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The Efficacy of Familias Unidas on Drug and Alcohol Outcomes for Hispanic Delinquent Youth: Main Effects and Interaction Effects by Parental Stress and Social Support

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Abstract

INTRODUCTION—Drug and alcohol use disproportionately affect Hispanic youth. Despite these disparities, few empirically supported preventive interventions are available to ameliorate this public health concern among Hispanic youth. This study examined the effects of Familias Unidas, relative to Community Practice, in reducing past 90-day substance use, alcohol and marijuana dependence, and having sex while under the influence of alcohol or drugs. Additionally, this study explored whether Familias Unidas' effects varied by environmental context, namely parental stress and social support for parents.

METHODS—A total of 242 delinquent Hispanic youth aged 12 – 17 years and their primary caregivers were randomized to either Familias Unidas or Community Practice and assessed at three time points.

RESULTS—Familias Unidas was efficacious in reducing past 90-day substance use, illicit drug use, and in reducing the proportion of youth with an alcohol dependence diagnosis, relative to Community Practice. Results also showed a reduction in the proportion of youth who reported having sex while under the influence of alcohol or drugs. No differences between conditions were observed in past 90-day alcohol use or marijuana dependence. Intervention effects on illicit drug use and alcohol dependence varied by environmental context. For example, Familias Unidas was most efficacious for adolescents with parents exhibiting high stress and lower levels of social support.

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Contributors

Authors Guillermo Prado and Hilda Pantin designed the study and wrote the protocol. Authors Yannine Estrada, Alexa Rosen, Guadalupe Bacio, and David Cordova conducted the literature searches and literature review of previous studies. Authors Maria-Rosa Velazquez, Giselle-Leon Jimenez, Derek Freitas, Maria Tapia and Juan Villamar materially participated in the research and manuscript preparation. Authors Shi Huang, Kathryn McCollister and C. Hendricks Brown conducted the statistical analyses. Authors Guillermo Prado, David Cordova, Shi Huang, Yannine Estrada, Alexa Rosen and Guadalupe Bacio wrote the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

Conflict of Interest

All authors affirm that there are no conflicts of interest.

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CONCLUSIONS—Familias Unidas was efficacious in reducing some drug and alcohol related outcomes. The findings also support the concept of targeting family-based interventions, such as Familias Unidas, for adolescents with parents exhibiting high stress and low levels of social support.

Keywords

Hispanics; youth; substance use; environment; preventive intervention; moderators

1. INTRODUCTION

Alcohol and illicit drug use among adolescents in the United States is a public health concern. Hispanic youth are disproportionately impacted by both alcohol (including binge drinking) and illicit drug use. (We use the term Hispanic to be consistent with the term used by the U.S. Census Bureau. The term Hispanic is intended to include individuals living in the U.S. or Puerto Rico from a vast variety of backgrounds, some of which may identify themselves as Latino(a)s or Chicano(a)s.) For example, Hispanic 8th graders report the highest lifetime, annual, and 30-day prevalence rates of licit and illicit substance use (with the exception of amphetamines), relative to their non-Hispanic white and African American counterparts (Johnston et al., 2011). There is considerable heterogeneity within Hispanic youth in terms of alcohol and illicit drug use. Some of this intra-group variation can be explained by nativity status and country of origin. For example, a population-based study by Vega et al. (2002) revealed that U.S.-born Hispanic adolescents report higher drug use rates than do foreign-born Hispanics. Similarly, a study by Delva et al (2005) found that Cuban American 8th graders had the highest rates of marijuana and cocaine use and heavy drinking, compared to Mexican American, Puerto Rican, and other Latin American 8th grade adolescents living in the U.S.

Delinquent Hispanic youth are at even higher risk for substance use compared to Hispanic youth in the general population (Prado et al., 2011). Past studies have shown that Hispanic youth are overrepresented, second to African-Americans, in the juvenile justice system (Snyder et al., 2006), and that drug use is higher among Hispanics compared to non-Hispanic white and African-American youth (Teplin et al., 2003) in these systems. Substance use and risky sexual behaviors often co-occur (Prado et al., 2006; Griffin et al., 2011). Numerous studies have demonstrated that being under the influence of substances while engaging in sex is associated with HIV risk behaviors, including unprotected sex and increased number of sex partners (e.g., Charnigo et al., 2012; Cook and Clark, 2005; Cooper, 2002; Santelli et al., 2001). Given that Hispanic adolescents in general are more likely to report higher rates of licit and illicit substance use (with the exception of amphetamines) and are least likely to report having used a condom at last sexual intercourse as compared to both non-Hispanic whites and African Americans, Hispanic delinquent youth may be at increased risk of engaging in sex while under the influence and thus engaging in additional HIV risk behaviors, including unprotected sex. These statistics demonstrate the need to evaluate substance abuse prevention interventions among delinquent Hispanic youth in particular.

Although disparities in substance use among Hispanic youth pose a significant public health problem, few preventive interventions have been developed and empirically evaluated for this population (Gonzales et al., 2006; Prado et al, 2010). Familias Unidas is one of few preventive interventions found to be efficacious in reducing substance use, including drug and alcohol use, among Hispanic adolescents (Pantin et al., 2009; Prado et al., 2007). Familias Unidas is a family-based preventive intervention that targets multiple adolescent subsystems (i.e., family, school, peers) by intervening through the parent to prevent and

reduce problem behaviors, including both substance use and HIV sexual risk behaviors. The theoretical framework for Familias Unidas is ecodevelopmental theory which posits that adolescent problem behaviors are influenced by risk and protective processes present in the adolescent's environmental context (Prado and Pantin, 2011). The environmental context in which adolescents are situated consists of a network of overlapping and mutually interacting subsystems consisting of the macrosystem, exosystem, mesosystem and microsystem (Szapocznik and Coatsworth, 1999). *Macrosystems* refer to the broad social and philosophical ideals that define a particular culture (e.g., cultural values); *exosystems* are the contexts in which the adolescent does not participate directly but that impact the functioning of important members of the adolescent's life, such as parents' support systems; *mesosystems* refers to the contexts which are comprised of the interactions between important members of the different contexts in which the adolescent participates directly (e.g., parental monitoring of peers) and *microsystems* are the contexts in which the adolescent participates directly, such as the family. These mutually evolving systems have a temporal and reciprocal effect on youth such that youth are impacted by their surrounding environment and the surrounding environment is impacted by the youth across time. Family, located within the microsystem, is the most proximal system and, therefore, has a strong impact on youth. Hence, the family microsystem is at the center of the Familias Unidas intervention.

Previous studies have demonstrated that improvements in family functioning is the mechanism through which Familias Unidas has its effects, highlighting the important role of family in preventing negative youth outcomes (Prado et al., 2007). Prior research has shown that Familias Unidas is efficacious in reducing substance use in universal and selected samples of Hispanic youth (Pantin et al., 2009; Prado et al., 2007). However, Familias Unidas, has not yet been evaluated with regards to reducing substance use and dependence in an indicated sample of Hispanic delinquent youth. Therefore, the primary purpose of this study is to evaluate the efficacy of Familias Unidas, relative to Community Practice, in reducing: (a) alcohol and illicit drug use, (b) alcohol and marijuana dependence, and (c) unsafe sex while under the influence of alcohol or drugs. We hypothesize that Familias Unidas will be efficacious, relative to Community Practice, in reducing (a) alcohol and illicit drug use, (b) alcohol and marijuana dependence, and (c) unsafe sex while under the influence of alcohol or drugs.

In addition to examining the effects of Familias Unidas in reducing alcohol and drug use, this study will explore whether the efficacy of Familias Unidas is moderated by environmental context. Specifically, we will examine whether the efficacy of Familias Unidas is moderated by parental stress and social support for parents. Studies of family-based preventive interventions have not generally examined the impact of parental stress and social support as moderators of intervention efficacy. While it is important to examine how interventions work (i.e., mediators), it is also important to examine for whom interventions work (or do not work)? (Tein et al, 2004; Brown et al., 2008). Therefore, in addition to examining the effects of Familias Unidas on alcohol and drug related outcomes, we will also explore whether the effects of Familias Unidas vary as a function of parental stress and social support for parents. We anticipate that the intervention may work better for families with high parental stress and low social support for parents because our own work has shown that Familias Unidas has been more efficacious in families with lower family functioning, and consequently at higher risk (Prado and Pantin, 2011). If we extend this logic, we expect that Familias Unidas will work better for families in an environmental context characterized by high parental stress and low social support for parents (i.e., for families at higher risk). Moreover, ecodevelopmental theory (Pantin et al., 2004; Prado et al., 2010) suggests that macrosystemic phenomena, such as the mismatch between a family's culture of origin and that of the host country, produce a "trickle-down" effect by

contributing to exosystemic problems such as parental isolation, which in turn may cut parents off from their adolescents' peer networks (i.e., mesosystemic problems; Pantin et al., 2004). For example, clinical literature suggests that when immigrant parents are unfamiliar with the culture of their new homeland, they tend to remain isolated and not to reach out for social support (Leon and Dziegielewski, 2000). Lack of social support, in turn, may inhibit supportive and involved parenting (Simons et al., 1993). Lack of parental involvement in the adolescent's life (microsystemic problem) and peer worlds (mesosystemic problem) then increases the likelihood of problem behaviors, including drug use (Prado et al., 2010). Exploring the efficacy of Familias Unidas by taking these important factors into consideration will advance our understanding of preventive interventions beyond "what works" to "for whom does it work." Examining whether environmental context, specifically social support for parents and parental stress, moderates the effects of preventive interventions is particularly salient given the varying levels of stressors experienced by Hispanic families (Tapia et al., 2006).

2. METHODS

2.1. Participants

This study was approved by the University of Miami's Institutional Review Board. The study sample consisted of Hispanic delinquent adolescents and their primary caregivers recruited through the Miami-Dade County's Department of Juvenile Services and the Miami-Dade County Public School system (MDCP-S). For the purposes of this study, delinquency was defined as having been arrested or as having committed at least one "Level III Behavior Problem," described by MDCP-S as assault/threat against a non-staff member, breaking and entering/burglary, fighting (serious), hazing, possession or use of alcohol and/or controlled substances, possession of simulated weapons, trespassing, and vandalism. To be eligible for this study, adolescents had to: (a) identify as Hispanic or Latino, (b) be between the ages of 12 – 17 years, (c) have plans to remain a resident of South Florida during the study period, and (d) have been identified as a delinquent youth. Research staff screened eligible participants over the phone and participants who met all of the eligibility criteria above were scheduled to come into to the research team's office to have the study explained to them, sign informed consent/assent, and complete the baseline assessment. Of the 310 participants who met the study's eligibility criteria, 242 (78.1%) youth and their primary caregivers agreed to participate (Figure 1).

Participants in the present study were 156 boys and 86 girls (mean age =14.7, $SD=1.38$) and their primary caregivers. The median household income was \$15,000 to \$19,999. Sixty five percent of adolescents were born in the U.S. Among U.S born youth, 136 were second generation and 22 were third generation. Of foreign born adolescents, 70% had been living in the U.S. 10 years or less. Immigrant adolescents ($n = 84$) and parents were primarily born in Cuba (25.0%), Honduras (15.5%), Nicaragua (9.5%), Puerto Rico (8.3%), and Dominican Republic (7.1%). Twenty-three percent of all the adolescents reported speaking mostly English, 42% reported speaking mostly Spanish, and 35% reporting speaking both English and Spanish at home. In terms of acculturation, most youth reported being assimilated (46%; $n=108$) or bicultural (48%; $n=112$).

2.2. Study Design

The present study consisted of a 2 (Condition) x 3 (Time) randomized controlled trial. Participants were assessed at baseline, randomized to either Familias Unidas or Community Practice using concealment of allocation procedures, and reassessed at 6 and 12-months post baseline. Concealment of allocation refers to the procedure for ensuring that the condition assignment to be allocated is not known before the participant is enrolled in the study.

2.3. Study Conditions

2.3.1. Experimental Condition.—Familias Unidas is a Hispanic-specific, family-based intervention designed to prevent substance use and unsafe sexual behavior (Prado and Pantin, 2011). Familias Unidas is guided by ecodevelopmental theory (Prado et al., 2010), a risk and protective factors, social-ecological model. Drawing from culturally specific models (Prado and Pantin, 2011), Familias Unidas sessions are aimed at positioning parents as the experts of their adolescents' needs and development. Administered over a 12-week period, the intended dosage for participants randomized to Familias Unidas included 8 two-hour multi-parent group sessions and 4 one-hour family visits. The actual mean number of sessions attended was 6.88 (SD = 4.05). Among those that attended at least one session (87%), the mean number of sessions was 7.9 (SD = 3.2). The primary goal of the parent groups was to bring parents together for the purposes of establishing parental investment, increasing parental support, and providing a context for parent participation in a conjoint skills learning process. The primary goal of the family visits was to provide parents with an opportunity to transfer the competencies learned in the group sessions to their adolescent, foster more nurturing and supportive relationships, and increase parent-child communication, all in the context of family. All intervention sessions were parent-centered, with adolescents' participation in intervention activities limited to the four family visits. Familias Unidas is not a gender-specific prevention program, however, Familias Unidas does consider the role of gender in the intervention. For example, during the adolescent risky sexual behavior and HIV session, parents are exposed to a demonstration on the use of female condoms. Please see Prado and Pantin (2011) for additional details with regard to the Familias Unidas preventive intervention.

2.3.2. Community Practice—Standard care services were offered to those participants randomized to Community Practice. Standard care services include referrals to community-based organizations that offer several therapeutic modalities, including individual and family therapy, as well as address multiple problem behaviors, including alcohol and drug use. These services are made available to youth and parents of delinquent youth who reside in Miami-Dade County.

2.4. Measures

Participants completed the survey assessment using the audio-CASI system (Resnick, 1997), an audio-enhanced, computer-assisted self-interviewing program, in either English or Spanish. Participating families were compensated \$60, \$70, and \$80 for completing the baseline, 6, and 12-months post baseline assessments, respectively.

2.4.1. Outcome Measures

Substance use was assessed using items similar to those used in the Monitoring the Future Study (Johnston et al., 2011). At each assessment, adolescents were asked whether they had drank alcohol, or used an illicit substance in the 90 days prior to assessment. For the present study, binary variables were created to indicate any alcohol use and illicit drug use in the past 90 days. A binary variable was also created to indicate any substance use (i.e., alcohol use or illicit substance use) in the past 90 days. *Alcohol dependence* and *marijuana dependence* was assessed using adolescent reports on the Diagnostic Interview Schedule for Children (DISC) predictive scales (Lucas et al., 2001). Although the DISC predictive scales do not provide formal alcohol dependence and marijuana dependence diagnoses, there are established cutoff scores, which have been found to be predictive of formal alcohol dependence or marijuana dependence diagnoses (Lucas et al., 2001).

Having had sex under the influence of alcohol and drug use was measured using one item from the Sexual Behavior instrument (Jemmott et al., 1998). At each assessment time point,

adolescents were asked to indicate whether they had ever had sex in their lifetime and in the 90 days prior to assessment. Adolescents who reported having had sex in the past 90 days were asked on how many days they got high on alcohol or drugs and engaged in sex in the past 90 days. For the present study, a binary variable was created to indicate if participants engaged in sex under the influence of alcohol or drugs in the past 90 days. The impact of Familias Unidas on non alcohol or drug related sexual risk behaviors can be found elsewhere (Prado et al., 2011).

2.4.2. Environmental Context - Parental Stress and Social Support for Parents as Potential Moderators of Intervention Effects

Parental stress was assessed using the Hispanic Stress Inventory (Cervantes et al., 1991). Parents were asked to indicate whether, and the extent to which, in the past six months, they had experienced stressors related to occupational/economic, parental, family, culture, marital, and immigration processes. All responses ranged from “0=no problem” to “5=extremely worried/tense.” A parental stress total score was derived by summing all 73 stress items. Cronbach’s alpha for the total parental stress score was .93. For the present study, a cut-off score of 73, indicating an average response of “a little worried/tense” on each question, was used to create a dichotomous measure of moderate to high (n=79) and low (n=163) parental stress.

Social support for parents was measured using the Social Provisions Scale (Russell et al., 1984). The 24-item measure assesses five domains of social support: guidance, reliable alliance, reassurance of worth, attachment, social, and integration. All responses ranged from “1=strongly disagree” to “4=strongly agree”. A total social support for parents subscale score was created by summing all 24 support items. Cronbach’s α for the social support for parents scale is .91. For the present study, a cut-off score of 72, indicating an average response of “agree” on each question, was used to create a dichotomous measure of high (n=119) and low (n=123) social support for parents.

2.5. Data analytic strategy

The data analytic plan consisted of four steps. First, chi-square tests and analyses of variance were conducted to examine if there were significant differences at baseline by condition on any of the demographic characteristics or outcome variables. Second, a chi-square test was conducted to examine if there was a significant difference in attrition by condition. Third, growth curve analyses were used to estimate individual trajectories of change and to test for slope differences between conditions over time. Growth curve modeling is more powerful and versatile than repeated measures analysis of variance because it allows for missing data and uses all available data (Little and Rubin, 1987). With the assumption that the data are missing completely at random or missing at random, full information maximum likelihood produces consistent and efficient estimates of parameters and their standard errors (Brown, 2006). For each of the outcomes, data from all three assessment points were used. For the substance use outcome, we first tested the effect of condition on overall substance use (i.e., alcohol use or illicit drug use) in the past 90 days. If the effect of condition on substance use differed by condition, we decomposed substance use to test condition effects separately for alcohol use and illicit drug. A similar growth curve was estimated to examine potential differences by condition in the proportion of youth having sex under the influence of alcohol or drugs. Only sexually active youth were included in these analyses. Finally, to test whether parental stress and social support for parents moderated the effects of condition on any of the outcomes, multi-group growth curve models were estimated. In multi-group analysis, we allowed condition effects (i.e., regression coefficients of trajectory slope on condition) to be freely estimated for each group (e.g., low social support for parents vs. high social support for parents). Because of the exploratory nature of these analyses, we interpreted the

moderation effects of both social support for parents and parental stress separately for the low vs. high groups.

3. RESULTS

3.1. Comparability of Conditions at Baseline

Chi-square tests and analyses of variance indicated no significant differences at baseline by condition on any of the demographic characteristics, past 90 days substance use, alcohol and illicit drug use, alcohol dependence, marijuana dependence or having had sex under the influence of drugs and alcohol in the past 90 days (Table 1). However, a higher proportion of youth in Familias Unidas had an alcohol dependence diagnosis. We controlled for this baseline difference in the growth curve analysis by explicitly specifying the outcome at baseline as a function of treatment condition. We also correlated the intercept and slope growth factors. There was no differential attrition across the 2 conditions over time (5.8% and 4.9% for Familias Unidas and Community Practice, respectively; $\chi^2=0.039$; $p=0.981$). We also compared participants who were lost to follow up relative to those who completed the follow-up assessments, and found no significant differences between the two groups on demographic variables or any of the study outcomes at baseline.

3.2. Tests of intervention effects

3.2.1. Intervention effects on substance use—Growth curve analyses showed a significant difference in past 90-day substance use between Familias Unidas and Community Practice ($b=-0.67$, $p=.02$, $\delta=1.06$; the effect size was computed as the difference in the slope means for intervention and control group divided by the population standard deviation of the slope growth factor; Muthén and Muthén, 2002; Raudenbush and Xiao, 2001.) The proportion of youth reporting substance use (alcohol or drug use) in Familias Unidas decreased from 44.4% at baseline to 33.3% at 12-months post-baseline, whereas the proportion of substance use increased from 38.8% to 45.5% for youth in Community Practice. Substance use was then decomposed into illicit drug use and alcohol use to examine intervention effects on each of these two outcomes. The results showed that Familias Unidas was efficacious in reducing illicit drug use in the past 90 days ($b=-0.72$, $p=0.04$, $\delta=0.79$). The proportion of youth reporting illicit drug use in Familias Unidas decreased from 29.1% at baseline to 22.5% at 12-months post-baseline, whereas it increased in Community Practice from 23.1% to 31.3%. Although there was a trend favoring Familias Unidas in terms of current alcohol use, no statistically significant intervention effects were found ($b=-0.47$, $p=0.14$, $\delta=0.57$).

3.2.2. Intervention effects on alcohol dependence and marijuana dependence—Growth curve analyses indicated a significant difference in the percentage of youth with an alcohol dependence diagnosis over time between Familias Unidas and Community Practice ($b=-1.16$, $p=0.02$, $\delta=0.93$). The percentage of adolescents with an alcohol dependence diagnosis over time decreased from 15.8% to 5.4% for Familias Unidas, while it increased from 6.6% to 8.1% for Community Practice (Figure 2). Although there is a trend favoring Familias Unidas in terms of the proportion of youth with a marijuana dependence diagnosis, no significant intervention effects were found ($b=-0.33$, $p=0.25$, $\delta=0.93$).

3.2.3. Intervention effects on having had sexual intercourse while under the influence of alcohol or drugs—Growth curve analyses showed a significant difference in past 90-day having had sexual intercourse under the influence of alcohol or drugs between Familias Unidas and Community Practice ($b=-1.39$, $p=.025$, $\delta=1.04$). As can be seen in Figure 3, the proportion of youth reporting having had sex while under the influence of alcohol or drugs increased from 12.5% to 34.9% in youth randomized to Community

Practice. In contrast, adolescents randomized to Familias Unidas reported no change in the proportion of youth having had sex under the influence of alcohol or drugs from baseline to 12 months post-baseline assessment.

3.3. Moderating effects of environmental context

3.3.1. Moderating effects of social support for parents—Familias Unidas was efficacious in reducing the proportion of youth with an alcohol dependence among adolescents whose parent reported low social support ($b=-2.4$, $p=.05$, $=0.99$) (Figure 4), but not for adolescents whose parent reported high social support ($b=-0.76$, $p=.21$, $=1.11$). No significant intervention effects were observed for the other outcomes.

3.3.2. Moderating effects of parent stress—Familias Unidas was efficacious in reducing the proportion of youth reporting past 90 day illicit drug use among adolescents whose parents reported high parental stress ($b=-1.80$, $p=.04$, $=1.07$) (Figure 5), but not efficacious for adolescents whose parent reported low parental stress ($b=-0.49$, $p=.19$, $=0.66$). No significant intervention effects were observed for the other outcomes.

4. DISCUSSION

Few studies have evaluated the efficacy of a substance abuse preventive intervention for Hispanic delinquent youth (Prado et al., 2011). Study findings indicate that Familias Unidas was efficacious in reducing some substance use related outcomes, including illicit drug use, alcohol dependence, and number of days high or drunk while having sex. In addition, Familias Unidas was efficacious in reducing alcohol dependence and illicit drug use among Hispanic adolescents whose parents reported low levels of social support and parental stress, respectively. Demonstrating that a preventive intervention can reduce substance use and unsafe sexual behavior in Hispanic delinquent youth, as well as identifying for whom interventions are efficacious and for whom not has important implications for the prevention of substance use among Hispanic delinquent youth.

Contrary to previous studies which have demonstrated delayed effects of family-based preventive interventions (e.g., Prado et al., 2007; Sandler et al., 2011), the effects of Familias Unidas on substance use were observed at 6-months post-baseline. It might be that youth who report current substance use and who are at relative high-risk might demonstrate the benefits from having participated in a preventive intervention at an accelerated rate, when compared to adolescents who are at low-risk. For example, we might expect delayed effects in 13-14 year old low-risk adolescents until youth reach 16-17 years of age where the risk for substance use might be more pronounced (Johnston et al., 2011). As suggested by the present findings, however, we might observe non-delayed effects in high-risk samples as early as 15 years of age. This finding, combined with those of previous studies (Prado et al., 2007; 2011), speak to not only the efficacy of Familias Unidas as a prevention model, but also lends support to Familias Unidas as a treatment model. Future research might explore whether Familias Unidas is as efficacious as treatment modalities, such as family therapy or outpatient drug treatment.

Although Familias Unidas was found to be efficacious in reducing alcohol dependence, no differences were found between Familias Unidas and Community Practice for current alcohol use. Factors, including alcohol as a socially acceptable and accessible substance, high prevalence of binge drinking among youth, impact of locally availability of venues where alcohol can be purchased, and adherence to laws regarding selling to minors might partially explain the lack of findings on alcohol use. Hispanic cultural perspectives and norms with regard to alcohol use might also partially explain these findings. Specifically, it might be that some Hispanic cultures have normative attitudes toward adolescent alcohol

use (Caetano et al., 1998). Consequently, primary caregivers might not perceive adolescent alcohol use as problematic until abuse or dependence occurs. Another explanation refers to the fact that the majority of this sample identified as foreign-born. In a previous study (Cordova et al., in press), Familias Unidas was found to be efficacious in reducing alcohol use for U.S.-born participants, but not for foreign-born participants. It may very well be that foreign-born participants might be more likely to participate in cultural-specific celebrations (e.g., *baptismos*, *quinceañeras*) where adolescent alcohol use might be more likely to occur. This may in fact drive these effects, or lack thereof, with regard to alcohol use. Future research should investigate the effects of including a module which highlights the health consequences of adolescent alcohol use, including the potential for future abuse and dependence, in a cultural context where adolescent alcohol use might be more likely to occur.

The finding that Familias Unidas was efficacious in reducing the number of days youth had sex while under the influence of drugs and alcohol is of high public health significance given that Hispanic delinquent youth and youth in general report high levels of unsafe sexual behavior. According to the CDC's Youth Risk Behavior Surveillance Survey of high school students who reported having sex within three months prior to completing the survey, 21.6% reported drinking alcohol or using illicit drugs before last sexual intercourse (2009). Compared to non-Hispanic white, Hispanic youth disproportionately report higher rates of drinking alcohol or using illicit drugs before last sexual intercourse. Thus, our finding that Familias Unidas has an impact on decreasing the proportion of Hispanic delinquent youth who have sex while under the influence of alcohol or drugs, coupled with findings reported elsewhere (Prado et al., 2012) that Familias Unidas has an impact on HIV sexual risk behaviors outcomes (including unprotected sexual behavior) has important public health implications for the reduction of HIV risk behaviors and its related consequences such as pregnancy, HIV and other STDs, and risk of sexual coercion and rape for girls.

The findings that environmental context moderates the effects of Familias Unidas on some of the outcomes contributes to our understanding of for whom preventive interventions work and for whom not. Specifically, Familias Unidas was found to be efficacious in reducing the proportion of youth with an alcohol dependence diagnosis for those adolescents whose environmental context was characterized by low parental social support. Furthermore, Familias Unidas was also found to be efficacious in reducing illicit drug use among adolescents whose environmental context was characterized by higher levels of parental stress, but not in families experiencing lower levels of parental stress. This is not all that surprising given that previous efficacy studies suggest that Familias Unidas is most efficacious in adolescents who are at higher family risk (Prado and Pantin, 2011). These findings expand our understanding of the effects of the environmental context because, whereas previous Familias Unidas studies have focused on the environmental context at the microsystem level (i.e., family functioning), this study highlights the effects of the environmental context on preventive interventions at the exosystem level (i.e., parental support and stress). These findings have important implications for prevention science in that it begins to shed light as to whom family-based preventive interventions should be targeted to.

There were several limitations of this study. First, the study is not representative of the U.S. Hispanic population or Hispanic delinquent youth, and therefore the findings might not generalize to the entire Hispanic population. Second, the reliance on self-report measures is a limitation, particularly with respect to the report of substance use (Brenner et al., 2003). Future studies could implement the use of biomarkers in addition to self-report measures. Third, no data were collected on binge drinking. Given the high prevalence of binge drinking among youth and the associated negative health outcomes (CDC, 2012), future

studies could collect these data. Another limitation is that we did not collect in depth data on those families who decided not to participate. Thus, we are not able to determine whether any differences exist between those families who participated in the study relative to those families who declined to participate. Additionally, we did not collect data on what community practice services were actually received by those participants in the Community Practice condition. Another limitation of this study is that the exact role of physical, emotional and sexual abuse cannot be determined because data on these factors were not collected as part of this study. Thus, the possibility exists of participants' underlying psychological conditions, such as post-traumatic stress disorder and or anxiety disorders, which may interact with intervention effects. Finally, an attention control condition was not used in this study. Future studies could match intervention dosage to that of Familias Unidas, which might be helpful to control for non-specific elements of intervention exposure.

In summary, the present findings indicate that Familias Unidas might have the potential to reduce substance use related outcomes among Hispanic delinquent youth. In addition, the results suggest that the effects of Familias Unidas vary by environmental context, which might be helpful in answering for whom do preventive interventions work and for whom not. These findings could help inform prevention efforts aimed at reducing substance use related outcomes, including alcohol dependence, experienced by Hispanic adolescent populations.

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Figure 1.
Flow of Study Participants

* Participants declined to participate or were lost to follow up. These participants declined the 6 month post-baseline interview only. Thus, participants who declined the 6 month post-baseline interview may have participated in the 12 month post-baseline interview.

Figure 2.

Past 90 Days Alcohol Dependence Diagnosis by Condition

Note: Error bars represent the 95% confidence interval (Two overlapping 95% CIs doesn't necessarily indicate the difference is not statistically significant at $\alpha=0.05$ level; Wolfe & Hanley, 2002)

Figure 3.
Had Sex while Under Influence of Alcohol or Drugs by condition: Past 90 days
Note: Error bars represent the 95% confidence interval

Figure 4.
Alcohol Dependence Diagnosis by Condition for Low Parents Social Support Network Group
Note: Error bars represent the 95% confidence interval

Figure 5.
Past 90 Days Illicit Drug Use by Condition for High Parents Hispanic Stress Group
Note: Error bars represent the 95% confidence interval

Table 1

Baseline Comparisons by Condition on Adolescent Demographic Characteristics and Substance Use Variables

Variables	Condition			
	Familias Unidas (n=120)		Community Practice (n=122)	
	N (%)	Mean (SD)	N (%)	Mean (SD)
Gender	M = 80 (66.7) F = 40 (33.3)		M = 76 (62.3) F = 46 (37.7)	
Mean age (SD)		14.8 (1.36)		14.6 (1.41)
Born in US	75 (62.5)		83 (68.0)	
Family income				
\$ 0 - \$9,999	30 (25.0)		41 (33.6)	
\$ 10,000 - \$19,999	38 (31.7)		35 (28.7)	
\$ 20,000 - \$29,999	26 (21.7)		22 (18.0)	
> \$ 30,000	26 (21.7)		24 (19.7)	
Percent reporting substance use (drugs or alcohol) in the past 90 days	52 (44.4)		47 (38.8)	
Percent reporting illicit drug use in the past 90 days	34 (29.1)		28 (23.1)	
Percent reporting alcohol use in the past 90 days	41 (34.7)		36 (29.5)	
Percent diagnosed with alcohol dependence the past 90 days	19 (15.8)		8 (6.6)	
Percent diagnosed with marijuana dependence the past 90 days	24 (20.0)		17 (14.0)	
Percent reporting had sex under influence in the past 90 days	9/41 (22.0)		8/36 (22.2)	

Note: there were no significant baseline differences between conditions in study variables except for % diagnosed with alcohol dependence the past 90 days ($X^2(1)=5.15$, $p=0.023$)