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# Can the school context moderate the protective effect of parental support on adolescents' alcohol trajectories in urban Chicago?

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#### ARTICLE INFO

#### ABSTRACT

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Keywords: Parental support School context Alcohol trajectories *Background:* Research explaining school effects on alcohol use is scare. This study examined the interactive effect between family support and school characteristics (size, poverty, and sector) on adolescents' alcohol use trajectories in Chicago.

*Methods:* Longitudinal and multilevel data were from the Project of Human Development in Chicago Neighborhoods and the Common Core of Data (National Center for Educational Statistics). The sample consisted of 2205 adolescents in 558 schools. A three-level hierarchical linear model was used to estimate multilevel growth curve models and school effects on alcohol trajectories.

*Results:* In addition to the strong relationship between parental support and alcohol trajectories; the results also found school effects on the average baseline of alcohol use and the rates of change across time. Interestingly, high levels of parental support were more effective in preventing alcohol use in public schools, while adolescents attending private schools with low levels of parental support were more likely to consume alcohol. Similarly, students attending public schools with higher rates of poverty who enjoy higher levels of parental support were less likely to consume alcohol compared to students with lower parental support attending lower rates of schools poverty.

*Conclusion:* Key findings highlight the importance of the interaction between parental support and school characteristics meaning that protective factors provided by parents could be reinforced or diminished by the school context.

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#### 1. Introduction

Two of the most influential contexts in the development of children and adolescents are the family and the school. Despite the importance of schools, research on alcohol has broadly focused on the effect of individual and family characteristics on adolescents alcohol use (Fothergill and Ensminger, 2006; Allen, 2003; Guilamo-Ramos et al., 2005; Bachman et al., 1991; Foxcroft and Lowe, 1991). Within the family context, parental support stands as one of the most important family factors that can prevent alcohol consumption. Family support has been extensively discussed by Maccoby and Martin (1983), who broadly found that parental support and parental control play a substantial role in the socialization process of the child and adolescent.

In a more focused study of alcohol, Foxcroft and Lowe (1995) found that students who perceived more family support were less likely to engage in drinking than students who perceived their parents as authoritarian, negligent and indulgent parenting. Other studies have also found a negative relationship between family

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0376-8716/\$ - see front matter © 2013 Elsevier Ireland Ltd. All rights reserved. http://dx.doi.org/10.1016/j.drugalcdep.2013.06.010 support and alcohol consumption (Caldwell et al., 2004; Piko, 2000; Stice et al., 1993).

Within the school context literature, there is a growing trend to account for school contextual effects when studying several areas of social development such as normative and pro-social goals (Meece and Eccles, 2010). However, research about school context effects on substance use is scare. Most of the studies using the term "school effects" refer to adolescents' perceptions of their schools characteristics. These types of studies are referred to as "individual-level school-related exposure" (Fletcher et al., 2008). Outside this line of inquiry, to the best of my knowledge, there is only a handful of studies that explore how the school context might be affecting substance using behaviors among youth (Kima and McCarthy, 2006; West, 2004; Cleveland and Wiebe, 2003; Kumar et al., 2002).

One of these studies focused on alcohol use explored how the effect of extracurricular activities on alcohol use varies by school characteristics (Hoffmann, 2006). The findings of that study suggest that students attending schools with higher levels of average student SES composition, lower rates of African American and Hispanic composition, and Catholic schools were more likely to use alcohol. Hoffman also examined cross level interactions finding that extracurricular activities have a stronger relationship with alcohol use in students attending low minority and wealthier schools.







Another study about school effects on adolescent substance use and health issues by West (2004) shows that schools with higher composition of students who were disengaged from academic activities, knew fewer teachers and schools rated with poor ethos had students who were more likely to drink more alcohol and smoke. All these findings suggest the need for continuing research, especially considering the school context; which can further inform policies and prevention programs related to adolescent alcohol use.

Thus, this paper expands our understanding of school effects on alcohol use among adolescents by adding a longitudinal-multilevel component examining interactions between an aspect of the family context – parental support – and school characteristics. The main focus is on how the protective effects of parental support on adolescents' trajectories of alcohol consumption vary depending on three school characteristics: school size, school sector (public versus private) and levels of poverty. Given the importance of large urban populations, the aims of this paper are explored among adolescents living in Chicago, which is one of the largest urban settings in the U.S., where drug use problems and other risk behaviors such as violence tend to be prevalent. To address this research topic, three research questions are articulated below.

(1) Does the relationship between alcohol consumption and family support depend on the school size? A comprehensive literature review suggests there are no studies linking school size and alcohol use. However, it can be argued that the middle and small size schools might generate a protective environment against alcohol use. This idea is based on research accounting for positive effects on adolescents behaviors related to alcohol use. For instance, Lee and Smith (1995) found that middle size schools could motivate more student engagement. Other studies have also reported that smaller schools might encourage more: connectedness with school (McNeely et al., 2002), adolescents' participation and engagement (Silinsa and Mulfordb, 2004), and attachment with school (Crosnoe et al., 2004). These protective factors seem to be present also at the school level, for instance West (2004) found that school engagement protects against smoking and alcohol use. Thus, it can be expected that adolescents attending larger schools might be more likely to consume alcohol over time. In addition, it can be expected that the protective effect of parental support could be lower in larger schools compared to middle size and small schools.

(2) Does the relationship between alcohol consumption and family support depend on the school sector? The literature accounting for the effects of school sector on alcohol use among adolescents is also extremely rare. However, one study by Valois et al. (1997) showed differences on unadjusted rates of alcohol, tobacco and illicit drugs consumption between public and private schools. The results were inconsistent depending on the type of substance. In the case of alcohol, only lower rates of consumption were found among females attending public schools compared to females attending private schools. Following these results, and similar to the case of school poverty levels, it could be hypothesized that the protective effect of parental support could be weaker in private schools compared to public schools.

(3) Does the relationship between alcohol consumption and family support depend on the school poverty levels? Based on the findings reported by Hoffmann (2006), it seems that the effect of school average SES is inconsistent and varies depending on individual factors such as gender. However, it could be expected that schools with higher levels of poverty have lower levels of alcohol consumption. This is based on the idea that schools with lower levels of poverty concentrate students with more socioeconomic resources and wealth. The availability of resources might open more opportunities to consume alcohol. Thus, it can be expected that lower levels of school poverty would generate environments where adolescents might be more likely to engage in alcohol use. It could be also argued that the protective effect of parental support could be less efficient in school with lower levels of poverty. This research question – because of methodological issues explained in the methods section – could be addressed only in public schools.

To address these research questions and given the focus on school – attending urban adolescents, analyses in this paper were based on data from the Project of Human Development in Chicago Neighborhoods (Earls and Visher, 1997; Liberman, 2007). These data are ideal to address the research questions because the study sample is representative of one of the largest urban sectors in the U.S. Also the data are longitudinal and multilevel containing three waves of measurement complemented with school-level information (National Center for Education Statistics, 1998–2007).

#### 2. Methods

#### 2.1. Sample

The PHDCN is a study focused on the pathways to juvenile delinquency, adult crime, substance abuse, and violence (Earls and Visher, 1997). the longitudinal component of PHDCN followed approximately 6228 randomly selected children and adolescents. This longitudinal component consisted of three assessment waves from 1995 to 2001. The sampling design of the longitudinal study was a three stage cross-sectional stratified cluster sample of Chicago neighborhoods. For a more detail description of the sample design used in PHDCN see Sampson et al. (2005).

The analytic sample was restricted to cohorts 9, 12 and 15 (2205 students nested in 558 schools at wave 1. The distribution of the number of students per school ranged from 1 to 28 with median 2, it had a mean of 4 students per school and standard deviation 3.8). The rest of the cohorts were excluded because they did not have reports of drinking alcohol or participants finished school at the beginning of wave 1. About 50% of the sample was female and almost 49% percent were Hispanic, 37% African American, and 14% white. One out of five students belonged to families with an annual income lower than \$10,000 at wave 1, while 40% lived in families with incomes over \$30,000. The school data came from the Common Core of Data (National Center for Education Statistics, 1998–2007). The author of this paper gathered school data from the CCD. Students attended both public (69%) and private schools with average size of 710 students, and the percentages of low income students (*n* = 1849 attending 385 public schools), ranged from 12% to 100% with a mean of 79%. Missing observations ranged from 2% to almost 30% depending on the type of measurement and waves. To address the attrition problem, and under the assumption of missing at random, missing data were treated using multiple imputation procedures (MI). The MI was carried out using the Sequential Regression Imputation Method (Raghunathan et al., 2007).

#### 2.2. Measures

2.2.1. Outcome. The outcome measure was a dichotomous variable accounting for the use of alcohol in the past 12 months. (Earls et al., 2006c,d,e). Participants were asked: "How many days did you have alcoholic beverages to drink, not just a sip or taste. . . during the last 12 months". The responses ranged in a nine ordinal categories from 0: never, 1–2 days, 3–5, 6–11, 12–24, 25–50, 51–99, 100–199, and 200 or more days. Participants who responded never were coded as 0: not consumed in the past year, the rest of the categories were collapsed into 1: consumed alcohol in the past year.

*2.2.2. Time.* Time was represented by the age of the adolescent which is centered on the individual mean age of the participant across the three waves. The reason to center this variable is to have

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