan, and Soller 2014; Haynie, Steffensmeier, and Bell 2007; Kuhl, Warner, and Wilczak 2012; Roettger et al. 2011).

Family structure is a dummy variable reflecting whether the respondent lives with two biological parents (coded 1) or any other family type (coded 0), including stepparents, single parents, or other family structures. *Grades* is based on four questions regarding the respondent’s academic grades. Adolescents were asked “At the [MOST RECENT GRADING PERIOD/LAST GRADING PERIOD IN THE SPRING], what was your grade

in:” “English or language arts,” “mathematics,” “history or social studies,” and “science?” The variables were reverse-coded so higher scores indicated better grades, and then the final measure is the mean across all subjects. The Cronbach’s alpha for grades is 0.726.

Prior binge drinking is a dummy variable constructed based on the respondent’s answer at Wave I regarding how many drinks they usually had on the occasions that they drank in the past 12 months. If the respondent was male and drank five or more drinks at a time, then they were coded as having binge drank. Females were coded similarly but with a cutoff of four or more drinks (Wechsler and Nelson 2001). We also include a measure for peer alcohol use due to the strong influence of peer behavior on youth drinking. *Peer use* comes from a question asking respondents, “of your 3 best friends, how many drink alcohol at least once a month?” (0–3).

We include a variety of neighborhood-level predictors in our models, most of which are measured with 1990 Census information in the contextual database, which includes characteristics of the residence of the adolescent at Wave I. Our measures use Census tracts as the neighborhood unit, following prior research using Add Health (Haynie, Silver, and Teasdale 2006; Haynie et al. 2009), with the exception of conservative church denominations which is at the county level. *Neighborhood advantage* is a mean scale of the proportion of households with income \$75,000 or more, proportion aged 25 or older with a college degree or more, and the proportion employed in managerial and professional specialty occupations. (Cronbach’s $\alpha = 0.730$). This measure is similar to one used in prior work using Add Health (Roche et al. 2005) and is in line with arguments that neighborhood affluence provides support for resilience against risky behaviors (Massey 2001; Wen et al. 2003).

We include a series of dummy variables representing neighborhood racial composition. These identify predominantly *white neighborhoods* (the reference category), predominantly *black neighborhoods*, predominantly *Hispanic neighborhoods* and *integrated neighborhoods*. Following Krivo, Peterson, and Kuhl (2009), neighborhoods were categorized as predominantly one racial group if at least 70% of the tract was that specific racial category. All tracts in which no single group represented more than 70% of the total were categorized as “integrated.”

Last, we include measures of conservative denomination adherents per capita and aggregated indicators of neighborhood alcohol availability and religiosity from youth survey responses. *Conservative denomination* is the number of adherents to conservative churches within a county. The data were collected by Church Growth Research Center and compiled by The Roper Center for Public Opinion Research. *Neighborhood alcohol availability* is based on the question asking respondents if “alcohol is easily available in [their] home?” Response options included yes (1) and no (0). The final measure is the mean response aggregated for each neighborhood. *Neighborhood religiosity* is based on a mean scale drawn from four questions. First, the scale includes “do you agree or disagree that the sacred scriptures of your religion are the word of God and are completely without any mistakes?” with response options including agree (1), disagree (2), and religion does not have sacred scriptures (3). Second, the scale includes “in the past 12 months, how often did you attend religious

services?” which could be answered once a week or more (1), once a month or more, but less than once a week (2), less than once a month (3), and never (4). Third, “how important is religion to you?” with response options of very important (1), fairly important (2), fairly unimportant (3), and not important at all (4). Lastly, the scale included “how often do you pray?” with options of at least once a day (1), at least once a week (2), at least once a month (3), less than once a month (4), and never (5). The four measures used to create a standardized mean scale that was then aggregated to the tract (Cronbach’s $\alpha = 0.816$). Higher values represent a lower level of youth religiosity in the neighborhood.

Analytic strategy

This article uses hierarchical linear models (*xtmelogit* in Stata) to examine how neighborhood characteristics affect adolescent binge drinking above and beyond individual covariates. We first begin by examining a null or “unconditional” model with no covariates to explore neighborhood variation in binge drinking. This model revealed that 2.8% of the variation in adolescent binge drinking is between neighborhoods. This percentage is roughly consistent with prior research, which reports fairly small percentages across neighborhoods. Brenner, Bauermeister, and Zimmerman (2011), for example, report that 3.7% of the variance in alcohol use is at the neighborhood level in their unconditional model and others examining binge drinking report around 4% (Whaley et al. 2011).

Our regressions first include all racial categories to see if there are significant racial differences in binge drinking (Model 1). Next, we add in other individual-level factors, to examine whether the racial differences in binge drinking remain net of common demographic and behavioral predictors (Model 2). Following this, we add level-2 variables, including neighborhood advantage (Model 3), racial composition measures (Model 4), alcohol availability (Model 5), conservative denomination (Model 6), and neighborhood religiosity (Model 7) to see if neighborhood predictors help account for racial differences in alcohol use, net of individual factors. An eighth model (Model 8) includes interactions between neighborhood advantage and individual race. Models 9 and 10 contain interactions of individual race/ethnicity by neighborhood racial/ethnic composition. Finally, we tested whether the significant interactions from previous models remain significant when included together (Model 11).

Results

Descriptive findings

Table 1 reports the means and standard deviations for both the individual- and neighborhood-level variables, for the pooled sample as well as for all racial groups separately. There are significant racial differences in our outcome variable of binge drinking, with more white adolescents reporting binge drinking at Wave 2 than any other racial group and fewer black adolescents binge drinking. White and “other” race adolescents have significantly higher levels of family SES than black youth, but black youth also have significantly higher levels than Hispanic youth. Almost 60% of white adolescents come from a two-biological parent household, far greater than the 31.0% of black adolescents with two-biological parent families. Similar to the binge drinking responses at Wave II, at Wave

I, more white youth indicate binge drinking in the last 12 months than all other races (32%, compared to 29.0% of Hispanic, 19.4% of “other” races, and only 13.5% of black youth).

When examining the neighborhood-level variables, we see that there is significant variability in structural advantage between neighborhoods. White youth live in significantly more advantaged neighborhoods than Hispanic and black youth, but “other” race youth live in significantly more advantaged neighborhoods than white youth. In terms of racial composition of neighborhoods, the majority of the neighborhoods can be categorized as predominantly white (62.7% of the pooled sample); the next largest category is integrated neighborhoods, which account for 25.0% of respondents’ neighborhoods. When examining racial differences in neighborhood composition, it becomes evident that white youths live in neighborhoods characterized by a majority of their own group: more than 90% of white respondents live in predominantly white communities. In contrast, racial minorities are more likely to live in integrated or predominantly minority neighborhoods: 75.7% of black youth live in either an integrated or black neighborhood; almost 63% of Hispanic youth live in integrated or Hispanic neighborhoods; over 96% of “other” race youths live in either integrated or predominantly white neighborhoods. Additionally, whites have alcohol more readily available in their neighborhoods than blacks or Hispanics. Further, black youths live in neighborhoods with a significantly stronger conservative church presence than all other race/ethnic groups, as well as in neighborhoods with stronger youth religiosity than their white, Hispanic, and other-race peers, which supports earlier work on religion as a strong institutional inhibitor of drinking among blacks (Herd and Grube 1996). Thus, these significant racial differences in neighborhood characteristics raises the possibility that these factors may partly account for racial differences in alcohol use during adolescence. Our multivariate analyses explore this possibility.

Multivariate findings

Table 2 reports the results of the hierarchical logistic models predicting adolescent binge drinking. Model 1, the individual-level baseline model, indicates that white adolescents have significantly higher odds of binge drinking than black, Hispanic, and “other” race adolescents. These racial differences are evident net of all other individual-level covariates, as we show in Model 2. In addition to race, almost all other level-1 covariates are significant predictors of binge drinking: males, older youths, those with higher grade point averages (GPAs), those with peers who also drink and those who report prior binge drinking have significantly higher odds of binge drinking in the past 12 months than females, younger respondents, those with lower GPAs, and those who did not binge drink. Coming from a two-biological parent household is also associated with lower odds of binge drinking than coming from alternative family structures.

Model 3 adds neighborhood advantage, in order to test for the effect of structural affluence on adolescent binge drinking. Importantly, results show that adolescents from more advantaged neighborhoods have higher odds of binge drinking than those from less advantaged neighborhoods. With this addition, the previous results change only slightly. White youth continue to have significantly higher odds of drinking than all other racial groups. The effects of the other individual-level covariates remain the same as in Model 2.

Model 4 illustrates that adolescents from predominantly black, Hispanic, and integrated neighborhoods have significantly lower odds of binge drinking than adolescents from white neighborhoods. With the inclusion of racial/ethnic composition, the individual-level racial/ethnic relationships changed; the results no longer show significant differences between Hispanics and whites and other racial/ethnic groups and whites.

Model 5 adds the neighborhood alcohol availability measure to examine whether the neighborhood context significantly predicts binge drinking. In fact, the odds of binge drinking are significantly higher when alcohol is readily available within the neighborhood. With the inclusion of this variable, the effects of prior individual-level factors (Model 2) remain unchanged. Model 6 and 7 include measures trying to capture the religious context of the neighborhood. The results show no significant relationship of conservative denomination, but there is a significant association between neighborhood religiosity and binge drinking (Model 7). Youth who live in less religious areas have significantly higher odds of binge drinking than youth from more religious areas. Again, effects of individual-level predictors remain unchanged from Model 2.

Model 8 adds an interaction between individual race and neighborhood advantage to examine whether there are varying effects of neighborhood advantage by race/ethnicity. When including these interactions, the significant effect of being an “other” race is reduced to non-significance, while the effect of being Hispanic remains significant and the effect of being black is reduced to marginal significance. This model shows that the main effect of advantage is significant. The partial slope of advantage is $0.844 - 0.965*(BLACK) + 0.769*(HISPANIC) - 0.246*(OTHER)$. This suggests that for blacks, as neighborhood advantage increases, the odds of binge drinking significantly decreases as compared to whites. As shown in Figure 1, black and white adolescents have significantly different likelihoods of binge drinking at various levels of neighborhood advantage. In neighborhoods at mean-level neighborhood advantage, whites’ likelihood of binge drinking is raised, while it is lowered for black adolescents. These racial differences are enhanced with greater levels of neighborhood advantage.

In Models 9 and 10, models were run to examine the interaction between neighborhood racial composition and individual race. There was no significant interaction between neighborhood racial composition and being an “other” race, so these results are not shown. Results show that living in an integrated neighborhood may perhaps increase binge drinking risk for black youth, but this effect is only marginally significant (Model 9). Model 10 shows that there is a significant interaction regarding Hispanics living in integrated neighborhoods. The interaction suggests that Hispanics in integrated neighborhoods have significantly lower odds of binge drinking than Hispanics in white neighborhoods. Figure 2 illustrates this interaction effect for Hispanics in integrated neighborhood compared to Hispanics in predominantly white neighborhoods. When adding in this interaction, we also see that the individual race effects remain quite strong, with blacks having significantly lower odds of binge drinking than whites. Lastly, the results from Model 11, which include all formerly significant measures, indicate that the two former interactions (black*advantage and Hispanic*integrated neighborhood) remain significant, net of each other.

Discussion and conclusion

This research aimed to understand adolescent binge drinking by placing it within a structural exposure context. The objectives were to examine the individual race differences in adolescent binge drinking and to explore the possibility that an individual's neighborhood environment partly accounts for these differences. Overall, we found partial support for our expectations. Results showed significant individual race differences. Additionally, we found that both racial composition and advantage at the neighborhood level significantly predict the odds of binge drinking, net of individual factors. Furthermore, we found that neighborhood structure, predominantly neighborhood advantage, accounts for these differences between white youth and all other racial groups. Also, results show that neighborhood advantage affects white and black adolescents' binge drinking differently. For white youth, living in more advantaged neighborhoods exacerbates binge drinking, while for black youth, it lowers the odds of binge drinking. Lastly, while not explaining away individual racial differences as strongly, neighborhood racial composition does significantly affect the odds of binge drinking for Hispanic youth. We find that Hispanic youth who live in integrated neighborhoods have significantly lower odds of binge drinking than Hispanic youth who live in white neighborhoods, which is in line with prior research on other substances such as cigarettes (Johnson and Hoffmann 2000).

The buffering effect of advantage for black youth may be due to the way they experience specific neighborhood types. It is still relatively rare for black adolescents to grow up in advantaged neighborhoods, and when they do, this experience may lead to different behavioral outcomes than for white youth. Black youth (and their parents) may view their environment as one that demonstrates potential for future success, and as such, they may be less willing to jeopardize that future success by binge drinking. This argument is in line with research on race and educational attainment. For instance, Crowley (1991) examines the interaction between race and college status and generally finds support for the notion that black college students are less likely to drink than non-college students. This suggests that college may hold a bigger payoff for minority students than for white students. There is evidence to support this heterogeneity in returns to college. Brand and Xie (2010) find, using two different longitudinal data sets, that those who are least likely to obtain a college education actually benefit the *most* from one in terms of wages. Relatedly, Moretti (2004) finds a spillover effect of college education on wages using National Longitudinal Survey of Youth data; in places where there are more college graduates, the effect on wages is greatest for the least educated persons. Research on race/ethnic differences also confirms this heterogeneity in returns, but for neighborhood outcomes. For instance, Swisher, Kuhl, and Chavez (2013) use data from Add Health and find that educational attainments lead to larger locational benefits (reductions in poverty) for blacks and Hispanics relative to whites, which is also in line with recent data on the importance of education and other measures of SES as a source of residential segregation (Massey, Rothwell, and Domina 2009). Hence, persistent racial inequalities in not just education, but in locational resources, can lead minorities—especially those who live in advantaged areas—to feel more *anticipatory* toward success because of the average level of educational and occupational success that surrounds them. As such, binge drinking would be a risk not worth taking.

Additionally, it may be that black adolescents in advantaged communities hold on more tightly to their racial identities than they might do in a more disadvantaged context. Prior work on racial identity (Stock et al. 2012) does show support for this idea, but little research links racial identity or ethnic pride to binge drinking specifically. However, there does seem to be a link between racial identity for black youth and their drinking prevalence levels and their attitudes toward drug use and drinking. Caldwell and colleagues (2004) find that black youths who feel more positive about their racial group have lower drinking prevalence than those who feel less positive about their racial group. Townsend and Belgrave (2000) find that black youth who have strong racial identities have significantly less tolerant attitudes toward drug use. A limitation of this research is that the samples come from at-risk youth, so there is no comparison for black youth in advantaged contexts. Thus, while speculative, it may be that black youth surrounded by success in advantaged neighborhoods cling more tightly to their identities, which protects them from risk behaviors like binge drinking. Future research would benefit from measures of racial identity (which Add Health is lacking) that can allow a more explicit test of whether this factor influences binge drinking differently in more socioeconomically advantaged contexts.

Future research would also gain further insight by exploring distinctions among subgroups of black youth. Ethnographic research reveals more nuances in approval of drinking within certain subgroups (e.g., among Haitian youth and African-American youth) than what survey research frequently finds for the overall “black youth” category; specifically, Strunin’s ethnographic study (2001) finds that “sipping” behavior is acceptable among certain groups because it demonstrates drinking with restraint, whereas drinking to excess is unacceptable because of its perceived association with negative non-normative behaviors. Additionally, qualitative interviews with black immigrants from the West Indies reveal different identity processes, likely because of their unique history; West Indians come from a society in which many blacks are successful and have high social positions, have better race relations with whites, and consequently have high ambitions and expectations (Waters 2009). The way that their racial identities are related to their drinking behaviors may thus well differ from those of mainstream blacks who were born in the United States. A limitation of our study is that we do not have such ethnic distinctions for our black respondents.

As expected, our results show that white adolescents have higher odds of binge drinking than all other racial groups. Because of this, our findings also point to a focus on the “party” subculture of advantaged, white youth (Hagan 1991). Hagan (1991) argues that this subculture exists because youth search for excitement and thrills, and those from non-working class backgrounds in particular (i.e., more advantaged youth) incorporate drinking into their leisure pursuits because it will actually benefit them in the future. Our results suggest that research should continue to examine this possibility, as we similarly show that neighborhood advantage leads to higher odds of binge drinking among whites. This reasoning may also speak to our findings regarding Hispanics in white neighborhoods versus Hispanics living in integrated neighborhoods. It is possible that Hispanics living in white neighborhoods have much greater exposure to this “party” subculture, and therefore are more likely to binge drink in that context than in integrated places, where they have exposure to multiple normative expectations about drinking—that is, norms approving

drinking among some white neighbors but norms disapproving drinking among many black or Hispanic neighbors—which may lead to a significantly lower likelihood of drinking for Hispanics there compared to in predominantly white neighborhoods.

Additionally, our results reiterate the conclusion that “effective efforts to reduce youth drinking require a major focus on changing the community- and societal-level factors that encourage youth alcohol use” (Wagenaar and Perry 1994:330), not just a focus on changing the individual. All adolescents are not equally exposed to risk factors for binge drinking (Wallace and Muroff 2002). Perhaps because community treatments are more difficult to implement than individual treatments, these differential risks continue to exist. The context of exposure involves families, schools, and neighbors who transmit norms to youths. As such, it may be useful to encourage intergroup exposure within communities—thus, to encourage group integration—to help expose higher-risk youth to more protective environments. Since white youth are at highest risk for drinking, it may be especially beneficial to expose this group to minority group norms against substance use. Research has found that black parents hold stronger norms against adolescent alcohol use and involve their children less in adult alcohol use than white parents, which suggests that solutions can also focus on parenting strategies: “interventions that help parents create a strong normative environment against alcohol use may be particularly important for white parents, primarily because they appear less consistent than black parents in behaviorally asserting norms unfavorable to alcohol use” (Peterson et al. 1994:224). Additionally, if white youth are more exposed to parental attitudes favorable toward drinking, this likely feeds into their greater exposure to the party subculture where availability and approval are normative. Research has shown that black youth are less likely than white youth to report attending parties where substances are used and to report that their friends get drunk (Wallace and Muroff 2002:256). Thus, black youths’ reduced emphasis on this party subculture should offer a more protective environment for white youth especially.

Broadly speaking, exposure to more minority families in communities can offer white adolescents the chance to develop more favorable attitudes about minorities, and to increased appreciation of cultural differences, some of which (such as disapproval of drinking) offer protection against certain risk behaviors. The idea that intergroup contact should reduce bias is an old idea in the literature; Allport maintained that programs aiming at increased contact “should lead to a sense of equality in social status...” (Allport 1958:454). Pettigrew and Tropp’s (2006) meta-analysis of Allport’s contact hypothesis demonstrated that intergroup contact significantly reduced intergroup biases, for both majority and minority persons. An important caveat is that *friendship* in particular has the promise of reducing prejudice (Aboud, Mendelson, and Purdy 2003; Davies et al. 2011), and as such, stronger emotional attachments to outgroups theoretically have more potential at reducing risk behaviors than superficial contact. Thus, implications seem to be to encourage not just contact within neighborhoods, and not just among adults, but to encourage friendships among children and adolescents in both the community and school context.

Certainly this integration is not so easily attained, considering that there are still strong racialized preferences for neighborhoods, with whites reporting a preference for all-white neighborhoods while blacks saying that racially mixed neighborhoods are most desirable

(Krysan et al. 2009). It is important to also keep in mind that our study uses data from the 1990s, when racial diversity was lower than it is currently; using the entropy index, Lee, Iceland, and Sharp (2012) show that there has been increasing diversity across metropolitan, micropolitan, and rural areas in the United States since the 1980s, and that white-majority places have declined while black-majority and Hispanic-majority places have substantially increased (yet are still quite rare relative to white-majority places). Our finding of an increased risk of binge drinking for Hispanic youth in white neighborhoods, therefore, may be somewhat attenuated if we consider that minority youth may be somewhat less likely to live in white-majority neighborhoods today than 20 years ago. This is speculative, however, because we need data on the current generation of adolescents as they are engaging in risk behaviors in the contemporary neighborhood context. Scholarship would benefit greatly by continuing to collect linkable data (survey data matched to neighborhoods) that allow us to examine these possibilities. Trends toward diversity thus seem to offer at least some hope for increased exposure to minority norms that disapprove of drinking, yet mobility patterns across neighborhoods happen slowly, and adolescents' residences are a result of parental choice; as such, we cannot expect reductions in binge drinking risk to occur in the immediate future.

Scholarship would also benefit from examining how these results apply to other substances. Alcohol use and binge drinking are extremely prevalent in adolescence, and research shows that youth perceive very little harm from drinking. It is possible that neighborhood context may have different effects on other substances, especially illicit drugs. Additionally, other compositional factors, like immigrant concentration and family structure, may have different effects on adolescent substance use. Our results point specifically to the importance of integrated racial composition of neighborhoods as important in explaining white-Hispanic differences in binge drinking. Future scholarship should consider examining specific cultural characteristics and norms within racially heterogeneous areas that might shed further light on our findings. Research has begun to show the unique effects of immigrant enclaves on adolescent violence and other problem behaviors (Desmond and Kubrin 2009), yet few have examined the unique immigrant context as it applies to adolescent alcohol use (for exceptions, see Frank, Cerda, and Rendón 2007; Vega and Gil 1998; Vega, Gil, and Wagner 2002) and those that do have not used nationally representative samples. Lastly, surveys that include good measures for norms would be ideal for this particular area of study. Only by examining the norms and definitions being promoted in the neighborhood can we have a more thorough understanding of the processes arguably at work.

Acknowledgments

This article is a revised version of a paper presented at the annual meetings of the American Society of Criminology, November 22, 2013, Atlanta, GA.

Funding

This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health website (<http://www.cpc.unc.edu/addhealth>). No direct

support was received from grant P01-HD31921 for this analysis. This research was also supported in part by a grant (R15HD070098-01A1) from the Eunice Kennedy Shriver National Institute of Child Health & Human Development, and by the Center for Family and Demographic Research, Bowling Green State University, which has core funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (R24HD050959). The opinions and conclusions expressed herein are solely those of the author(s) and should not be construed as representing the opinions or policy of any agency of the Federal government.

References

- About, Frances; Mendelson, Morton; Purdy, Kelly. Cross-Race Peer Relations and Friendship Quality. *International Journal of Behavioral Development*. 2003; 27:165–173.
- Allport, Gordon W. *The Nature of Prejudice*. Cambridge, MA: Addison-Wesley; 1958.
- Biering, Karin; Frydenberg, Morten; Hjollund, Niels Henrik. Self-Reported Health Following Percutaneous Coronary Intervention: Results from a Cohort Followed for 3 Years with Multiple Measurements. *Clinical Epidemiology*. 2014; 6:441–449. [PubMed: 25506246]
- Biering, Karin; Hjollund, Niels Henrik; Frydenberg, Morten. Using Multiple Imputation to Deal with Missing Data and Attrition in Longitudinal Studies with Repeated Measures of Patient-Reported Outcomes. *Clinical Epidemiology*. 2015; 7:91–106. [PubMed: 25653557]
- Blau, Peter M. *Inequality and Heterogeneity: A Primitive Theory of Social Structure*. New York: Free Press; 1977.
- Brand, Jennie E.; Xie, Yu. Who Benefits Most from College? Evidence for Negative Selection in Heterogeneous Economic Returns to Higher Education. *American Sociological Review*. 2010; 75:273–302. [PubMed: 20454549]
- Brenner, Allison B.; Bauermeister, José A.; Zimmerman, Marc A. Neighborhood Variation in Adolescent Alcohol Use: Examination of Socioecological and Social Disorganization Theories. *Journal of Studies on Alcohol and Drugs*. 2011; 72:651–659. [PubMed: 21683047]
- Brown SA, Tapert SF, Granholm E, Delis DC. Neuro-Cognitive Functioning of Adolescents: Effects of Protracted Alcohol Use. *Alcoholism: Clinical and Experimental Research*. 2000; 24:164–171.
- Browning, Christopher R.; Cagney, Kathleen A. Moving Beyond Poverty: Neighborhood Structure, Social Processes, and Health. *Journal of Health and Social Behavior*. 2003; 44:552–571. [PubMed: 15038149]
- Browning, Christopher R.; Cagney, Kathleen A.; Wen, Ming. Explaining Variation in Health Status across Space and Time: Implications for Racial and Ethnic Disparities in Self-Rated Health. *Social Science & Medicine*. 2003; 57:1221–1235. [PubMed: 12899906]
- Caldwell, Cleopatra Howard; Sellers, Robert M.; Bernat, Debra Hilkene; Zimmerman, Marc A. Racial Identity, Parental Support, and Alcohol Use in a Sample of Academically at-Risk African American High School Students. *American Journal of Community Psychology*. 2004; 34:71–82. [PubMed: 15495795]
- CDC. Underage Drinking. Centers for Disease Control and Prevention; 2012. Retrieved (<http://www.cdc.gov/alcohol/fact-sheets/underage-drinking.htm>)
- Chuang, Ying-Chih; Ennett, Susan T.; Bauman, Karl E.; Foshee, Vangie A. Neighborhood Influences on Adolescent Cigarette and Alcohol Use: Mediating Effects through Parent and Peer Behaviors. *Journal of Health and Social Behavior*. 2005; 46:187–204. [PubMed: 16028457]
- Chuang, Ying-Chih; Ennett, Susan T.; Bauman, Karl E.; Foshee, Vangie A. Relationships of Adolescents' Perceptions of Parental and Peer Behaviors with Cigarette and Alcohol Use in Different Neighborhood Contexts. *Journal of Youth and Adolescence*. 2009; 38:1388–1398. [PubMed: 19779814]
- Crosnoe, Robert; Riegle-Crumb, Catherine. A Life Course Model of Education and Alcohol Use. *Journal of Health and Social Behavior*. 2007; 48:267–282. [PubMed: 17982868]
- Crowley, Joan E. Educational Status and Drinking Patterns: How Representative Are College Students? *Journal of Studies on Alcohol and Drugs*. 1991; 52:10–16.
- Databank, Child Trends. Child Trends Databank. Child Trends; 2014. Binge Drinking: Indicators on Children and Youth. Retrieved (<http://www.childtrends.org/?indicators=binge-drinking>)

- Davies, Kristin; Tropp, Linda R.; Aron, Arthur; Pettigrew, Thomas F.; Wright, Stephen C. Cross-Group Friendships and Intergroup Attitudes a Meta-Analytic Review. *Personality and Social Psychology Review*. 2011; 15:332–351. [PubMed: 21844287]
- Desmond, Scott A.; Kubrin, Charis E. The Power of Place: Immigrant Communities and Adolescent Violence. *The Sociological Quarterly*. 2009; 50:581–607.
- Duncan, Susan C.; Duncan, Terry E.; Stycker, Lisa A. A Multilevel Analysis of Neighborhood Context and Youth Alcohol and Drug Problems. *Prevention Science*. 2002; 3:125–133. [PubMed: 12088137]
- Ford, Carol A.; Bearman, Peter S.; Moody, James. Foregone Health Care among Adolescents. *JAMA*. 1999; 282:2227–2234. [PubMed: 10605974]
- Frank, Reanne; Cerda, Magdalena; Rendón, Maria. Barrios and Burbs: Residential Context and Health-Risk Behaviors among Angeleno Adolescents. *Journal of Health and Social Behavior*. 2007; 48:283–300. [PubMed: 17982869]
- Greenblatt, Janet C. Patterns of Alcohol Use among Adolescents and Associations with Emotional and Behavioral Problems. Office of Applied Studies, Substance Abuse and Mental Health Services Administration; Rockville, MD: 2000.
- Hagan, John. Destiny and Drift: Subcultural Preferences, Status Attainments, and the Risks and Rewards of Youth. *American Sociological Review*. 1991; 56:567–582.
- Haynie, Dana L.; Doogan, Nathan J.; Soller, Brian. Gender, Friendship Networks, and Delinquency: A Dynamic Network Approach. *Criminology*. 2014; 52:688–722. [PubMed: 26097241]
- Haynie, Dana L.; Silver, Eric; Teasdale, Brent. Neighborhood Characteristics, Peer Networks, and Adolescent Violence. *Journal of Quantitative Criminology*. 2006; 22:147–169.
- Haynie, Dana L.; Steffensmeier, Darrell; Bell, Kerry E. Gender and Serious Violence: Untangling the Role of Friendship Sex Composition and Peer Violence. *Youth Violence and Juvenile Justice*. 2007; 5:235–253.
- Haynie, Dana; Petts, Richard; Maimon, David; Piquero, Alex. Exposure to Violence in Adolescence and Precocious Role Exits. *Journal of Youth & Adolescence*. 2009; 38:269–286. [PubMed: 19636744]
- Herd, Denise; Grube, Joel. Black Identity and Drinking in the Us: A National Study. *Addiction*. 1996; 91:845–857. [PubMed: 8696247]
- Hoffmann, John P. The Community Context of Family Structure and Adolescent Drug Use. *Journal of Marriage and Family*. 2002; 64:314–330.
- Johnson, Robert A.; Hoffmann, John P. Adolescent Cigarette Smoking in U.S. Racial/Ethnic Subgroups: Findings from the National Education Longitudinal Study. *Journal of Health and Social Behavior*. 2000; 41:392–407. [PubMed: 11198564]
- Johnston, Lloyd D.; O'Malley, Patrick M.; Bachman, Jerald G.; Schulenberg, John E. Demographic Subgroup Trends among Adolescents for Fifty-One Classes of Licit and Illicit Drugs, 1975–2012. Institute for Social Research, University of Michigan; Ann Arbor, MI: 2013a.
- Johnston, Lloyd D.; O'Malley, Patrick M.; Bachman, Jerald G.; Schulenberg, John E. Monitoring the Future National Results on Drug Use: 2012 Overview, Key Findings on Adolescent Drug Use. Institute for Social Research, University of Michigan; Ann Arbor, MI: 2013b.
- Komro, Kelli A.; Perry, Cheryl L.; Veblen-Mortenson, Sara; Farbachsh, Kian; Toomey, Traci L.; Stigler, Melissa H.; Jones-Webb, Rhonda; Kugler, Kari C.; Pasch, Keryn E.; Williams, Carolyn L. Outcomes from a Randomized Controlled Trial of a Multi-Component Alcohol Use Preventive Intervention for Urban Youth: Project Northland Chicago. *Addiction*. 2008; 103:606–618. [PubMed: 18261193]
- Kornhauser, Ruth. *Social Sources of Delinquency*. Chicago, IL: University of Chicago Press; 1978.
- Krivo, Lauren J.; Peterson, Ruth D.; Kuhl, Danielle C. Segregation, Racial Structure, and Neighborhood Violent Crime. *American Journal of Sociology*. 2009; 114:1765–1802.
- Krysan, Maria; Couper, Mick P.; Farley, Reynolds; Forman, Tyrone. Does Race Matter in Neighborhood Preferences? Results from a Video Experiment. *American Journal of Sociology*. 2009; 115:527.
- Kuhl, Danielle C.; Warner, David F.; Wilczak, Andrew. Adolescent Violent Victimization and Precocious Union Formation. *Criminology*. 2012; 50:1089–1127. [PubMed: 24431471]

- Lee, Barrett A.; Iceland, John; Sharp, Gregory. Racial and Ethnic Diversity Goes Local: Charting Change in American Communities over Three Decades. USA2010 Project. 2012. Retrieved (<http://www.s4.brown.edu/us2010/Data/Report/report08292012.pdf>)
- Lopez-Frias M, de la fe Fernandez M, Planells E, Miranda MT, Mataix J, Llopis J. Alcohol Consumption and Academic Performance in a Population of Spanish High School Students. *Journal of Studies on Alcohol*. 2001; 62:741–744. [PubMed: 11838909]
- Luthar, Suniya S. The Culture of Affluence: Psychological Costs of Material Wealth. *Child Development*. 2003; 74:1581–1593. [PubMed: 14669883]
- Massey, Douglas S. The Prodigal Paradigm Returns: Ecology Comes Back to Sociology. In: Booth, A.; Crouter, AC., editors. *Does It Take a Village? Community Effects on Children, Adolescents, and Families*. Mahwah, NJ: Lawrence Erlbaum; 2001. p. 41-48.
- Massey, Douglas S.; Rothwell, Jonathan; Domina, Thurston. The Changing Bases of Segregation in the United States. *Annals of AAPSS*. 2009; 626:74–90.
- Matsueda, Ross. The Current State of Differential Association. *Crime & Delinquency*. 1988; 34:277–306.
- Messner, Steven F.; Thome, Helmut; Rosenfeld, Richard. Institutions, Anomie, and Violent Crime: Clarifying and Elaborating Institutional-Anomie Theory. *International Journal of Conflict and Violence*. 2008; 2:163–181.
- Moretti, Enrico. Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data. *Journal of Econometrics*. 2004; 121:175–212.
- Myers, David G. *The American Paradox: Spiritual Hunger in an Age of Plenty*. New Haven, CT: Yale University Press; 2001.
- Patrick, Megan E.; Schulenberg, John E. Alcohol Use and Heavy Episodic Drinking Prevalence and Predictors among National Samples of American Eighth- and Tenth-Grade Students. *Journal of Studies on Alcohol and Drugs*. 2010; 71:41–45. [PubMed: 20105412]
- Patrick, Megan E.; Schulenberg, John E. Prevalence and Predictors of Adolescent Alcohol Use and Binge Drinking in the United States. *Alcohol Research: Current Reviews*. 2013; 35:193–200. [PubMed: 24881328]
- Peterson, Peggy L.; David Hawkins, J.; Abbott, Robert D.; Catalano, Richard F. Disentangling the Effects of Parental Drinking, Family Management, and Parental Alcohol Norms on Current Drinking by Black and White Adolescents. *Journal of Research on Adolescence*. 1994; 4:203–227.
- Pettigrew, Thomas F.; Tropp, Linda R. A Meta-Analytic Test of Intergroup Contact Theory. *Journal of Personality and Social Psychology*. 2006; 90:751–783. [PubMed: 16737372]
- Roche, Kathleen M.; Mekos, Debra; Alexander, Cheryl S.; Astone, Nan Marie; Bandeen-Roche, Karen; Ensminger, Margaret E. Parenting Influences on Early Sex Initiation among Adolescents: How Neighborhood Matters. *Journal of Family Issues*. 2005; 26:32–54.
- Roettger, Michael E.; Swisher, Raymond R.; Kuhl, Danielle C.; Chavez, Jorge. Paternal Incarceration and Trajectories of Marijuana and Other Illegal Drug Use from Adolescence into Young Adulthood: Evidence from Longitudinal Panels of Males and Females in the United States. *Addiction*. 2011; 106:121–132. [PubMed: 20874861]
- Sampson, Robert J.; Wilson, William Julius. Toward a Theory of Race, Crime, and Urban Inequality. In: Hagan, J.; Peterson, RD., editors. *Crime and Inequality*. Stanford: Stanford University Press; 1995. p. 37-54.
- Seffrin, Patrick M. Alcohol Use among Black and White Adolescents: Exploring the Influence of Interracial Friendship, the Racial Composition of Peer Groups, and Communities. *The Sociological Quarterly*. 2012; 53:610–635.
- Snedker, Karen A.; Herting, Jerald R.; Walton, Emily. Contextual Effects and Adolescent Substance Use: Exploring the Role of Neighborhoods. *Social Science Quarterly*. 2009; 90:1272–1297.
- Stock, Michelle L.; Gibbons, Frederick X.; Gerrard, Meg; Houlihan, Amy E.; Weng, Chih-Yuan; Lorenz, Fred O.; Simons, Ronald L. Racial Identification, Racial Composition, and Substance Use Vulnerability among African American Adolescents and Young Adults. *Health Psychology*. 2012; 32:237–247. [PubMed: 23088177]
- Strunin, Lee. Assessing Alcohol Consumption: Developments from Qualitative Research Methods. *Social Science & Medicine*. 2001; 53:215–226. [PubMed: 11414388]

- Swisher, Raymond R.; Kuhl, Danielle C.; Chavez, Jorge M. Racial and Ethnic Differences in Neighborhood Attainments in the Transition to Adulthood. *Social Forces*. 2013; 91:1399–1428.
- Tobler, Amy L.; Livingston, Melvin D.; Komro, Kelli A. Racial/Ethnic Differences in the Etiology of Alcohol Use among Urban Adolescents. *Journal of Studies on Alcohol*. 2011; 72:799–810.
- Toomey, Traci L.; Komro, Kelli A.; Michael Oakes, J.; Lenk, Kathleen M. Propensity for Illegal Alcohol Sale to Underage Youth in Chicago. *Journal of Community Health*. 2008; 33:134–138. [PubMed: 18196448]
- Townsend, Tiffany G.; Belgrave, Faye Z. The Impact of Personal Identity and Racial Identity on Drug Attitudes and Use among African American Children. *Journal of Black Psychology*. 2000; 26:421–436.
- USDHHS. U. S. D. o. H. a. H. Services. Healthy People 2020. Vol. 2012. Washington, DC: Office of Disease Prevention and Health Promotion; 2012. <http://www.healthypeople.gov>
- Vega, William A.; Gil, Andres G. A Model for Explaining Drug Use Behavior among Hispanic Adolescents. *Drugs & Society*. 1998; 14:57–74.
- Vega, William A.; Gil, Andres G.; Wagner, Eric. Cultural Adjustment and Hispanic Adolescent Drug Use. In: Vega, William A.; Gil, Andres G., editors. *Drug Use and Ethnicity in Early Adolescence*. New York, NY: Kluwer Academic Publishers; 2002. p. 125–148.
- Wagenaar, Alexander C.; Perry, Cheryl L. Community Strategies for the Reduction of Youth Drinking: Theory and Application. *Journal of Research on Adolescence*. 1994; 4:319–345.
- Wallace, John M, Jr. The Social Ecology of Addiction: Race, Risk, and Resilience. *Pediatrics*. 1999; 103:1122–1127. [PubMed: 10224199]
- Wallace, John M., Jr; Muroff, Jordana R. Preventing Substance Abuse among African American Children and Youth: Race Differences in Risk Factor Exposure and Vulnerability. *The Journal of Primary Prevention*. 2002; 22:235–261.
- Waters, Mary C. *Black Identities*. Cambridge, MA: Harvard University Press; 2009.
- Wechsler, Henry; Nelson, Toben F. Binge Drinking and the American College Student: What's Five Drinks? *Psychology of Addictive Behaviors*. 2001; 15:287–291. [PubMed: 11767258]
- Wen, Ming; Browning, Christopher R.; Cagney, Kathleen A. Poverty, Affluence, and Income Inequality: Neighborhood Economic Structure and Its Implications for Health. *Social Science & Medicine*. 2003; 52:843–860.
- Whaley, Rachel Bridges; Smith, Justin M.; Hayes-Smith, Rebecca. Teenage Drug and Alcohol Use: Comparing Individual and Contextual Effects. *Deviant Behavior*. 2011; 32:818–845.

Biographies

ANDREA G. KRIEG is currently an assistant professor in the Department of Justice, Law, and Public Safety Studies at Lewis University. Her current research focuses on locational attainments and individual's choices in residence as well as how the self-concept affects these decisions.

DANIELLE C. KUHL is Associate Professor of Sociology at Bowling Green State University. Her current research focuses on the neighborhood context of health, delinquency, and substance use, and violence over the life course.

Figure 1.
Effect of neighborhood advantage on binge drinking.

Figure 2.
Effect of neighborhood racial composition on binge drinking for hispanics.

Table 1

Sample means and standard deviations for the full sample and by race/ethnicity.

	Full sample			White			Black ^a			Hispanic ^b			Other ^c		
	M	SE		M	SE		M	SE		M	SE		M	SE	
Individual Level															
Binge Drinking (W2)	0.281			0.344 <i>abc</i>			0.132 <i>bc</i>			0.293 <i>c</i>			0.212		
Family SES	5.534	0.022		5.904 <i>abc</i>	0.029		5.431 <i>bc</i>	0.050		4.255 <i>c</i>	0.049		6.031	0.081	
Male	0.488			0.488 <i>ab</i>			0.465 <i>bc</i>			0.499 <i>c</i>			0.524		
Age	15.354	0.013		15.241 <i>bc</i>	0.018		15.299 <i>bc</i>	0.030		15.626	0.032		15.720	0.047	
Two Biological Parent Household	0.533			0.593 <i>abc</i>			0.321 <i>bc</i>	0.008		0.536			0.688	0.014	
Grades	2.237	0.006		2.137 <i>abc</i>	0.009		2.397 <i>bc</i>	0.013		2.454 <i>c</i>	0.016		2.026	0.024	
Prior Binge Drinking (W1)	0.245			0.292 <i>abc</i>	0.005		0.130 <i>bc</i>			0.268 <i>c</i>			0.179		
Peer Use	1.036	0.010		1.135 <i>abc</i>	0.013		0.859 <i>b</i>	0.020		1.030 <i>c</i>	0.023		0.829	0.032	
Neighborhood Level															
Neighborhood Advantage	0.178	0.001		0.187 <i>abc</i>	0.001		0.158 <i>bc</i>	0.002		0.161 <i>c</i>	0.002		0.206	0.003	
White Neighborhood	0.636			0.912 <i>abc</i>			0.243 <i>bc</i>			0.356			0.372		
Black Neighborhood	0.080			0.004 <i>abc</i>			0.349 <i>bc</i>			0.018			0.020		
Hispanic Neighborhood	0.037			0.001 <i>bc</i>			0.003 <i>bc</i>			0.204 <i>c</i>			0.015		
Integrated Neighborhood	0.247			0.083 <i>abc</i>			0.406 <i>c</i>			0.422 <i>c</i>			0.593		
Alcohol Availability	0.287	0.001		0.309 <i>ab</i>	0.002		0.225 <i>bc</i>	0.003		0.280 <i>c</i>	0.003		0.311	0.004	
Conservative Denomination	0.167	0.001		0.177 <i>abc</i>	0.002		0.212 <i>bc</i>	0.003		0.109 <i>c</i>	0.002		0.097	0.002	
Low Religiosity	0.018	0.003		0.094 <i>abc</i>	0.004		-0.193 <i>bc</i>	0.006		0.039 <i>c</i>	0.006		0.016	0.009	
Level-1 N	20,487			10,922			4,432			3,504			1,629		
Level-2 N	2,446														

abc indicate significant differences across racial/ethnic groups.

Table 2

Hierarchical logistic regression models of binge drinking ($N = 20,487$).

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	OR	OR	OR	OR	OR	OR	OR
<i>Level-1 Fixed Effects</i>							
Black	0.617***	0.715***	0.729***	0.789***	0.734***	0.718***	0.743***
Hispanic	0.925 [†]	0.848**	0.853**	0.926	0.850**	0.840***	0.851**
Other	0.780***	0.874*	0.867*	0.936	0.874*	0.866*	0.880*
Prior Binge Drinking		3.216***	3.213***	3.210***	3.207***	3.215***	3.209***
Family SES		1.007	1.000	1.006	1.004	1.007	1.007
Male		1.137***	1.137***	1.134***	1.139***	1.138***	1.137***
Age		1.369***	1.370***	1.373***	1.370***	1.369***	1.369***
Two Bio Parent HH		0.915**	0.912**	0.912**	0.912**	0.916***	0.918*
Grades		1.123***	1.126***	1.125***	1.125***	1.120***	1.119***
Peer Use		1.282***	1.281***	1.280***	1.281***	1.283***	1.281***
<i>Level-2 Fixed Effects</i>							
Neighborhood Advantage			2.142***				
Black Neighborhood				0.826*			
Hispanic Neighborhood				0.784*			
Integrated Neighborhood				0.856***			
Alcohol Availability					1.519**		
Conservative Denomination						0.871	
Low Religiosity							1.176*
Intercept	1.107***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
<i>Random Effect</i>							
Tau	0.260	0.199	0.194	0.189	0.196	0.198	0.192
F	48.29***	323.21***	294.71***	249.27***	291.15***	293.73***	288.01***

<i>Variables</i>	Model 8	Model 9	Model 10	Model 11
	OR	OR	OR	OR
<i>Level-2 Fixed Effects</i>				
Neighborhood Advantage	2.325***			1.874**
Black Neighborhood		0.751	0.865 [†]	0.878
Hispanic Neighborhood		0.761	0.971	0.769*
Integrated Neighborhood		0.819	0.915	0.944
Alcohol Availability				1.246
Conservative Denomination				
Low Religiosity				1.102
N'Hood Advantage* Black	0.381*			0.328*
N'Hood Advantage* Hisp	2.157			
N'Hood Advantage* Other	0.782			
Black* Black N'Hood		1.203		
Black* Hispanic N'Hood		1.374		
Black* Integrated N'Hood		1.191 [†]		1.019
Hispanic* Black N'Hood			0.741	
Hispanic* Hispanic N'Hood			0.715	
Hispanic* Integrated N'Hood			0.773*	0.809*
Intercept	0.003***	0.003	0.003***	0.003***
<i>Random Effect</i>				
Tau	0.190	0.185	0.184	0.170
F	232.24***	202.75***	203.10***	167.04***

[†] $p < .1$,

* $p < .05$,

** $p < .01$,

*** $p < .001$;

SE and confidence intervals are omitted due to space constraints; these models also control for all the level-1 effects from previous models.