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Stress and Alcohol, Cigarette, and Marijuana Use Among Latino Adolescents in Families with Undocumented Immigrants

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Abstract

Families in which one or more members are undocumented immigrants experience unique hardships. Yet, little is known about stress and substance use among adolescents growing up in these families. The present study examined associations between two sources of adolescent stress (i.e., low parental involvement due to contextual constraints and family economic insecurity) and lifetime alcohol, cigarette, and marijuana use among adolescents in families with undocumented members. The sample was comprised of 102 adolescents (10–18 years old) and one of his or her parents. Participants responded a survey in English or Spanish. Adolescent lifetime use of alcohol, cigarette, and marijuana was 51%, 32.4%, and 37.3%, respectively. Chi-Square analyses found no significant gender differences in lifetime substance use. Logistic regression models showed that adolescent stress due to hindered parental involvement increased the odds of both lifetime cigarette and marijuana use after controlling for gender, age, linguistic acculturation, familism, parental control, and negative peer affiliation. Being a girl increased the odds of lifetime alcohol use. Family economic stress was not associated with lifetime substance use. Results suggest that hindered parental involvement might be a stressor and a risk factor for cigarette and marijuana use among adolescents growing up in families with undocumented members. Because parents in these families are likely to be undocumented, policies that allow immigrants to apply for legal status could improve parents' working conditions and facilitate parental involvement; in turn, such policies could decrease the risk for adolescent substance use among children of Latino immigrants.

Conflict of Interest: The authors declare that they have no conflict of interest.

Ethical Approval: All procedures performed involving human participants were in accordance with the ethical standards of the Institutional Review Board of Oklahoma State University and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

Keywords

Stress; substance use; Latino adolescents; immigrant families; parental involvement

Introduction

Substance use is a significant threat to the health and development of adolescents in the United States (Institute of Medicine, 2011). There is evidence that Latino or Hispanic adolescents (we will use both terms interchangeably) may be at higher risk for substance use than non-Hispanic Whites (Johnston, O'Malley, Bachman, Schulenberg, & Miech, 2014). Substance use among young Latinos is concerning, because they experience more barriers accessing treatment for substance abuse disorders (Alegria, Carson, Goncalves, & Keefe, 2011) and are more likely than non-Latino Whites to come in contact with the juvenile justice system for drug-related offenses (Hodgdon, 2008; Villarruel, Walker, Minifee, Rivera-Vazquez, Peterson, & Perry, 2002),

A segment of the adolescent Latino population exposed to significant social, economic, and legal disadvantage consists of adolescents growing up in families with undocumented immigrants. An estimated that 16.6 million people in the United States live in families in which at least one member is an undocumented immigrant, that is, a person who does not have authorization to live in the country and thus lacks valid documents such as Social Security card and a state-issued driver's license. Of this 16.6 million people, approximately 9 million live in mixed-status families or a family comprising at least one US-born child and one undocumented immigrant parent (Taylor, Lopez, Passel, & Motel, 2011). Nonetheless, knowledge about risk and protective factors for substance use among adolescents living in families with undocumented immigrants is scant. The few extant studies of undocumented parents and their children suggest that the hardships parents experience place their children at risk for negative developmental outcomes (see review by Yoshikawa & Kholoptseva, 2013). An emergent body of literature suggests that undocumented status is a family-level experience, as the US-citizen and legal resident children of undocumented parents share the burden of undocumented status (Dreby, 2012; Zapata Roblyer & Grzywacz, 2015). Given the many challenges experienced by families with undocumented immigrants (Chavez, 2013; Yoshikawa, 2011; Zapata Roblyer & Grzywacz, 2015), two risk factors for substance use that may be particularly salient for adolescents in families with undocumented immigrants are adolescents' experiences of stress related to low parental involvement and family economic disadvantage.

Parental involvement has been identified as a protective factor against substance use during adolescence (Cox, Zapata Roblyer, Merten, Shreffler, & Schwerdtfeger, 2013; Pilgrim, Schulenberg, O'Malley, Bachman, & Johnston, 2006; Prado et al., 2007). Parental involvement has been conceptualized as consisting of cognitive, emotional, and behavioral dimensions (Grolnick, Ryan, & Deci, 1991; Parke et al., 2004; Wenk, Hardesty, Morgan, & Blair, 1994). Behavioral involvement refers to parents' willingness and ability to spend time relating to their children through participation in day-to-day activities and experiences (Grolnick et al., 1991; Wong, 2008). This type of involvement conveys parental support of

the youth's activities and endeavors (Harris, Furstenberg, & Marmer, 1998). Grolnick and colleagues have posited that a pivotal aspect of parental involvement is the child's phenomenological experience of the extent and quality of parental involvement (Grolnick et al., 1991; Grolnick & Slowiaczek, 1994). Hence, youth's perception of parental behavioral involvement or lack thereof might be as consequential for development as parents' actual behaviors.

Although parental involvement tends to decrease during adolescence, a period during which adolescents strive for autonomy and independence (Laursen & Collins, 2009; Zimmer-Gembeck & Collins, 2003), low parental involvement is a significant predictor of adolescent maladjustment and problem behavior, including substance use (Dishion, Nelson, & Bullock, 2004; Simons, Johnson, & Rand, 1994; Wood, Read, Mitchell, & Brand, 2004). Low parental involvement likely contributes to negative adolescent outcomes by undermining parents' knowledge of their children's whereabouts, openness in the parent-youth relationship, and youth's perceptions of parental support (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006; Criss et al., 2013; Gerra et al., 2004). It is possible that some adolescents experience low parental involvement and its correlates (e.g., low parental knowledge and perceived support) as stressful (Ceballo, 2004). For example, Latino college students from low-income immigrant families who were asked to reflect on their experiences in secondary school described their parents' behavioral disengagement from their schooling as a "mixed blessing" (p. 179). Parents' difficulties in enacting behaviors such as attending school activities or helping their children make decisions related to their education conferred adolescents high levels of autonomy, but also made them feel unsupported, even when parents were cognitively and emotionally involved. Moreover, participants who had to spend significant amounts of out-of-school time without parental supervision due to their parents' work schedules said they often had felt lonely and had longed for greater parental guidance in their daily lives (Ceballo, 2004). These findings suggest that some adolescents in immigrant families may experience parental behavioral disengagement at school and home as stressful, but it is unclear whether this type of stress could be associated with substance use.

Studies have documented barriers to parental involvement in schooling among low-income immigrant parents, such as limited English proficiency, low educational attainment, unreliable means of transportation, lack of childcare, schools' structure, limited familiarity with the US educational system, and parent-child cultural gaps (Behnke, Taylor, & Parra-Cardona, 2008; Ramirez, 2003; Turney & Kao, 2009). Lack of a state-issued driver's license, fear of encounters with the police, and deportation concerns have been identified as significant barriers to school-based parental involvement among undocumented immigrant parents (Viramontez Anguiano & Lopez, 2012; Zapata Roblyer & Grzywacz, 2015).

A less studied barrier to parental involvement among low-income Latino families is work conditions. However, there is evidence that low-skilled immigrants are overwhelmingly employed in jobs that might pose challenges to parental involvement, such as jobs characterized by nonstandard work schedules (e.g., night shifts, rotating shifts) and low autonomy (Gleeson, 2010; Massey, 1987; Mehta, Theodore, Mora, & Wade, 2002). A growing body of literature also suggests that parental nonstandard work schedules contribute

to adolescent health risk behaviors mainly by the limitations they impose on parents' ability to be behaviorally involved in their adolescents' lives (e.g., attending youth's extracurricular activities and eating meals together), which have a cascade effect on the parent-child relationship and adolescent development. These negative effects might be more pronounced among low-income and single-parent families, and those in which working mothers have less education (Han, 2006; Han & Miller, 2009; Han, Miller, & Waldfogel, 2010; Han & Waldfogel, 2007).

Economic disadvantage is a well-established risk factor for negative youth outcomes (Brooks-Gunn & Duncan, 1997; Costello, Compton, Keeler, & Angold, 2003; Evans & English, 2002), and one that is prevalent among Latino families (Macartney, Bishaw, & Fontenot, 2013). In particular, families headed by undocumented Latino immigrants are overrepresented among the poor (Orrenius & Zavodny, 2011; Passel & Taylor, 2010), which suggests that stress related to family economic hardship may be more prevalent among these families. Supporting this assumption, a couple of studies involving adults have found higher levels of economic stress among undocumented immigrants and those expressing deportation concerns than among documented immigrants and those unconcerned with deportation (Arbona, Olvera, Rodriguez, Hagan, Linares, & Wiesner, 2010; Cavazos-Rehg, Zayas, & Spitznagel, 2007). Nevertheless, there is a dearth of literature examining associations between adolescents' experiences of family economic stress and problem behavior. A recent study of Mexican American adolescents living in an immigrant enclave found direct and indirect associations between adolescents' experiences of family economic stress and depressive symptoms (García, Manongdo, & Ozechowski, 2014). Some other studies have investigated links between socioeconomic status and adolescent substance use in the general population. Hanson and Chen (2007) reviewed 97 such studies examining alcohol, cigarette, and marijuana use and concluded that lower socioeconomic status was associated with adolescent and young adult cigarette use, but they could not establish clear patterns of associations between socioeconomic status and alcohol or marijuana use.

Studies have found a positive association between acculturation to the United States and Latino substance use (De la Rosa, 2002; Warner, Valdez, Vega, de la Rosa, Turner, & Canino, 2006). Likewise, an affiliation with deviant peers has been identified as a significant risk for substance use (Barrera Jr et al., 2002; Donovan, 2004; Padilla-Walker & Bean, 2009; Simons-Morton, Haynie, Crump, Eitel, & Saylor, 2001). By contrast, familism, a value pivotal in Latino cultures that emphasizes emotional and instrumental support as well as loyalty among family members (Calzada, Tamis-LeMonda, & Yoshikawa, 2012; Sabogal, Marin, Otero-Sabogal, Marin, & Perez-Stable, 1987), has shown to protect Latino adolescents from substance use (German, Gonzales, & Dumka, 2008; Gil, Wagner, & Vega, 2000; Marsiglia, Parsai, & Kulis, 2009; Ramirez, Crano, Quist, Burgoon, Alvaro, & Grandpre, 2004). Parental monitoring of youth's whereabouts is a protective factor against risky health behaviors (Martinez, 2006; Ramirez et al., 2004). Moreover, Latino gender socialization practices (Raffaelli & Ontai, 2004; Zayas & Solari, 1994), may reduce the risk of substance use among girls (Delva, Wallace Jr, O'Malley, Bachman, Johnston, & Schulenberg, 2005; Kulis, Marsiglia, & Hurdle, 2003; McQueen, Greg Getz, & Bray, 2003). However, acculturation to the United States may place girls at equal risk of substance use as boys (Epstein, Botvin, & Diaz, 1998; Parsai, Voisine, Marsiglia, Kulis, & Nieri, 2008;

Wallace, Bachman, O'Malley, Schulenberg, Cooper, & Johnston, 2003). Studies also have found that substance use increases with age; thus, older adolescents are more likely to report having ever used substances than younger ones (Kandel et al., 1997; Musher-Eizenman, Holub, & Arnett, 2003).

In the present study, we examined associations between two sources of adolescent stress (i.e., hindered parental involvement and family economic hardship) and lifetime use of alcohol, cigarette, and marijuana. Lifetime use was a cumulative measure that indicated whether a youth had used alcohol, cigarette, or marijuana at least once in their lifetime. Hindered parental involvement was conceptualized in terms of parental behaviors such as parents not attending the youth's school activities or not spending time with the youth due to work commitments. We hypothesized that both hindered parental involvement stress and family economic stress would be associated with lifetime use of alcohol, cigarette, and marijuana, while controlling for the following risk and protective factors associated with substance use: gender, age, linguistic aculturation, familism, parental control, and affiliation with deviant peers.

Method

Participants

Data for this analysis came from the FARO Project (Broken Families Project), a study that examines the association between family immigration status and adolescent emotional and behavioral health among Latinos in an urban area of Oklahoma. Eligibility criteria for parents were being an immigrant from Mexico or Central America or the spouse/partner of an immigrant from those regions and having a child aged between 10 and 18 years. Eligibility criteria for adolescents were being 10–18 years old and having an immigrant parent from Mexico or Central America. Only one parent and one adolescent per family were allowed to participate. This analysis used a subset of data from 102 families in which the parent indicated that at least one member of their immediate family (i.e., the participant, her or his spouse/partner, or children living at home) was an immigrant without authorization to live in the United States and thus lacked “papers” (i.e., valid documents). All recruitment and data collection procedures were approved by Oklahoma State University's Institutional Review Board. A certificate of confidentiality from the National Institutes of Health was obtained to protect participants' anonymity.

Among participating adolescents (ages, 10–18 years; $M = 13.8$, $SD = 2.16$), there were slightly more boys (52.9%) than girls. Half the adolescents were born in the United States (51%). Among foreign-born adolescents, most were born in Mexico (90.6%); the rest were born in Central American countries. Parents were mostly women (89.2%), married or living as married (87.3%) and had not earned a high school diploma (80.4%). Their ages ranged from 25 to 59 years ($M = 37.20$, $SD = 6.08$). Most parents indicated that their household income in the previous year had been less than \$30,000 (80.4. %).

All parents were born abroad, mostly in Mexico (91.2%), while the rest were born in Central American countries. Most parents had been living in the United States 5–15 years (84.3%); a minority of them had been living in the country 1–4 years (3.9%) or 20 years (9.8%). Only

a minority of parents had US citizenship (3.9%). When asked whether they and their spouses had a valid Social Security card, all parents living as single—except one who declined to answer the question—indicated that they did not have one. Among those married or living as married, the vast majority indicated that neither they nor their spouse had a valid Social Security card (83.1%); a small percentage indicated that either they or their spouse had a valid Social Security card (12.4%); a smaller percentage indicated that both they and their spouse had a valid Social Security card (4.5%).

Procedures

Our goal was to recruit a non-random but representative sample of parent-adolescent dyads from immigrant Latino families. Potential participant parents were identified and recruited via community outreach activities targeting Latino families (e.g., health fairs in conjunction with visits from the Mexican Consulate) co-sponsored by the University, and through personal contacts of the research team. Bilingual data collectors screened adult participants in their language of choice (English or Spanish) and invited them to enroll in the study with their adolescent children. Participants recruited at community events were given the opportunity to take the survey during the event or schedule a data collection appointment at a location of their choice (e.g. their home, the University, a public library, etc.). Adolescents were recruited through their parents or guardians and enrolled in the study with consent from parents or guardians. Adolescents gave assent to participate in the study.

All data collectors had previous experience with collecting data from Latino participants. They received training on ethical research with human participants and also attended a 3-hour training session about the FARO Project, and received ongoing support at regular meetings with the primary author as data collection continued. Data for analyses presented here were collected from October 2013 to April 2014. Data from parents were collected using an interviewer-administered survey in the participant's language of choice (i.e., English or Spanish). This procedure was intended to overcome potential issues of literacy and unfamiliarity with surveys. At the end of the interview, parents were given a booklet with a list of free or reduced-fee immigration and counseling services offered by non-profit organizations in the area. Data from adolescents were collected using a self-administered survey in the participant's language of choice (i.e., English or Spanish). Each participant received \$20 in cash for his or her participation. Parent and adolescent surveys were developed in English, translated into Spanish, and back-translated into English by the primary author with help from other members of the research team. Four surveys (i.e., parent and adolescent surveys in English and Spanish) were set up in a password-protected online survey management suite. Each family was assigned a random code to enter on the online survey, no part of which was associated with their names, surnames, dates of birth or any other identifying information.

Measures

Lifetime use of alcohol, cigarette, and marijuana—These three variables were assessed with questions inquiring about the amount of use of alcohol, cigarette, and marijuana during the last 30 days adapted by Kulis and colleagues (Kulis, Marsiglia, Elek, Dustman, Wagstaff, & Hecht, 2005). The answers contained the options *I have never drunk*

alcohol (only a few sips), I have never smoked cigarettes, and I have never smoked marijuana. Answers to each of these questions were dichotomized to create measures of lifetime use and coded 0 (Have never used) or 1 (Have used at least once).

Linguistic acculturation—Six items (Cronbach's $\alpha = .82$) were used to measure linguistic acculturation in four difference domains: family friends, media, and cognitive processes (i.e., thinking, reading, and writing). A sample item was, What language do you generally speak with your family? Answers were 1 (Spanish), 2 (Both), 3 (English). Items were averaged to create an acculturation score whereby higher scores represented higher levels of linguistic acculturation. Variations of the items used in this study can be found in the Acculturation Scale for Mexican Americans (Cuellar, Harris, & Jasso, 1980). These items have been widely used in substance use studies with Latino adolescents and they have exhibited adequate psychometric properties (Epstein et al., 1998; Gil & Vega, 1996; Marsiglia, Yabiku, Kulis, Nieri, Parsai, & Becerra, 2011; Ramirez et al., 2004).

Familism—A 7-item scale (Cronbach's $\alpha = .91$) was used to measure familism (Gil & Vega, 1996). One item, which we considered too vague (*Things work out well for us as a family*), was replaced with a new item (*Family members help each other out*). Possible answers ranged from 1 (True) to 4 (False). Items were coded such that higher scores corresponded to higher levels of familism and then averaged to create a single score for each adolescent.

Parental control—Parental control of the adolescent's whereabouts (i.e., behavioral control) was measured with 6 items (Cronbach's $\alpha = .85$) adapted from Kerr and Stattin (2000). A sample item was, Do you need to have your parents/caregivers permission to stay out late? Answers ranged from 1 (Always) to 5 (Never). The items were coded such that higher scores indicated higher levels of parental control and then were averaged.

Negative peer affiliation—An 8-item scale (Cronbach's $\alpha = .91$) was used to measure affiliation with deviant peers (Lansford, Deater-Deckard, & Bornstein, 2009). A sample item was, How often do members of your peer group...drink alcohol? Answers ranged from Never = 1 (Never) to 5 (Very often). Answers to the 8 items were averaged to create a negative peer affiliation total score whereby higher scores indicated more deviant peer affiliation.

Family economic stress—This variable was measured with 6 items (Cronbach's $\alpha = .86$) adapted from the Hispanic Stress Inventory for Adolescents, HSI-A (Cervantes, Fisher, Córdova, & Napper, 2012). The items measured adolescents' experiences of economic stress during the past 6 months (Table 1). Answer keys included 1 (This situation didn't happen), and 2 (The situation happened, but it didn't worry me) to 6 (The situation happened, and it worried me extremely). Answers to the items were averaged to create a scale whereby higher scores indicated higher levels of economic stress.

Hindered parental involvement stress—Three items (Cronbach's $\alpha = .81$) were used to measure adolescent's stress due to low parental involvement (Table 1). The answer keys followed the HSI-A' format described above (Cervantes et al., 2012). Answers to the items

were averaged to create a scale whereby higher scores indicated higher levels of stress due to hindered parental involvement.

Data Analyses

As a first step in the analyses, the most frequently endorsed stressors were identified (Table 1). Next, descriptive statistics and bivariate correlations for the variables in the study were computed (Table 2). Three Chi-square tests were computed to examine gender differences in lifetime use of alcohol, cigarette, and marijuana. Given the significant correlation between hindered parental involvement stress and family economic stress, we calculated the Variance Inflation Factor (VIF) for the correlates to be used in a series of logistic regression models. Results indicated no evidence that the correlation between the two stress measures would create problems resulting from multicollinearity. The VIF of hindered parental involvement stress on family economic stress was 1.094. The other VIFs in the model were just as low. A VIF of 10 or above would suggest collinearity between variables or redundancy (Stevens, 2002). Next, logistic regression models were built for each substance use outcome (i.e., lifetime alcohol, cigarette, and marijuana use), to determine which variables were associated with membership in the user group (Long, 1997). The results from the logistic regression models are presented in Table 2. All analyses were conducted in SPSS Statistics for Windows, version 22.0 (IBM, 2013).

Results

In the family economic-stress scale, the most frequently endorsed stressors were, “My parents could not get a good job” (32.4%) and “My family had problems paying the rent” (29.4%). In the hindered parental involvement scale the most frequently endorsed stressors were, “Because of their work obligations, my parents could not come to my school activities” (31.4%), and “Because of their work obligations my parents could not spend more time with us” (29.4%). More girls than boys endorsed the family economic stressor “Someone in my family was sick, but could not get medical attention because of problems with legal papers” (girls $M = 1.73$, $SD = 0.20$; boys $M = 1.26$, $SD = 0.11$; $p = .040$). There were no gender differences in the endorsement of any other stressor (Table 1).

Half of all adolescents (51%) reported lifetime alcohol use, nearly a third (32.4%) reported lifetime cigarette use, and more than a third (37.3%) reported lifetime marijuana use. Slightly more girls than boys reported lifetime alcohol, cigarette, and marijuana use, although the differences were not statistically significant: alcohol (girls, 60.4%; boys, 42.6%; $\chi^2 = 3.23$, $p = .055$), cigarette (girls, 37.5%; boys, 27.8%; $\chi^2 = 1.10$, $p = .202$), and marijuana (girls, 37.5%; boys, 37.0%; $\chi^2 = 0.002$, $p = .562$).

The logistic regression models showed that being a girl was associated with a 2.90 times increase in the odds of reporting lifetime alcohol use, with all other variables in the model kept constant. No other variable was significantly associated with the likelihood of lifetime alcohol use. Moreover, a unit increase in hindered parental involvement stress was associated with a 3.19 times increase in the odds of reporting lifetime cigarette use, with all other variables kept constant. No other variable was significantly associated with the likelihood of lifetime cigarette use. Lastly, a unit increase in hindered parental involvement

stress was associated with a 2.77 times increase in the odds of reporting lifetime marijuana use, with all other variables kept constant; likewise, a unit increase in negative peer affiliation was associated with a 2.06 times increase in the odds of reporting lifetime marijuana use. Family economic stress was not associated with the odds of reporting lifetime alcohol, cigarette, or marijuana use (Table 3).

Discussion

We examined associations between two forms of adolescent stress (i.e., hindered parental involvement and family economic insecurity) and lifetime use of alcohol, cigarette, and marijuana among Latino adolescents in families with undocumented immigrants. We had hypothesized that both hindered parental involvement stress and family economic stress would be associated with lifetime use of alcohol, cigarette, and marijuana, while controlling for variables known to be risk and protective factors for adolescents substance use (i.e., gender, age, familism, parental control, and negative peer affiliation).

Results showed that hindered parental involvement stress was associated with lifetime cigarette and marijuana use, but not with lifetime alcohol use. The findings about cigarette and marijuana use are consistent with studies suggesting that stress is implicated in the initiation and escalation of substance use during adolescence (Brady & Sinha, 2005; Hoffmann, Cerbone, & Su, 2000; Nation & Heflinger, 2006; Newcomb & Harlow, 1986; Schwartz et al., in press; Wills, Sandy, Yaeger, Cleary, & Shinar, 2001). These findings also concur with studies that have identified low parental involvement as a risk factor for adolescent substance use factor (Dishion et al., 2004; Prado et al., 2007). Our study advances the field of adolescence substance use by showing that although parental involvement reportedly decreases during adolescence, a period when youth aim to be more independent from their parents (Laursen & Collins, 2009), low parental involvement might be stressful for some adolescents, and thus might contribute to experimentation with cigarette and marijuana use.

Cultural factors might explain the lack of association between hindered parental involvement stress and alcohol use in this sample of immigrant families primarily from Mexico. Laws on the legal minimum drinking age in Mexico (18 years old) are loosely enforced, and thus adolescents may be more likely to try alcohol early on (Lange & Voas, 2000). Moreover, drinking is an integral aspect of social events in Mexico and other Latin American countries, where youth often have their first drink at family celebrations (Pyne, Claeson, & Correia, 2002). It is possible that adolescents in the study did not perceive strong proscriptions against drinking; they might have also tried alcohol at family gatherings. This could explain why alcohol use was not related to the stress measures although half of adolescents in the sample had drunk more than a few sips at least once in their lives. Future studies could include other temporal measures of substance use, such as recent and current substance use.

Contrary to our hypothesis, family economic stress was not associated with adolescent alcohol, cigarette, or marijuana use, a finding that highlights resilience processes within immigrant families. Protective and promotive factors contributing to resilience among

Latinos living in the United States have been found at the individual, family, community, and culture level (Cardoso & Thompson, 2010). In this sample, protective parenting factors such as positive parenting and familism could be buffering the effects of family economic stress among adolescents (Kerr, Capaldi, Pears, & Owen, 2009; Mogro-Wilson, 2008; Nash, McQueen, & Bray, 2005; Ryan, Jorm, & Lubman, 2010). Overall, the lack of association between family economic stress and substance use supports Hanson and Chen's (2007) conclusion that the effect of socioeconomic status on health behaviors might not be as robust in adolescence as it is in adulthood. These weak associations could be due to the cumulative nature of stressful life experiences, which become evident in adulthood, and factors within and outside the family that moderate links between adolescent stress and substance use (Hoffmann et al., 2000; Hoffmann & Su, 1998; Lempers, Clark-Lempers, & Simons, 1989).

The high correlation between hindered parental involvement stress and family economic stress suggests that economic disadvantage is posing substantial barriers to parental involvement. Extant literature substantiates this link as poverty has been found to be a strong determinant of parents' inability to sustain high levels of parental involvement (Bradley, Corwyn, McAdoo, & García Coll, 2001; Desimone, 1999; Hofferth, 2003). Overall, Latino parents seem to be as involved in their children's lives as non-Latino White parents (Coltrane, Parke, & Adams, 2004; Hofferth, 2003; Toth & Xu, 1999; Cabrera & Bradley, 2012), and parents consider contextual constraints to parental involvement a salient concern (Bermúdez, Zak-Hunter, Stinson, & Abrams, 2014; Parra-Cardona, Córdova, Holtrop, Villarruel, & Wieling, 2008; Perreira, Chapman, & Stein, 2006).

In our study, parents were mostly low-income, and thus likely to be employed in jobs characterized by nonstandard work schedules and low autonomy, which has shown to interfere with parental involvement (Han et al., 2010; Han & Waldfogel, 2007). Barriers to parental involvement presented by economic disadvantage likely were compounded by limited English proficiency, low level of education, unfamiliarity with the US educational system, and institutional barriers to parental involvement (Behnke et al., 2008; Ramirez, 2003; Turney & Kao, 2009). Likewise, given that one or both parents in the sample lacked valid US documents, fear of encounters with the police and deportation concerns might have prevented parents from engaging in school-based parental involvement (Viramontez Anguiano & Lopez, 2012; Zapata Roblyer & Grzywacz, 2015). Taken together, results suggest that contextual barriers to parental involvement undermine adolescent resilience to experimentation with cigarette and marijuana. Within the social ecology framework, resilience in development emerges "to the extent there is capacity in the child's social and physical ecologies to facilitate processes that protect against risk and promote positive development" (Ungar, 2011, p. 4). Thus, contextual constraints to parental involvement likely diminish adolescent resilience to substance use.

As expected, affiliation with deviant peers was another factor linked to marijuana use, although not to alcohol and cigarette use. Deviant peer affiliation is a well-established risk for adolescent substance use (Dishion et al., 2004; Padilla-Walker & Bean, 2009). A number of reasons could explain the lack of association between deviant peer affiliation and alcohol and cigarette use. These two substances are licit for adults to use, whereas marijuana use is illicit in Oklahoma; thus, alcohol and cigarette use may not be interpreted by adolescents as

behaviors characteristic of deviant peers. Alternatively, low variability in alcohol and cigarette use, due to the relatively young age of the participants and their peers may have attenuated associations between the variables in question. Surprisingly, girls were more likely to belong to the alcohol user group. In most of Latin America, including Mexico, alcohol consumption tends to be more prevalent among men (Pyne et al., 2002), although studies are finding increased alcohol use among younger women (Monteiro, 2007). This finding supports results from a number of studies showing a growing trend in gender parity in substance in the United States across ethnic groups (Epstein et al., 1998; Flannery, Vazsonyi, Torquati, & Fridrich, 1994; Parsai et al., 2008; Wallace et al., 2003). It also concurs with a body of literature that has established a positive association between acculturation to the United States and favorable attitudes toward drinking among younger Latinas (Markides, Krause, & Mendes de Leon, 1988; Zeng, 2007).

Furthermore, based on extant research, we expected that substance use would be higher among older adolescents, but lower among adolescents reporting high levels of familism and parental control. Results from the logistic regression models did not sustain these assumptions. Analyses indicated that marijuana use—although not alcohol or cigarette use—significantly increased with age. Adolescents reporting higher levels of familism were less likely to be in the cigarette and marijuana user groups, and those reporting higher parental control were less likely to be in the marijuana user group. These results are consistent with studies indicating that familism and parental control are protective against substance use in adolescence (German et al., 2008; Gil et al., 2000; Marsiglia et al., 2009; Ramirez et al., 2004).

The results of this study must be interpreted in light of its limitations. The cross-sectional nature of this study precludes conclusions about causal relations between the correlates and the outcome variables in the models. The logistic regression coefficients found in the study need to be interpreted with caution, as the maximum likelihood method may produce inflated estimates in samples containing less than 100 observations (Long, 1997); our sample size ($N = 102$) was close to that limit. Replications with larger sample sizes are warranted, given our sample size and the few extant studies examining associations between substance use and adolescents' experiences of family economic and hindered parental involvement stress. We did not have the statistical power to test for differences in hindered parental involvement stress and substance use between adolescents with undocumented parents and those whose parents have documents. Future studies should examine variations between these two groups. Moreover, future studies should examine direct and indirect relations between distinct domains of adolescent stress (e.g., stress related to parent-child conflict, peer relationships, or school performance) and substance use outcomes, as well as factors mediating those associations. Studies that measure a wide range of parental involvement behaviors, as well as adolescent stress related to various dimensions of parental involvement, are also warranted.

Despite its limitations, this study extends the literature on stress and substance use among youth in immigrant families by examining adolescents' stress in relation to two variables that are salient in the lives of immigrants families headed by undocumented parents—economic disadvantage and constraints to parental behavioral involvement. This is the first known

study focused primarily on the children of undocumented parents. More research is needed to examine the role that legal status plays in these families as well as on their children's' mental and behavioral health. Results suggest that hindered parental involvement might be a stressor, as well as a risk factor for cigarette and marijuana use, among adolescents in families with undocumented immigrants. This finding is highly relevant, given the significant number of US-born youth growing up in families with undocumented members (Passel & Taylor, 2010; Taylor et al., 2011) and the barriers to parental involvement experienced by these families. Studies examining associations and causal relations between distinct types of barriers to parental involvement (e.g., types of nonstandard jobs and nonstandard work schedules) and adolescent mental and behavioral health are justified. The roles of mediating factors (e.g., familism, parental warmth, high expectations, and peer support) and moderating factors (e.g., gender, gender socialization, and neighborhood quality) warrant further research attention.

Furthermore, results are highly relevant to the epidemiology of adolescents substance use. Adolescence is a critical period of developmental vulnerability, and substance use has been established as a significant threat to healthy development during this stage of life (Committee on the Science of Adolescence, 2011). For example, it has been established that during adolescence, the use of substances, such as marijuana, interferes with brain maturation and may contribute to morbidity and mortality in adulthood (Casey & Jones, 2010; Lubman, Yücel, & Hall, 2007; Squeglia, Jacobus, & Tapert, 2009). Early use of cigarettes has been linked to a rapid transition to marijuana, more addictive substances, and substance use disorders (Chambers, Taylor, & Potenza, 2003; Clark, Kirisci, & Tarter, 1998). Latinos and other youth of color disproportionately bear the burden of substance use-related morbidity, mortality, and contact with the criminal justice system (Alegria et al., 2011; Amaro, Raj, Vega, Mangione, & Perez, 2001; Villarruel et al., 2002).

Parents in families with undocumented immigrants are the family members most likely to be undocumented (Taylor et al., 2011). Therefore, policies that allow adult immigrants to apply for legal status could improve the working conditions of parents in these families and facilitate behavioral involvement in their children's lives; in turn, such policies could decrease the risk for adolescent substance use and increase resilience among children of Latino immigrants. The results suggest that clinicians working with immigrant populations should be aware of the contextual barriers hindering parental involvement among families headed by undocumented parents, and the impact that low involvement might have on youth behavior and overall adjustment. Adolescents in these families may benefit from the active support of staff at schools (e.g., teachers and counselors), community agencies (e.g., mentoring), and faith-based organizations (youth ministries), and programs that provide out of school activities and tutoring.

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Table 1Percentage of Adolescents Endorsing Each Stressor ($N = 102$)

Item	%
<i>Family Economic Stress</i>	
1. My parents could not get a good job.	31.4
2. My family had problems paying the rent.	29.4
3. My family did not have money to pay doctors.	23.5
4. My family had to get help with food or paying the bills.	19.6
5. We did not have enough food for all of us.	17.6
6. Someone in my family was sick, but could not get medical attention because of problems with legal papers.	17.6
<i> Hindered Parental Involvement Stress</i>	
1. Because of their work obligations, my parents could not come to my school activities.	32.4
2. Because of their work obligations, my parents could not spend more time with us.	29.4
3. My parents could not help me make school-related decisions such as which courses to take.	16.7

Table 2

Bivariate Correlations for All the Variables in the Study, and Means and Standard Deviations for Continuous Variables ($N = 102$)

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Lifetime Alcohol Use	—										
2. Lifetime Cigarette Use	.60***	—									
3. Lifetime Marijuana Use	.60***	.85***	—								
4. Gender	.18	.10	.01	—							
5. Age	-.00	.13	.22*	.10	—						
6. Acculturation	.11	-.15	-.08	-.09	-.00	—					
7. Familism	-.17	-.27***	-.28***	-.20*	-.16	-.04	—				
8. Parental Control	-.23	-.12	-.20*	.15	.06	-.08	.24*	—			
9. Negative Peer Affiliation	.08	.03	.15	-.20*	.18	.21*	-.15	-.27**	—		
10. Hindered Parental Involvement Stress	.11	.32***	.22*	.23*	.21*	-.11	-.17	.07	-.14	—	
11. Family Economic Stress	.05	.17	.15	.07	.21*	-.05	-.07	.05	-.07	.71***	—
<i>M</i>	—	—	—	—	13.79	2.13	3.52	4.22	1.42	1.62	1.59
<i>SD</i>	—	—	—	—	2.16	0.42	0.61	0.92	0.70	1.01	0.94

Note:

Sex coded 0 = Male, 1 = Female

Lifetime alcohol, cigarette, and marijuana use coded 0 = No, 1 = Yes

Correlations for categorical variables correspond to Spearman's rho. All other correlations are Pearson's product-moment.

p .001**
p .01*
p .05

Table 3
Odds Ratio, p Values and Confidence Intervals for the Likelihood of Lifetime Use of Alcohol, Cigarette, and Marijuana

Variable	Lifetime Alcohol Use			Lifetime Cigarette Use			Lifetime Marijuana Use		
	OR	p	95% CI	OR	p	95% CI	OR	p	95% CI
Gender	2.90	.026	1.14, 7.38	1.23	.696	0.43, 3.55	0.84	.744	0.29, 2.40
Age	0.93	.509	0.75, 1.15	1.04	.748	0.82, 1.34	1.14	.257	0.91, 1.44
Acculturation	1.31	.580	0.50, 3.41	0.42	.117	0.14, 1.25	0.48	.181	0.17, 1.40
Familism	1.03	.946	0.47, 2.24	0.60	.209	0.28, 1.33	0.57	.165	0.25, 1.27
Parental Control	0.65	.099	0.38, 1.09	0.82	.464	0.48, 1.40	0.71	.198	0.42, 1.20
Negative Peer Affiliation	2.00	.070	0.95, 4.23	1.39	.360	0.69, 2.83	2.06	.048	1.01, 4.22
Hindered Parental Involvement Stress	1.57	.156	0.84, 2.93	3.19	.003	1.48, 6.90	2.77	.007	1.31, 5.86
Family Economic Stress	0.98	.950	0.52, 1.86	0.68	.295	0.33, 1.40	0.69	.318	0.33, 1.43

Sex coded 0 = Male (reference category), 1 = Female

OR = Odds ratio