neighborhood, school, and family effects on the frequency of alcohol use among toronto youth

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this study examines the effect of neighborhood, school, and family indicators on adolescent drinking. the toronto drugs, alcohol, and violence international (davi) data were collected in 2001–2002. the sample was stratified both by region (city vs. outskirts) and by the socio-economic status of the schools. two schools from each stratum were randomly selected and 910 students completed the survey. the survey contains extensive measures of substance use, violence, and mental health. the study uses cluster analysis and multinomial logits to examine the variation in the effect of schools, family, and demographic indicators on alcohol use across neighborhood contexts. study implications and suggestions for future research are included. the study was partially funded by nida grant #r01-da11691-01a1.

keywords alcohol, adolescent, neighborhood, collective efficacy, family, schools, social disorganization, canada, minority concentration, diversity

while evidence from the ontario student drug use survey (osdus) suggests that ontario adolescents’ rate of alcohol use has been declining over the past decade, the proportion of adolescents reporting the use of alcohol in the past year is still very high (58%) (paglia-boak, mann, adlaf, & rehm, 2009). this use of alcohol is not without consequence. roughly, 12% of toronto students are estimated to be hazardous users of alcohol, while 10% report being the victim, or perpetrator, of harm as a result of their use of alcohol (paglia-boak et al., 2009). while these overviews are useful, they tell us nothing about how the use of alcohol by adolescents may vary within geographical units such as a city. more specifically, we would like to know more about how these hazardous drinkers are distributed. if rates of alcohol use vary across neighborhoods, it is also possible that the strength of individual-level risk and protective factors may also vary across neighborhoods.

this research examines the impact of neighborhood and individual-level factors as predictors of alcohol use in a sample of high school students drawn from the toronto area. while investigators have examined different variables, recent research has suggested that neighborhood context is important when examining individual-level factors associated with adolescent drinking (chuang, ennett, bauman, & foshee, 2009; snedker, herting, & walton, 2009). however, these studies focused on samples drawn from the united states. less is known about how neighborhood elements affect youth drinking through individual factors such as the school and family in canada. this research centers on how neighborhood elements such as neighborhood disadvantage (wilson, 1996) and collective efficacy (sampson, raudenbush, & earls, 1997) affect youth alcohol consumption.

literature review and theoretical orientation

shaw and mckay pioneered studies of juvenile delinquency in chicago neighborhoods. they determined that certain neighborhoods continued to have high crime rates despite changes in the racial and ethnic compositions and large amounts of residential turnover in the neighborhoods over time. further, they concluded that as individuals, juvenile delinquents were not dissimilar to their nondelinquent counterparts in most ways, and argued that most of the variation in delinquency was at the neighborhood level of analysis (shaw & mckay, 1942).

while shaw and mckay (1942) noted that the majority of neighborhoods which were high in crime were economically disadvantaged and had higher concentrations of ethnic and racial minorities, they did not believe that these factors were the direct causes of the crime rate. instead, they argued that economic disadvantage and ethnic/racial heterogeneity increase social disorganization, which in turn increase the rates of crime and juvenile delinquency. social disorganization results from a combination of the
breakdown of the networks of informal social control in a
neighborhood and the resulting possible entrance of pro-
deviant ideologies.

Sampson and colleagues extended the work of Shaw
and McKay by specifying the informal social control
everted by a neighborhood in order to control crime
within its boundaries (Morenoff, Sampson, & Rauden-
bush, 2001; Sampson, 1985; Sampson & Groves, 1989).
They defined this neighborhood informal social control as
“collective efficacy.” Collective efficacy refers to a shared
set of values and sense of trust among neighbors with re-
gard to controlling undesirable behavior in the neighbor-
hood (Sampson et al., 1997). In general, increases in col-
lective efficacy are expected to decrease the neighborhood
rates of delinquency.

Bursik’s (1988) reformulation of social disorganization
theory clearly outlines that neighborhood disadvantage
operates through the neighborhood’s propensity for infor-
mal surveillance and direct intervention. Ruth Kornhauser
(1978) suggested possible explanations for how economic
disadvantage and ethnic heterogeneity reduce neighbor-
hood social control. First, residents in severely disadvan-
taged neighborhoods may not feel the need to protect a
community they view as undesirable and plan on leaving
as soon as possible (Kornhauser, 1978). This lack of com-
mitment to the community erodes the informal control of
juvenile delinquency. Second, social control at the neigh-
borhood level may be thwarted by ethnic heterogeneity,
especially if residents do not share a common language
(Kornhauser, 1978). Ethnic and language barriers prohibit
the formation of informal ties to community members and
make the chastisement of neighborhood children’s behavior
difficult.

The other major sociological theory with ties to so-
cial disorganization theory is Hirschi’s (1969) social con-
tral theory. Hirschi (1969) believed that crime and delin-
quency is caused by weakened or broken social bonds.
This version of control theory is known as bonding theory,
and sees social ties as composed of four elements: attach-
ment, involvement, commitment, and belief. However,
Hirschi did not examine how a social bond between resi-
dents of a neighborhood affected individual delinquency.

Sampson and Groves (1989) produced a test of social
disorganization theory that included measures of infor-
mal social control. Two sets of neighborhood variables
were included: measures of neighborhood disadvantage
and measures of neighborhood networks. The measures of
neighborhood disadvantage included socio-economic sta-
tus (SES), residential mobility, and ethnic heterogeneity.
Neighborhood networks were measured by local friend-
ship ties, the presence of unsupervised peer groups, and the
rate of participation in neighborhood organizations.
The results were consistent with the expectations of Shaw
and McKay and others. Neighborhood disadvantage limited
neighborhood networks, which in turn increased the rate
delinquency and victimization.

Influenced by the ideas of his colleagues at Chicago,
William Julius Wilson (“the truly disadvantaged”) and
James Coleman (“social capital”), Sampson adapted the
concept of neighborhood informal social control as “col-
lective efficacy.” He defines it as “social cohesion among
neighbors combined with their willingness to intervene
on behalf of the common good” (Sampson et al., 1997, p. 918).
More generally, it refers to “a mutual trust and shared expectations” among neighbors (Sampson,
Morenoff, & Gannon-Rowley, 2002). In a departure from
social network theory’s examination of close friendship
ties in the community, collective efficacy does not require
neighbors to be close friends or intimately acquainted
(Morenoff et al., 2001; Sampson, 2004). Collective effi-
cacy is not completely independent of the level of disad-
antage in the neighborhood. Neighborhoods with high
levels of economic disadvantage and high concentrations
of immigrants are expected to have low levels of collective
efficacy (Sampson, Morenoff, & Earls, 1999).

In this paper, I borrow Sampson’s concepts of neigh-
borhood disadvantage and collective efficacy at the macro
level. At the micro level, I combine elements of Hirschi’s
social control theory and Sampson’s collective efficacy.
While Hirschi (1969) was concerned with multiple ele-
ments of the relationship between an individual and other
social entities, it is possible that only a weak positive rela-
tionship is necessary as Sampson et al. (2002) discovered
for neighborhoods. To test this idea, I extended Samp-
son and colleagues’ definition of collective efficacy to in-
clude the school and family, referring to them as school
efficacy and family efficacy. Schools and families are of-
ten included in social control studies of juveniles but are
rarely included in studies of social disorganization (Bur-
sik, 1988). Extending the concept of efficacy in this way
facilitates tests of whether the neighborhood level of so-
cial disorganization affects the operation of more distally
proximate sources of efficacy.

**Neighborhood Disadvantage and Substance Use**

Many previous studies have shown that neighborhood
disadvantage is an extremely important predictor of in-
creased use of alcohol and other substances (Hays,
Hays, & Mulhall, 2003; Hill & Angel, 2005; Jang &
Johnson, 2001). Neighborhood characteristics may also
influence both the availability and the acceptability of sub-
stance use (Jang & Johnson, 2001; Ramos-Lira, Gonzales-
Fortezza, & Wagner, 2006). Disadvantaged neighborhoods
are more likely to provide opportunities to use sub-
stances than other neighborhoods (Storr, Chen, & An-
thony, 2004). Indeed, while it is typically accepted that
substance use is common among adolescents, relatively
little neighborhood-level research has examined effects on
an adolescent population (Jang & Johnson, 2001). Some
recent studies of adolescent alcohol use have included
neighborhood context. These studies found that neighbor-
hood context affected the strength of individual protective
and risk factors for adolescent alcohol use (Chuang et al.,
2009; Snedker et al., 2009).

Lo, Anderson, Minugh, and Lomuto (2006) examined
protective and risk factors for the frequency of drug and
alcohol use in a sample of nearly 93,000 middle- and
high-school students in Alabama. Surprisingly, they found
that neighborhood disadvantage was associated with decreased frequency of alcohol, marijuana, and other drug use among these students. Moreover, the effects of both protective and risk factors were reduced for students living in disadvantaged neighborhoods (Lo et al., 2006). Snedker et al.’s (2009) findings were similarly inconsistent with the social disorganization theory. They found that youth in disadvantaged neighborhoods had lower rates of substance use and were less influenced by deviant peers than their more advantaged counterparts.

Collective Efficacy and Substance Use
There has been very little research on the implications of collective efficacy for individual substance use. In a study of undergraduates, Brady (2006) found no significant relationship between collective efficacy and lifetime substance use. This lack of relationship may be due to the secretive nature of substance use. While Brady (2006) looked at substance use in general, there may be different effects based on the substance in question. Alcohol use may be less secretive than other substance use. This would imply that the relevance of collective efficacy may vary based on substance type.

A recent study using Canadian data suggests that collective efficacy may be affected by the racial and ethnic composition of neighborhoods (Hou & Wu, 2009). The researchers looked at the effect of both racial diversity and minority concentration on trust in neighborhoods. Racial diversity refers to the number of similarly sized ethnic and racial groups in a neighborhood, while minority concentration refers to the overall size of the minority population relative to the majority population (Hou & Wu, 2009). They found that Whites tend to report lower trust in their neighbors as the minority concentration increases but reported higher trust when racial diversity increased (holding concentration constant). Thus, diversity appears to increase trust as long as Whites remain the dominant group in the neighborhood. No similar effect was found for racial minorities.

School Efficacy and Substance Use
In a widely cited article, Hawkins, Catalano, and Miller (1992) provide a summary of major findings of previous research on many aspects of the school domain and the substance use patterns of adolescents. They found evidence that both peer rejection in school and truancy increased drug use among adolescents. The degree to which students “like” school was also found to be related to adolescents’ use of substances. Again, the vast majority of the research reviewed by Hawkins et al. (1992) used a control theory framework.

In more recent research, Voelkl and Frone (2000) concluded that measures such as grade point average and educational aspirations were unrelated to the use of substances in school. However, measures of school attachment and having a “sense of belonging” to the school were negatively related to the use of alcohol on school grounds. Similarly, adolescents who reported that school is “worth-
measure measures the students’ comfort by discussing problems and feelings with parents as does the current study’s family efficacy measure. There is also some overlap between Catalano et al.’s (1992) measure of proactive family management and family efficacy. Proactive family management contains items about the use of praise for various accomplishments. This could be linked to family efficacy’s item on whether the student’s parents have confidence in them. Given the operationalization of family efficacy in the current study, the importance of family efficacy may be attenuated in the presence of higher concentrations of Asian youth and may be stronger for Whites and Blacks.

**Demographics and Substance Use**

Not surprisingly, among juveniles, the use of alcohol has been found to increase with age (Barnes et al., 2000; Bryant et al., 2003). The results have been more variable for race and gender. Many researchers have concluded that Blacks use less alcohol than Whites do (Barnes et al., 2000; Bryant, Schulenberg, O’Malley, Bachman, & Johnston, 2003; McNulty & Bellair, 2003; Wallace & Muroff, 2002). While Bryant and Zimmerman (2002) report that marijuana use increased at a slower rate for Blacks than for Whites, they found no racial difference in alcohol use. Perhaps more relevant for this Toronto sample, previous research has generally found that Asians have lower levels of alcohol and substance use than any other minority group in both American (Barnes, Welte, & Hoffman, 2002; Wall, Shea, Chan, & Carr, 2001) and Canadian samples (Adlaf, Smart, & Tan, 1989; Cheung, 1993). Furthermore, previous research has found significant variation in alcohol use by subgroups of Asians, with the Chinese generally having the lowest rates of alcohol use relative to other Asians (Wong, Kingle, & Price, 2004). While the current dataset does not contain information on specific country of ethnicity, the Chinese are the largest ethnic group in Toronto. This suggests that the current sample will have low rates of alcohol use among minorities when compared to American research.

The gender effect for the use of alcohol is also unclear. Some studies report that males use more alcohol than females (Barnes et al., 2000), while others have found no gender difference in alcohol consumption (Bryant & Zimmerman, 2002). More recent research has found that females use more alcohol than males (Bryant et al., 2003; Lo et al., 2006). Although it is unclear what is causing these conflicting conclusions, the data may reflect a changing pattern over time.

As noted, previous macro-level research on neighborhood disadvantage and collective efficacy has focused largely on US and, to a lesser extent, UK samples. These studies have generally found a positive relationship between neighborhood disadvantage and substance use (see Boardman, Finch, Ellison, Williams, & Jackson, 2001; Rankin & Quane, 2002). While less conclusive, the majority of previous studies of collective efficacy have found that it is inversely related to general delinquency (see Simcha-Fagan & Schwartz, 1986). However, these studies tell us little about how the neighborhood context may affect the behavior of individuals. More importantly, these studies tell us nothing about how the neighborhood context may affect the strength of various individual-level protective and risk factors.

This study draws on a Toronto area school sample known as the Toronto Drugs, Alcohol, and Violence International (DAVI) study. The research team was able to collect postal codes to facilitate the linkage of individual student survey results (collected in 2001) with data from the 2001 Canadian Census. At the neighborhood level, I use two indicators of neighborhood disadvantage: the percentage of household considered “low income” and the concentration of immigrants. I also include a measure of collective efficacy that was aggregated from the individual survey results. At the individual level, I included family efficacy, school efficacy, and the demographic variables race, gender, and age. The frequency of alcohol use was modeled using multinomial logistic regression. To determine the impact of neighborhood context, neighborhoods were submitted to cluster analysis and grouped by similar values on the neighborhood-level variables.

This study extends and expands previous research in several ways. The sampling strategy and collection of postal codes allows for the integration of macro- and micro-level data that is critical for engaging in some of the most current criminological and sociological debates. Second, this study provides the opportunity to examine neighborhood effects in a large city outside of the United States or Great Britain. The demographic differences between US and Canadian cities are clear. In the United States, the racial categories of “White vs. non-White” overwhelmingly indicate “White vs. Black or Hispanic.” However, in major Canadian cities such as Toronto or Vancouver, this dichotomy will more likely indicate White vs. Asian. In fact, the sample used in this study is 56.9% White, 22.5% Asian, 9.8% mixed, 6.8% Black, and 2.1% Hispanic. Clearly, the interpretation of the minority category in this context will vary considerably from those typical of US research. The concentration of immigrants in Toronto is also much higher than what is typically found in US cities (roughly 45% vs. 10%, respectively). These differences provide a further test of the applicability of social disorganization theory in other contexts.

In light of previous research, this study proceeded with a series of hypotheses in mind. They are as follows:

1. Higher levels of collective efficacy are associated with lower rates of alcohol use.
2. Higher levels of neighborhood disadvantage are associated with lower rates of alcohol use.
3. Higher levels of family efficacy are associated with lower rates of alcohol use.

(a) The strength of the association between frequency of alcohol use and family efficacy is stronger in neighborhoods with higher levels of disadvantage.
4. Higher levels of school efficacy are associated with lower rates of alcohol use.
(a) The strength of the association between frequency of alcohol use and school efficacy is stronger in neighborhoods with higher levels of disadvantage.

The Toronto DAVI School Sample
The survey was administered to 983 Toronto area school children in Grades 9 through 12 between October 2001 and May 2002. The sampling design was stratified by region (city vs. outskirts) and SES of the school (low vs. other). Two schools from each stratum were randomly selected, resulting in eight schools.

Next, a single class from each grade level at each school was randomly selected to complete the survey. The largest required course (usually English) was used to ensure that each student had a reasonably equal chance of selection. As a result, the survey was administered to 32 classrooms. Precisely, 72.8% of the students completed the survey. Approximately 37% of the students attend a low SES school.

In order to examine neighborhood-level effects, I merged the DAVI survey with a subset of the 2001 Canadian Census for the Toronto area. The census data contained information at the level of forward sortation area (FSA). The FSA is similar to a U.S. Census tract and is denoted by the first half of the Canadian postal code. This is not a perfect measure of a neighborhood, but it is a fairly common and robust indicator (Sampson et al., 2002). Defining a neighborhood as a FSA also creates more individuals per neighborhood than would have resulted from using the entire postal code.

Measurement
The original variable for alcohol use on the DAVI survey measures the frequency of alcohol use in the previous year. Responses are coded as follows:

1. Do not drink alcohol
2. Never in past year
3. Less than once a month
4. Once or twice each month
5. Once or twice each week
6. Three to six times each week
7. Everyday

The results of a preliminary ordered logit analysis on this variable indicated that some of these categories could be collapsed, as there are no significant differences between the adjacent categories. The categories of “don’t drink alcohol” and “never in past year” are collapsed into a single “nondrinker” category. The categories of “less than once a month” and “once or twice each month” are collapsed into a “casual drinker” category. The remaining categories are combined into a “regular drinker” category. The resulting dependent variable is measured on an ordinal scale. After determining that an ordered logit was inappropriate due to a violation of the proportional odds assumption, I use a multinomial logit to analyze this dependent variable.

Neighborhood Disadvantage
Two measures of neighborhood disadvantage are selected from a large number of possible indicators based on their high partial correlations with the dependent variable and their relatively low correlations with each other. Both are taken from the 2001 Canadian Census. The proportion of low-income residents in a neighborhood is used as a measure of economic disadvantage. Census Canada does not define low income as a measure of poverty per se. Instead, they view it as a measure of relative disadvantage or the point at which a disproportionate amount of income must go toward basic necessities. The rate is adjusted for the size of the household and the population size. FSAs with higher concentrations of low-income households are defined as relatively more disadvantaged than those with lower concentrations of low-income households.

The other measure of neighborhood disadvantage measures the proportion of immigrants in the FSA. Generally, a high proportion of immigrants is thought to indicate reduced access to mainstream society either through language or cultural barriers. Higher proportions of immigrants in a neighborhood are indicative of higher levels of neighborhood disadvantage.

Collective Efficacy
Following the example set forth in Sampson et al. (1997), the measure of collective efficacy is aggregated to the neighborhood level from the individual responses. There are eight statements on the DAVI survey related to shared beliefs among neighbors and three questions related to beliefs that neighbors would intervene if necessary. Each uses a five-point Likert scale of responses (strongly disagree/very unlikely to strongly agree/very likely). The items are as follows:

Shared Beliefs
1. In my neighborhood, people are willing to help their neighbors.
2. People in my neighborhood can be trusted.
3. People in my neighborhood generally get along with each other.
4. People in my neighborhood share the same values.
5. Parents in my neighborhood know their children’s friends.
6. Adults in my neighborhood know who the local children are.
7. There are adults in my neighborhood whom children can look up to.
8. Parents in my neighborhood generally know each other.

Intervention Likelihood
1. If children were skipping school and hanging out on the street corner, how likely is it that your neighbors might do something?
2. If children were spray-painting graffiti on local buildings, how likely is it that your neighbors might do something?
1. I have family who would always take the time to talk over problems should I want them there for me should I need them.  
2. No matter what happens I know that my family will be there for me should I need them.  
3. I know that my family has confidence in me.  
4. I sometimes feel that my family expects more from me than they are willing to give (reverse coding).  
5. I have family who come to me to talk over problems should I want to.

By summing the responses to these five questions, the family efficacy measure has a possible range of 0–5 points. These questions appear to tap in to the same notions of shared expectations and trust as the concept of collective efficacy at the neighborhood level. Higher scores on family efficacy indicate higher levels of trust and mutual support in the family.

The measure of school efficacy is also based on the logic of collective efficacy. A six-part item from the DAVI survey is used to assess the amount of trust students had in their school environment and a subjective measure of the quality of their school. The response choices are measured on a five-point Likert scale, with 0 corresponding to “strongly disagree” and 4 corresponding to “strongly agree” (reverse coding as indicated). The six statements are as follows:

1. At school, I worry that someone will harm, threaten, or take something from me (reverse coding).  
2. I feel safe in my school.  
3. I feel close to the people at this school.  
4. I feel like I am a part of this school.  
5. Most teachers in my school are excellent.  
6. Most courses offered at my school are challenging.

Summing these responses leads to a possible range of scores from 0 to 24 points. Higher scores correspond to higher levels of school efficacy.

Cluster Analysis
In order to sort similar neighborhoods into categories, I use cluster analysis. Cluster analysis is a type of statistical analysis that is useful for determining which objects in a sample contain similar characteristics (Romesburg, 2004). In the context of this research, I use cluster analysis to determine which neighborhoods are similar based on their proportion of immigrants, proportion of low-income households, and their mean level of collective efficacy. The objects of analysis for the cluster analysis are the FSAs that are represented by the students in the survey. I use the most widely used type of cluster analysis, hierarchical cluster analysis, which leads to a hierarchical set of classifications. In the first set of classifications, each FSA is considered to be its own “cluster.” In the final set of classifications, all FSAs are considered to be a single cluster (Everitt & Der, 1996).

A certain amount of subjectivity is inherent to cluster analysis, as there is not necessarily a single “best solution.” Seeking a solution with many clusters with a limited data-set would result in very small clusters and relatively meaningless comparisons of poorly estimated models. Ultimately, the results of the cluster analysis are used to assign the respondents into clusters based on their FSA. These clusters are then analyzed separately and the results are compared with the other clusters. Differences in the results of the analyses by cluster suggest differing effects of the variables of interest by neighborhood context.

Multinomial Logits
A multinomial logit model is one of several ways to analyze data in which the dependent variable is measured on an ordinal scale with more than two possible outcomes. They are used when the dependent variable is measured with either (1) unordered response categories or (2) ordered response categories in which the effect of independent variables varies between categories (Borooah, 2002). In the present research, multinomial logits are used because of the latter. Multinomial models estimate the relative risk of a particular outcome with respect to a reference category (Borooah, 2002). By exponentiating a coefficient, one can calculate the multiplicative effect of a one-unit increase in a variable of interest on the odds of being in a particular category as opposed to the reference category.
TABLE 1. Descriptive statistics for neighborhood level variables by cluster (mean with standard deviation in parentheses)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Immigrant concentration</th>
<th>Low-income concentration</th>
<th>Collective efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>62.92 (4.74)</td>
<td>24.98 (5.97)</td>
<td>20.90 (3.19)</td>
</tr>
<tr>
<td>2</td>
<td>52.02 (6.42)</td>
<td>22.23 (3.62)</td>
<td>25.93 (2.50)</td>
</tr>
<tr>
<td>3</td>
<td>47.64 (8.74)</td>
<td>14.30 (4.87)</td>
<td>18.06 (4.58)</td>
</tr>
<tr>
<td>4</td>
<td>34.32 (7.50)</td>
<td>11.23 (4.13)</td>
<td>29.13 (3.16)</td>
</tr>
</tbody>
</table>

RESULTS AND DISCUSSION

After standardizing the variables, I submitted the 68 neighborhoods to complete linkage cluster analysis. Values of bimodality greater than 0.55 indicate a bimodal distribution and suggest that cluster analysis is inappropriate (Everitt & Der, 1996). All of the variables I used for my analysis scored well below 0.55, indicating that they are appropriate for cluster analysis.

Prior to the cluster analysis, I determined the optimal number of clusters for the remaining analyses. In order to compare the effects of neighborhood disadvantage and collective efficacy, it was desirable to have at least four clusters. This allows for the possibility of the following combinations: high disadvantage/low collective efficacy, high disadvantage/high collective efficacy, low disadvantage/low collective efficacy, and low disadvantage/high collective efficacy. With this a priori assumption, I cut the dendrogram at the four-cluster solution. Table 1 displays the descriptive statistics for the neighborhood-level variables from the resulting four clusters.

Cluster 1 has both the highest concentration of immigrants and the highest concentration of low-income residents of all the clusters. Cluster 1 also has relatively low levels of collective efficacy (when compared to the complete sample). Interestingly, the mean collective efficacy for Asians, the dominant minority group in this context, is lower than the mean for Asians in the full sample. This may be due to the large concentration of a second minority group in this context, Blacks. Such an effect would be similar to the effect found in Hou and Wu’s (2009) research such that increases in minority concentration are linked to decreases in neighborhood trust. However, Hou and Wu (2009) were not able to find such an effect for any minority group. In this instance, Asians are actually the dominant group in the neighborhood. Overall then, Cluster 1 can be defined as high in neighborhood disadvantage and low in collective efficacy.

Cluster 2 has a relatively high immigrant concentration and an average proportion of low-income residents in relation to the complete sample. It also has average levels of collective efficacy. Again, an interesting pattern appears for the Asian subgroup in terms of collective efficacy. While Asians are no longer the dominant group in this context, they are by far the most dominant minority group. Consistent with Hou and Wu’s (2009) research, the mean level of collective efficacy for Asians in this context is higher than in Cluster 1. Cluster 2 can be defined as slightly disadvantaged with average collective efficacy.

Cluster 3 is average on both neighborhood disadvantage measures. However, Cluster 3 has the lowest collective efficacy of all clusters. Thus, Cluster 3 can be defined as an average neighborhood with low collective efficacy. While the sample size is small for this cluster, the mean level of collective efficacy for Asians in this context is suggestive of another interesting pattern. Relative to the other contexts, the mean level of collective efficacy for Asians is lowest in this cluster. This is also the only context in which Asians are not the dominant minority group (Mixed is the dominant group).

Cluster 4 has the lowest levels of immigrant concentration and low-income households. It also has the highest level of collective efficacy. This context has the highest concentration of Whites (73%). Hou and Wu (2009) suggest that as minority groups obtain success, they move to neighborhoods that have lower concentrations of minority residents. As a result, the minority groups report greater trust in the neighborhoods. The current research is consistent with this idea as the mean level of collective efficacy for Asians (and all other minority groups) is higher in this context than in any of the other contexts. Therefore, Cluster 4 can be defined as the most advantaged neighborhood with the highest collective efficacy.

As Table 2 shows, Cluster 1 has the lowest levels of alcohol use, providing partial support for Hypothesis 2. In fact, it contains as much as twice the proportion of nondrinkers relative to other clusters. It also contains a

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Alcohol</th>
<th>N = 97</th>
<th>N = 504</th>
<th>N = 37</th>
<th>N = 279</th>
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<tbody>
<tr>
<td>1</td>
<td>Nonuser</td>
<td>59.97%</td>
<td>41.67%</td>
<td>37.84%</td>
<td>31.54%</td>
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<tr>
<td></td>
<td>Casual user</td>
<td>31.96%</td>
<td>41.47%</td>
<td>40.54%</td>
<td>50.54%</td>
</tr>
<tr>
<td></td>
<td>Regular user</td>
<td>8.25%</td>
<td>16.87%</td>
<td>21.62%</td>
<td>17.92%</td>
</tr>
<tr>
<td>2</td>
<td>Male</td>
<td>55.67%</td>
<td>53.16%</td>
<td>37.84%</td>
<td>41.79%</td>
</tr>
<tr>
<td></td>
<td>Non-White</td>
<td>91.75%</td>
<td>42.29%</td>
<td>54.05%</td>
<td>27.86%</td>
</tr>
<tr>
<td></td>
<td>Age (years)</td>
<td>3.09%</td>
<td>0.99%</td>
<td>0%</td>
<td>0.36%</td>
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<tr>
<td></td>
<td>&lt;14</td>
<td>12.37%</td>
<td>18.77%</td>
<td>13.51%</td>
<td>19.29%</td>
</tr>
<tr>
<td></td>
<td>15</td>
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<td>15.22%</td>
<td>10.81%</td>
<td>25.00%</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>28.87%</td>
<td>28.85%</td>
<td>29.73%</td>
<td>23.57%</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>21.65%</td>
<td>21.34%</td>
<td>29.73%</td>
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<td>&gt;17</td>
<td>17.53%</td>
<td>14.82%</td>
<td>16.22%</td>
<td>6.79%</td>
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</tbody>
</table>

higher proportion of males than the total sample does. Most glaringly, Cluster 1 is almost entirely non-White (92%). When the minority category is disaggregated (not shown), Asians are the largest ethnic group (37%) in this neighborhood context with Blacks also having a sizeable presence in the neighborhood (29%). This is the only context in which Whites are not the majority group.

Cluster 2 is the largest of all the clusters created ($N = 505$). The levels of alcohol use in Cluster 2 are very similar to the full sample levels (not shown). It contains more males and proportionally fewer non-Whites than does the full sample. While Whites form the majority of this cluster (59%), Asians dominate the minority category (24%) in this context. The second largest minority group is Mixed with a distant 8.5% of the cluster.

Cluster 3 is the smallest of all the clusters ($N = 37$) and contains proportionally more females than any other cluster. The proportion of non-Whites in Cluster 3 is higher than in the total sample. While Whites are the largest ethnic group (46%), the largest minority groups are Mixed at nearly 22% followed by Asians with 19%. This context also has the highest proportion of regular drinkers.

Finally, Cluster 4 has the highest proportion of casual drinkers and the lowest proportion of abstainers. It also contains proportionally fewer males and far fewer non-Whites than does the full sample. This context is dominated by Whites (73%), with Asians (11.5%) and respondents of Mixed race (9%) forming the bulk of the minority category. Since this cluster also has the highest level of collective efficacy, it seems that Hypothesis 1 is not supported by this data. Note that neither Blacks nor Hispanics are the largest minorities in any of the four clusters as is often the case in American samples. Thus, the results of this study should provide important tests of theoretical constructs with non-American samples.

Table 3 displays the descriptive statistics for the continuous variables for each cluster. Cluster 1 has the highest level of school efficacy and Cluster 3 has the lowest level of school efficacy. However, the differences are relatively small. In terms of family efficacy, Cluster 4 has the highest level while Cluster 3 has the lowest level. Again, differences are small.

The results of the multinomial logit are displayed in Table 4. This table displays the odds ratios for each comparison for all clusters. While this information is necessary, Table 5 may offer a more accessible presentation of significant results. Table 5 displays the changes in the expected probabilities of alcohol frequency for each of the models (significant effects only). For each variable, the expected probabilities were calculated while holding all other variables at their means. In the case of the two continuous variables, I selected three meaningful values for the comparisons. The “medium” value was set at the mean for each scale. The “low” and “high” values were set at two standard deviations below and above the mean, respectively.

According to Table 4, there is no race effect in Cluster 1. The lack of a racial effect is likely due to the racial composition of Cluster 1 (over 90% non-White). The racial composition of this context also likely plays a role in this context having the lowest levels of alcohol use in the study. Several previous studies have indicated that Asians have lower rates of alcohol use both in adolescence and adulthood (Adlaf et al., 1989; Cheung, 1993; Wall et al., 2001). As Asians are the dominant racial group in this context, much lower rates of alcohol consumption are consistent with previous findings. In Cluster 1, males appear to be more likely than females to be nondrinkers relative to casual drinkers than are females. Males have 86% higher odds of being abstainers relative to casual drinkers than do females. However, all other comparisons indicate no gender effect. There is also no significant effect of family efficacy in this cluster of neighborhoods. This is also consistent with prior research that found that family relationships, as opposed to structure, were not important for Asian youths’ drinking (Catalano et al., 1992). This implies that in these most disadvantaged neighborhoods, family efficacy is unrelated to frequency of alcohol use.

There is evidence of a positive relationship between age and frequency of alcohol use in Cluster 1. According to Table 5, 14- and 16-year-olds are most likely to be nondrinkers. The oldest students are most likely to be casual users of alcohol. The gap in expected probabilities decreases with increasing age for both the non vs. casual use and the non vs. regular use comparisons. In Cluster 1, each one-unit increase in school efficacy increases the odds of being a nondrinker vs. a regular drinker by 20%. A similar effect is seen for the odds of being a casual drinker vs. regular drinker (22%). This pattern is clearly seen in Table 5. As the level of school efficacy increases, there is a noticeable increase in the difference between the expected probabilities of non or casual use and regular use. For the most disadvantaged neighborhoods, increases in school efficacy may be protective against regular drinking though not against casual use. This may indicate that schools are particularly strong protective factors against adolescent drinking for Asians and other minorities represented in this context.

Moving to Cluster 2, recall that Cluster 2 is a slightly disadvantaged neighborhood with average levels of collective efficacy. While both Cluster 1 and Cluster 2 would be defined as disadvantaged contexts, the effects of many of the variables are markedly different. This indicates an interaction between some facet of the neighborhood

TABLE 3. Descriptive statistics for continuous variables by cluster (mean with standard deviation in parentheses)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>School efficacy</td>
<td>$N = 95$</td>
<td>$N = 498$</td>
<td>$N = 37$</td>
<td>$N = 280$</td>
</tr>
<tr>
<td></td>
<td>16.063</td>
<td>15.845</td>
<td>14.892</td>
<td>15.529</td>
</tr>
<tr>
<td></td>
<td>(3.554)</td>
<td>(3.301)</td>
<td>(3.116)</td>
<td>(3.330)</td>
</tr>
<tr>
<td>Family efficacy</td>
<td>$N = 93$</td>
<td>$N = 492$</td>
<td>$N = 37$</td>
<td>$N = 274$</td>
</tr>
<tr>
<td></td>
<td>3.656</td>
<td>3.754</td>
<td>3.622</td>
<td>3.792</td>
</tr>
<tr>
<td></td>
<td>(1.202)</td>
<td>(1.157)</td>
<td>(1.497)</td>
<td>(1.128)</td>
</tr>
</tbody>
</table>

context and the individual-level variables. It is also important to recall that in Cluster 1, Asians are the dominant group, while in Cluster 2, Whites are the dominant group. In Cluster 2, there are strong significant effects for race. No such race effects were found in Cluster 1, which has a much higher minority concentration. For all three comparisons in Cluster 2, non-Whites were likely to be using alcohol less frequently than were Whites. According to Table 5, Whites are most likely to be casual drinkers while non-Whites are most likely to be nondrinkers in this context. In addition, a much larger proportion of Whites are expected to be regular drinkers than are non-Whites.

Both male and female students are most likely to be casual drinkers in Cluster 2. The significant gender effects are in the direction hypothesized. Being male decreases the odds of being a casual drinker as opposed to a regular drinker by 65% in Cluster 2. There is a similar effect for the odds of being a nondrinker vs. a regular drinker (62%). However, males and females do not differ significantly in their odds of being an abstainer vs. a casual drinker. Notably, the direction of these significant effects is opposite to the gender effect found in Cluster 1. This suggests that there may be an interaction between gender and neighborhood context.

### TABLE 4. Multinomial logit estimation (odds ratios) of frequency of alcohol use by cluster

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect</th>
<th>Cluster 1 (High IMM; High LI; Low CE)</th>
<th>Cluster 2 (High IMM; Avg. CE)</th>
<th>Cluster 3 (Avg. IMM; Avg. LI; Low CE)</th>
<th>Cluster 4 (Low IMM; Low LI; High CE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-White</td>
<td>Non vs. casual</td>
<td>2.44</td>
<td>3.56*</td>
<td>11.13*</td>
<td>1.75</td>
</tr>
<tr>
<td></td>
<td>Non vs. regular</td>
<td>0.00</td>
<td>18.54*</td>
<td>0.91</td>
<td>1.55</td>
</tr>
<tr>
<td></td>
<td>Casual vs. regular</td>
<td>0.00</td>
<td>5.16*</td>
<td>0.08</td>
<td>0.89</td>
</tr>
<tr>
<td>Male</td>
<td>Non vs. casual</td>
<td>1.86*</td>
<td>1.08</td>
<td>0.08*</td>
<td>2.10*</td>
</tr>
<tr>
<td></td>
<td>Non vs. regular</td>
<td>1.06*</td>
<td>0.38*</td>
<td>0.07*</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>Casual vs. regular</td>
<td>0.58</td>
<td>0.35*</td>
<td>0.84</td>
<td>0.52*</td>
</tr>
<tr>
<td>Age</td>
<td>Non vs. casual</td>
<td>0.68*</td>
<td>0.62*</td>
<td>0.37*</td>
<td>0.51*</td>
</tr>
<tr>
<td></td>
<td>Non vs. regular</td>
<td>0.43*</td>
<td>0.54*</td>
<td>0.26</td>
<td>0.53*</td>
</tr>
<tr>
<td></td>
<td>Casual vs. regular</td>
<td>0.64</td>
<td>0.87</td>
<td>0.71</td>
<td>1.03</td>
</tr>
<tr>
<td>School efficacy</td>
<td>Non vs. casual</td>
<td>0.99</td>
<td>1.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non vs. regular</td>
<td>1.20*</td>
<td>1.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Casual vs. regular</td>
<td>1.22*</td>
<td>0.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family efficacy</td>
<td>Non vs. casual</td>
<td>1.28</td>
<td>1.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non vs. regular</td>
<td>0.84</td>
<td>1.70*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Casual vs. regular</td>
<td>0.65</td>
<td>0.31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05.

### TABLE 5. Change in the predicted probabilities of alcohol use by cluster

<table>
<thead>
<tr>
<th>Race</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>.26</td>
<td>.70</td>
<td>.04</td>
<td>.24</td>
</tr>
<tr>
<td>Non-White</td>
<td>.57</td>
<td>.39</td>
<td>.04</td>
<td>.71</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>.41</td>
<td>.53</td>
<td>.06</td>
<td>.69</td>
</tr>
<tr>
<td>Male</td>
<td>.40</td>
<td>.46</td>
<td>.14</td>
<td>.15</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>.80</td>
<td>.19</td>
<td>.01</td>
<td>.64</td>
</tr>
<tr>
<td>16</td>
<td>.64</td>
<td>.31</td>
<td>.05</td>
<td>.40</td>
</tr>
<tr>
<td>&gt; 17</td>
<td>.40</td>
<td>.43</td>
<td>.17</td>
<td>.19</td>
</tr>
<tr>
<td>School eff.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>.56</td>
<td>.23</td>
<td>.21</td>
<td>.24</td>
</tr>
<tr>
<td>Med.</td>
<td>.64</td>
<td>.30</td>
<td>.06</td>
<td>.39</td>
</tr>
<tr>
<td>High</td>
<td>.64</td>
<td>.35</td>
<td>.01</td>
<td>.57</td>
</tr>
<tr>
<td>Family eff.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>.23</td>
<td>.53</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>Med.</td>
<td>.36</td>
<td>.51</td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>.49</td>
<td>.45</td>
<td>.06</td>
<td></td>
</tr>
</tbody>
</table>
The effect of age in Cluster 2 appears to be substantially similar to that found in Cluster 1. As age increases, the odds of being an abstainer decrease. For Cluster 2, increases in school efficacy increase the odds of being a nondrinker relative to a casual drinker (9%). This effect is noticeably smaller than the effects found for school efficacy in Cluster 1. While school efficacy appears to be protective against regular drinking in Cluster 1, it is only protective against casual drinking in Cluster 2. Therefore there is some evidence of an interaction between school efficacy and neighborhood context.

While family efficacy was not significant in Cluster 1, there is a significant effect for Cluster 2. In fact, this is the only cluster in which family efficacy is significant. Increases in family efficacy increase the odds of being a nondrinker relative to a regular drinker by 69%. This effect may be related to dramatically different concentration of Whites between the two contexts. Certain aspects of family relationships (e.g., attachment and proactive parenting) have been shown to be important protective factors for Whites, but not for Asians (Catalano et al., 1992). Thus, family efficacy may be significant in Cluster 2 because of the high concentration of Whites relative to Cluster 1 (where Asians dominate). This evidence suggests that there is an interaction between neighborhood disadvantage and family efficacy.

Cluster 3 is a collection of neighborhoods with average levels of neighborhood disadvantage and very low collective efficacy. As a reminder, Cluster 3 has the highest proportion of regular drinkers. This context also has high racial diversity, which may be playing a factor in the low collective efficacy. For Cluster 3, there is a significant effect of age on the likelihood of being a nondrinker relative to a casual drinker. This effect is much stronger in Cluster 3 than in Cluster 2, as is implied by the much higher discrepancy between the expected proportions of non and casual drinkers in this context. Again, this difference in the minority effect may be attributable to the composition of the non-White category in this context. In Cluster 3, the largest minority group is the “Mixed” category, whereas in Cluster 2, Asians are the dominant minority. However, there is no race effect for the two comparisons to regular drinking in this cluster.

In Cluster 3, there are significant effects of gender on the odds of being a nondrinker vs. both casual drinking and regular drinking. In both instances, the odds of males being nondrinkers are drastically reduced relative to females (92% for casual and 93% for regular). Drinking appears to be a heavily male-dominated activity in this context. However, there is no gender difference in the odds of being a casual vs. regular drinker. For Cluster 3, each year increase in age decreases the odds of being a nondrinker vs. a casual drinker by 63%. This is the strongest age effect for any of the clusters. However, it is important to note that this age acceleration applies only to the graduation from abstinence to casual rates of drinking.

Cluster 4 contains the most advantaged neighborhoods of all the clusters. It also has the lowest proportion of nondrinkers. There is no effect of race in these neighborhoods and both males and females are most likely to be casual drinkers. On the basis of the patterns of mean levels of collective efficacy for the minority groups in this context discussed earlier, it appears that this may be a collection of neighborhoods to which successful minorities move (Hou & Wu, 2009). Therefore, the minorities in these neighborhoods may be largely assimilated into the dominant White culture and their adolescent drinking patterns. Males have 48% lower odds of being a casual drinker vs. a regular drinker relative to females. However, the gender effect is reversed when comparing the odds of being a nondrinker vs. a casual drinker. Males have 109% higher odds of being abstainers vs. casual drinkers relative to females in this context. A similar, though weaker, effect was found in Cluster 1.

The expected relationship between age and frequency of drinking appears in Cluster 4. Older students have lower odds of being abstainers relative to both casual (−49%) and regular drinking (−48%). Neither school efficacy nor family efficacy was significant in this context. Combined with the results for Cluster 2, in which Whites are still the majority but disadvantage is higher, this pattern is consistent with previous research that suggests family factors are more important in the face of neighborhood disadvantage (Brody et al., 2003; Hay et al., 2006).

CONCLUSION

Overall, the results for race suggest that race may have a strong effect on regular drinking in the disadvantaged neighborhoods where Whites are still the majority, such that minorities are much more likely to be less frequent drinkers (Cluster 2). Cluster 1 is almost entirely non-White, so it is difficult to examine the effect of race in that cluster. However, Cluster 1 is dominated by Asian residents, whom research has shown to have lower rates of alcohol consumption than other minority groups (Adlaf et al., 1989; Cheung, 1993; Wall et al., 2001). Therefore, it is not surprising that this context also had the lowest levels of alcohol use. In the most racially diverse neighborhoods (Cluster 3), the effect of race on the odds of being a nondrinker vs. a casual drinker is dramatically increased. However, in these neighborhoods race does not appear to have an effect on the odds of being a regular drinker. The totality of the race pattern suggests that there is indeed an interaction between race and the neighborhood-level context. In the current study, no combination of neighborhood characteristics creates a context in which minorities are more likely than Whites to be in the more frequent use categories.

In both the most advantaged (Cluster 4) and the least advantaged (Cluster 1) neighborhoods, being male increases the odds of being a nondrinker vs. a casual drinker. However, the opposite is true in the neighborhoods with average disadvantage and low collective efficacy (Cluster 3). Therefore at both extremes in the sample, female students are more likely than males to be casual drinkers vs. nondrinkers. In all but the most disadvantaged neighborhoods, being male appears to increase the odds of being
a regular drinker. The lack of such a relationship in the most disadvantaged neighborhoods could be due to either an increase in drinking by females or a decrease in drinking by males. The latter seems more likely given the very low rates of alcohol use overall in Cluster 1. This provides further evidence of the importance of neighborhood context in the study of alcohol use among students.

The effect of age is perhaps the most consistent finding across the clusters. In each of the clusters, increasing age is associated with an increased frequency of drinking. There appears to be an amplification of this effect in advantaged neighborhoods for the abstainer vs. casual drinker comparison. For the two disadvantaged contexts, each year is associated with a decrease of 38% or less in the odds of being a nondrinker relative to a casual drinker. The same odds decrease by 49% or higher in the more advantaged contexts. Interestingly, while Cluster 1 has the weakest age-related reduction in the odds of being an abstainer vs. a casual drinker it has the highest age-related reduction in the odds of being an abstainer vs. a regular drinker. Again, while the direction of the age effect is consistent, the differences in strength are indicative of an interaction between age and neighborhood context.

The results also suggest that school efficacy may be important in disadvantaged neighborhoods but not in more advantaged neighborhoods, providing partial support for Hypothesis 4a. In a disadvantaged neighborhood with average collective efficacy (Cluster 2), school efficacy slightly (9%) increases the odds of being a nondrinker relative to a casual drinker. In the most disadvantaged neighborhoods (Cluster 1), school efficacy is an important protector from regular drinking. These results indicate that school efficacy may only be salient in disadvantaged neighborhoods, particularly those with low collective efficacy. They could also indicate that school efficacy is far more important for minorities, particularly the Asians that dominate Cluster 1. This finding may have important policy implications as it suggests that improving schools in disadvantaged neighborhoods (or in minority neighborhoods) may yield other pro-social results besides improved educational outcomes.

Despite the wealth of research on the importance of family, family efficacy proved important in only one of the neighborhood contexts. In the disadvantaged neighborhoods where Whites are still the majority (Cluster 2), family efficacy has a relatively strong effect (+69%) on the odds of being a nondrinker vs. a regular drinker. This provides partial support for Hypothesis 3a and is consistent with prior research that suggests the family is at increased importance in disadvantaged neighborhoods (Brody et al., 2003; Hay et al., 2006). Thus increasing family efficacy in these neighborhoods appears to be protective against the most worrisome frequency of alcohol use. The lack of such an effect in the disadvantaged context that is dominated by Asians is consistent with previous research that suggests family relational factors (e.g., attachment levels and proactive parenting practices) may not be important protective factors against drinking for Asian youth (Catalano et al., 1992). However, the definition of family efficacy is very narrow and other aspects of the family relationship may be salient for Asian youth.

In summary, the results of the alcohol multinomial logit analysis highlight the importance of including neighborhood context. Not only does the magnitude of the effects change between contexts, often the significant variables change as well. This suggests that a one-size-fits-all approach to decreasing alcohol use among secondary students is unlikely to be successful. The results also indicate that improving the functioning of family and schools in some disadvantaged neighborhoods may also reap the benefit of lower rates of alcohol use among adolescents in those neighborhoods. The results also suggest that the racial and ethnic composition of neighborhoods may affect which individual-level factors are important when examining alcohol use. A future study designed to specifically explore this potential effect would be useful.

Future research that could make use of hierarchical linear models (HLMs) would allow for a clearer picture of the impact of neighborhood level variables. While this was the original goal of the DAVI project, the number of individuals per neighborhood was highly imbalanced resulting in an inability to use HLM. The gender results are also worth exploring in future research. It appears that in some contexts, girls are outpacing their male counterparts in drinking frequency. An explanation for this result could lead to gender specific interventions to curtail drinking among female adolescents. Finally, it appears that Toronto neighborhoods that contain very high concentrations of non-White immigrants are largely insulated from adolescent alcohol use. Future research should examine whether this pattern holds true in other contexts and, if so, explore the cultural lessons to be gleaned from such contexts in terms of mitigating adolescent delinquency in broader society.

Declaration of interest

The author report no conflicts of interest. The author alone are responsible for the content and writing of the article.

RÉSUMÉ

L’estude est subventionnée en partie par NIDA #R01-DA11691–01A1.

RESUMEN
Este estudio examina cómo afectan a los adolescentes que beben los datos del barrio, el colegio, y de la familia. El Drugs, Alcohol, and Violence International (DAVI) de Toronto coleccionó los datos durante los años 2001–2002. La muestra se organizó tanto de acuerdo con la región (ciudad metropolitana versus satélite) como el nivel socioeconómico del colegio. Se seleccionaron dos colegios de cada nivel se seleccionaron al azar y 910 alumnos completaron la encuesta. Dicha encuesta comprende amplias medidas del uso de sustancias, de violencia, y de la salud mental. El estudio dispone de el análisis en núcleos y logits polinominales para buscar las variaciones en el influencias de los colegios, la familia, y los datos demográficos del uso del alcohol en todos los contextos relacionados al barrio. Se incluyen descubrimientos y sugerencias para investigaciones futuras. Este estudio fue costeado en parte por la bolsa de estudios NIDA, #R01-DA11691–01A1.

THE AUTHOR
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REFERENCES


GLOSSARY
Collective efficacy: A shared set of values and sense of trust among neighbors with regard to controlling undesirable behavior in the neighborhood.

Minority concentration: The overall size of the minority population relative to the majority population.

Racial diversity: The number of similarly sized ethnic and racial groups in a neighborhood.

Social disorganization: Neighborhood effect that results from a combination of the breakdown of the networks of informal social control in a neighborhood and the resulting possible entrance of pro-deviant ideologies.


