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Objective and subjective social class gradients for substance use among Mexican adolescents☆

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ABSTRACT

This study examines the shape of social class gradients for substance use among Mexican adolescents. Substance use and objective and subjective indicators of social class were assessed in house-to-house surveys conducted with 7614 Mexican adolescents in 2004. The sample was designed to be representative of the poorest urban communities in seven Mexican states. The prevalence of current smoking was 16.8%, alcohol consumption was 30.2%, and drug use was 4.6%. Multiple logistic regressions are used to estimate the associations of objective indicators of socioeconomic status (SES) and subjective social status (SSS)—at both community and societal levels–and smoking, alcohol and drug use. Adolescents who perceived themselves as higher in social status in reference to their local community reported *more* smoking and drinking. Our findings were similar when we used objective measures of SES, such as maternal education and total monthly household expenditures per person. In contrast, adolescents who perceived that they had high social standing in reference to Mexican society *as a whole* were *less* likely to report being current smokers and drinkers. We found no significant association between social status and drug use. Research into how adolescents perceive themselves in reference to their peer communities may help strengthen programs and policies aimed at promoting health in vulnerable adolescent populations.

Introduction

Socioeconomic status and health in adolescents

Low socioeconomic status has been consistently associated with poor health outcomes among children, particularly those living in poverty during early childhood (Duncan & Brooks-Gunn, 1997; Evans & Kim, 2007; Walker et al., 2007). A similar social class "gradient" has been found in many studies of adults in a range of health domains (Adler & Rehkopf, 2008; Marmot & Wilkinson, 2006; Sapolsky, 2005). In contrast, no consistent pattern has been shown between socioeconomic status (SES) and health outcomes during adolescence across key domains such as respiratory health, smoking, obesity, mental health, and asthma (Starfield, Riley, Witt, & Robertson, 2002; Torsheim et al., 2004; West, 1997; West & Sweeting, 2004).

There are several possible explanations for divergent findings regarding the SES–health relationship among adolescents. First, different indicators of SES (e.g. family income, parental education, parental occupational grade) may exert varying effects on the same outcome; research with adults has shown different associations of components of SES and heath outcomes (Braveman et al., 2005). Second, few studies on adolescents have included *youth-specific* indicators of social class. While family and parental SES are useful for younger children, they may be less applicable for adolescents since they do not fully capture the dynamic nature of adolescents'

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educational attainment, the economic status of adolescents who are employed outside of the home or adolescents' sense of relative social standing among their peers. These subjective dimensions of class have been shown to help explain health-related outcomes beyond the effects of simple objective indicators of SES in both adults and adolescents (Adler, Epel, Castellazzo, & Ickovics, 2000; Goodman et al., 2003; Goodman et al., 2001; Singh-Manoux, Marmot, & Adler, 2005). However, research has primarily been done in high-income countries, and findings may not be entirely generalizable to adolescents from less developed countries, like Mexico. As Brown et al. found, adolescents from different socio-cultural contexts may use different criteria when ranking their social position (Brown et al., 2008). The extent to which there are similarities in findings between Mexico and high-income countries like the U.S. will shed light on the cultural specificity of these processes.

The central goal of the present study is to extend inquiry regarding the social gradient in adolescent health to a wider economic and cultural context. Utilizing two subjective social status (SSS) scales for adolescents previously used only in the U.S., our study examines the association between objective and subjective dimensions of SES and substance use among a large sample of Mexican adolescents living in very low-income urban communities. Below we review the recent empirical research on SSS and its relationship to health in high-income countries; the small but growing literature on substance use among Mexican youth, and, finally; the potential relevance of SSS for explaining patterns of substance use in an urban Mexican context.

Subjective social status

Social class is a reflection of social, economic, political and cultural status within a given social hierarchy. Its association with health outcomes involves not only differential access to material resources but also social processes associated with social position (Adler & Newman, 2002). The social gradient in adolescent health has largely been explored using objective indicators of the socio-economic components of parents' social class, such as income, education, or occupation, which serve as proxy measures of access to goods and services. Several recent studies have also investigated adolescents' perceptions of their relative subjective social status (SSS)—using scales modeled after those used in adults—and found the ladders to be valuable in explaining adolescents' health status even after taking into account objective indicators of parental social class (Glendinning, Love, Hendry, & Shucksmith, 1992; Goodman et al., 2001; Goodman et al., 2000).

Similar to the measurements for SSS in adults, the youth-specific indicators involve two "ladders:" one representing broader society, and the other representing one's immediate community; adolescents are asked to rank themselves on these ladders. Thus, this assessment process invites them to tap into their emerging self-concept of social stratification within the context of two reference populations (Brown et al., 2008; Goodman et al., 2001; Gruenewald, Kemeny, & Aziz, 2006).

Considered as a whole, the existing literature on adolescent social class and health suggests that SSS captures unique aspects of social standing and appears useful in predicting health-related outcomes beyond objective indicators of social class; several patterns emerge in the literature (see Table 1 for a review of the literature on adolescent SSS). First, adolescent SSS—both community and societal—is significantly associated with psychological, physical, behavioral and physiological indicators of health. Second, each SSS scale, defined by a given reference population (e.g. society, peer community), represents a unique social hierarchy. While both SSS ladders have been found to be associated with health-related outcomes independent of objective indicators of SES, community SSS is more strongly related to health-related outcomes than is society SSS. Third, important group differences, in terms of age, race/ethnicity, SES and sex, exist in the SSS–health relationship among adolescents. For example, in the U.S., Native American youth ranked themselves higher than did their White American peers on a society SSS ladder, even though their poverty level was higher. This suggests that they simultaneously considered their local social comparison with others from their reservations and territories while ranking themselves in reference to the general society.

Adolescent substance use

Adolescence is a life stage marked by increased risk of tobacco smoking, excessive alcohol consumption, and illicit drug use (Kulig, 2005; Sánchez-Zamorano et al., 2007). These three risk behaviors during adolescence are associated with immediate health hazards, including depression, interpersonal violence, motor vehicle accidents, drowning, risky sexual behaviors, suicidal behavior and more frequent use of health services (Arillo-Santillán et al., 2005; Kulig, 2005). Continuous and long-term use of these substances can result in morbidity and early mortality in adulthood (Aarons et al., 1999; Services, 1997).

Relationship of SES to adolescent substance use

A sizable body of research conducted in the U.S. and Western Europe has investigated the association between "objective," parent-reported SES and substance use among adolescents, with mixed results. The preponderance of studies have found that higher SES, measured objectively, is associated with *lower* rates of substance use in adolescents (Bloomfield, Grittner, Kramer, & Gmel, 2006; Fothergill & Ensminger, 2006; Goodman & Huang, 2002; Hanson & Chen, 2007; Lemstra et al., 2008; van Oers, Bongers, van de Goor, & Garretsen, 1999; Starfield et al., 2002; Tyas & Pederson, 1998; West, Sweeting, & Young, 2007). Other studies, however, have not confirmed these associations (Tuinstra, Groothoff, van den Heuvel, & Post, 1998). One U.S. study found that low SES adolescents, as measured by parental income, reported more cigarette use compared to adolescents of high SES (West et al., 2007). In contrast, another U.S. study found that high SES adolescents, defined as those with greater financial resources and family social status, reported more cigarette, alcohol and drug use compared to low SES adolescents (Hanson & Chen, 2007).

Only two studies to our knowledge have examined the relationship between adolescents' own ratings of their social status and their use of substances. In a U.S.-based study, higher community SSS (defined as within school) was associated with a *lower* prevalence of smoking among adolescents, in both cross-sectional and longitudinal analyses, even after controlling for objective SES (Finkelstein, Kubzansky, & Goodman, 2006). A study of Hungarian adolescents found that those who ranked their families as having higher SES had *higher* rates of substance use, after adjustment for their parents' report of objective SES indicators (Piko & Fitzpatrick, 2007).

Adolescent substance use in Mexico

In Mexico, as in many other Latin American countries, adolescent cigarette smoking, alcohol consumption, and illicit substance use are all on the rise (Arillo-Santillán et al., 2005; Benjet et al., 2007; Bird, Moraros, Olsen, Coronado, & Thompson, 2006; Felix-Ortiz, Villatoro Velazquez, Medina-Mora, & Newcomb, 2001; Lotrean et al., 2005; Medina-Mora et al., 2003; Monteiro, 2007; Villalobos & Rojas, 2007). According to a 2002 national survey, 15.7% of poor urban Mexican adolescents ages 12–21 had ever smoked cigarettes and 8.6% currently consumed alcohol (Urquieta, Hernandez-Avila, & Hernandez, 2006). The