HHS Public Access

Author manuscript

Prev Sci. Author manuscript; available in PMC 2023 November 13.

Published in final edited form as:

Prev Sci. 2022 January ; 23(1): 119–129. doi:10.1007/s11121-021-01272-1.

Efficacy of a Family-Based Intervention for HIV Prevention with Hispanic Adolescents with Same Gender Sexual Behaviors

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Abstract

Background: Despite the availability of efficacious and effective family-based interventions, such interventions are scarce for sexual minority adolescents, particularly among ethnic/racial minorities. Prior to creating an entirely new intervention, a prudent first step may be to determine if existing interventions are efficacious in reducing risk behaviors in sexual minority adolescents. This study assesses the relative efficacy of a general, family-based intervention (Familias Unidas) on improving substance and condom use outcomes among Hispanic adolescents with same gender sexual behaviors (HASGB).

Methods: Data across five distinct trials of Familias Unidas were synthesized. HASGB were randomized either to an intervention (n=94) or control condition (n=100). Mediation analyses tested for intervention efficacy on past 90-day substance (cigarette/alcohol/illicit drug) use and condomless sex at last intercourse in HASGB participants and whether family functioning indicators – parent-adolescent communication, positive parenting and parental monitoring of peers – mediated the effects. Post hoc analyses explored the moderating role of study target population based on prior risk.

Results: Familias Unidas did not impact substance use, but significantly reduced condomless sex post-intervention relative to the control condition. Hypothesized mediators did not explain this effect. Post hoc analyses indicated that the effect was significant in studies that recruited based on prior risk but not studies that recruited universal samples.

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

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (University of Miami Institutional Review Board, 20150665) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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

Conclusion: Our results suggest that a general, family-based intervention may have positive effects on condom use in HASGB, particularly those with prior indicated risk. Identifying intervention components that drive this effect in addition to developing tailored content for HASGB is needed.

Keywords

sexual minority; internalizing behavior; externalizing behavior; gay; adolescent

Risk behaviors, including substance use and sexual risk behaviors, tend to be initiated in adolescence (Ahmadi-Montecalvo et al., 2019; Ritchwood et al., 2015; Storholm et al., 2018; O'Malley et al., 1995; Bachman et al., 1998). Studies have revealed that some youth subpopulations experience a disproportionate burden of these risk behaviors (Johnston et al., 2019). Sexual minorities are those who are attracted to the same gender, engage in sexual behavior with the same gender, and/or endorse a gay, lesbian, or bisexual identity (Math and Seshadri, 2013) Relative to their non-sexual minority counterparts, these adolescents consistently report higher substance use and engagement in sexual risk behaviors (Institute of Medicine, 2011; Marshal et al., 2008). Data from the 2015 Youth Risk Behavior Surveillance System (YRBSS) indicate that, across a majority of indicators for recent and lifetime substance (tobacco, illicit drug, alcohol) use and sexual risk behavior (condomless sex), sexual minority adolescents self-report significantly higher prevalence across these behaviors (Kann et al., 2016). Furthermore, studies with sexual minority adolescents who are also ethnic minorities, such as Hispanic adolescents with same gender sexual behaviors (HASGB) have indicated significantly higher substance use compared to their non-HASGB counterparts (Ocasio et al., 2016).

Despite these documented disparities, no evidence-based prevention intervention programs targeting condomless sex and substance use for HASGB currently exist. Among the Center for Disease Control's (CDC) Compendium of Evidence-based HIV Behavioral Interventions, there are interventions targeting men who have sex with men (MSM) and Hispanics, respectively; none have been developed or evaluated for youth with dual ethnoracial and sexual minority identities. There is an urgent need to expand current research in this area and to evaluate culturally-informed prevention interventions for this understudied Hispanic population.

The Role of Family and HASGB

Family characteristics (e.g. communication and parental involvement) are strongly associated with risk behaviors in adolescent populations, including Hispanics (Prado and Pantin, 2011; Ialongo et al., 1999; Dishion et al., 2002) and sexual minorities (Ryan et al., 2009; Tucker et al., 2008). General characteristics of the parent-child relationship, such as lack of caring and support, in addition to parental awareness and unsupportive response to youth's sexual minority status are negatively associated with substance use and condomless sex (Bouris et al., 2010). Moreover, Hispanic sexual minorities have reported more negative reactions to their sexual identity from families relative to non-Hispanic White sexual minorities (Ryan et al., 2009). Hispanic parents also have more negative attitudes

about homosexuality relative to non-Hispanic White and Black sexual minorities (Richter et al., 2017) due to cultural values that are related to traditional family and gender roles. Hispanic cultures prioritize familial obligations (*familismo*) over the needs and desires of the individual (Santisteban et al., 2002) and may have important implications for concealing one's sexual minority identity to a non-accepting family to preserve familial harmony. Homosexuality also directly challenges traditional Hispanic gender role expectations, such as *machismo,* which promote men's masculinity (Przeworski and Piedra, 2020; Nuñez et al., 2016) and *marianismo*, which focuses on women's expectations to adhere to sexual moral values, be caretakers, and make sacrifices on behalf of the family (Gil and Vazquez, 2014; Hussain et al., 2015). These cultural factors may therefore deter HASGB from disclosing their sexuality in order to maintain family harmony due to fear of rejection, stigma, and discrimination(Eaton and Rios, 2017). By doing so, HASGB simultaneously risk their own well-being by not freely expressing their sexuality but rather concealing it at home (Gattamorta and Quidley-Rodriguez, 2018; Gonzalez et al., 2017). This may lead to poor mental health outcomes among HASGB (Pachankis et al., 2020; Walch et al., 2016). Similarly, parents may also conceal awareness of their adolescents' sexuality in order to avoid conflict within the family and with their child. Parents' initial reactions to adolescents' disclosure may cause adolescents to feel as though their parents do not explicitly support certain aspects of their identity, when in fact, parents are taking the time to process the disclosure (Lozano et al., 2021). Furthermore, some parents may be unaware of the impact of negative reactions to their adolescent's sexual orientation disclosures (Newcomb et al., 2019) or may not know how to be supportive. This may cause strain between family members (i.e., parents and HASGB) which may inhibit effective family functioning (National Academies of Sciences and Medicine, 2020). Therefore, interventions that work to improve family functioning processes may be a critical target to reducing risk behaviors among HASGB.

A 2011 report by the Institute of Medicine (IOM) has recommended development of interventions that target family context in ethnic/racial sexual minority youth to mitigate risk behaviors (Institute of Medicine, 2011). However, there are important considerations when engaging in family-based research with sexual minority adolescents. Arguably, those at highest risk are sexual minority adolescents who have yet to disclose their sexual identity or behaviors to those around them. Further, they may be reluctant to disclose to their parents for fear of rejection (Bouris et al., 2010; Ryan et al., 2009). There are potential dire consequences, such as psychological distress or even suicidality that may occur if a sexual minority adolescent's sexual identity or behaviors were to be inadvertently disclosed (Fisher and Mustanski, 2014; Mustanski, 2011). This may provide challenges in developing and testing interventions for this population.

Thus, prior to embarking on creation of an entirely new intervention, a prudent first step may be to determine if existing evidence-based, family-centered interventions are efficacious in reducing HASGB risk behaviors. Familias Unidas is a culturally informed, family-based intervention designed specifically to reduce and prevent Hispanic adolescent substance use and sexual risk behavior. However, Familias Unidas was not originally developed for HASGB, and does not include any content related to sexual orientation or same gender sexual behaviors. Previously published studies reporting the efficacy and effectiveness of

Familias Unidas have identified parent reported family functioning indicators (i.e., parent-adolescent communication, positive parenting and parental monitoring of peers) as partially mediating the improvements on risk outcomes (Estrada et al., 2017; Estrada et al., 2015; Prado et al., 2012a; Prado et al., 2012b; Prado and Pantin, 2011; Pantin et al., 2009), but have not been explored in its HASGB participants. The goal of this study is to determine if, compared to control condition, Familias Unidas is efficacious in reducing past 90-day substance use and condomless sex at last intercourse among HASGB, and if so, whether parent-reported family functioning indicators (parent-adolescent communication, positive parenting and parental monitoring of peers) partially mediate the effects of Familias Unidas on the outcomes. We hypothesize that:

Hypothesis 1.

Familias Unidas will be more efficacious than the control condition in reducing substance use and condomless sex in HASGB over time.

Hypothesis 2.

The effect of Familias Unidas on substance use and condomless sex will be partially mediated by family functioning indicators.

Methods

Familias Unidas Intervention Studies

This study synthesized data across five distinct trials testing the relative efficacy/effectiveness of Familias Unidas (Estrada et al., 2017; Estrada et al., 2015; Pantin et al., 2009; Prado et al., 2012b; Prado et al., 2007). Familias Unidas aims to prevent and reduce substance use and risky sexual behavior by strengthening family functioning processes (e.g., positive parenting, support, communication, monitoring of peer and school activities) through multi-parent group sessions and family visits. During group sessions, a trained facilitator uses a participatory learning approach to guide parents in discussing adolescent risk behaviors and acquiring and practicing parenting skills (e.g., parent-adolescent communication, positive parenting). Parents are also educated on adolescent HIV and substance use statistics, consequences of these behaviors and are taught prevention methods (e.g., condom use). During family sessions, facilitators work directly with the parent and adolescent to practice and reinforce skills learned during group sessions and to restructure family interactions. These core intervention components were consistent across synthesized studies with some variations in other study characteristics. It is important to note that the intervention does not include content specific to sexual minorities such as same gender sexual behaviors. Table 1 summarizes various characteristics of each of the five synthesized Familias Unidas studies, including assessment time points, control conditions and proportion of HASGB within each study and condition.

Characteristics of Synthesized Studies

Across studies, one Hispanic adolescent and adult caregiver (over 80% mothers) were recruited through the Miami-Dade County Public School System. One efficacy study additionally recruited adolescents who had been arrested or had at least one behavior

problem (e.g., burglary, trespassing, vandalism) through the Department of Juvenile Services (Prado et al., 2012b). Another trial recruited Hispanic adolescent students who were determined to have at least "mild problems" on at least one of three validated subscales that measured conduct disorder, socialized aggression and attention problems (Pantin et al., 2009). These two studies were designated as the "Risk" group. The remaining studies recruited universal samples, in which eligibility was not based on individual risk factors and were labeled as "Universal" (Estrada et al., 2017; Estrada et al., 2015; Prado et al., 2007). One of the synthesized studies in the Universal group was an effectiveness study. Effectiveness studies test programs under "real world conditions" and meet standards for efficacy studies (Flay et al., 2005). The intervention in the Familias Unidas Effectiveness Study was delivered by school personnel instead of members of the research team as in the efficacy studies. All individuals who delivered the intervention in the efficacy and effectiveness settings received the same training and supervision from the same clinical supervisor. Further, the use of school personnel was piloted in Efficacy Study 1 prior to the effectiveness study, and the school personnel had similar intervention effects to those of our research team facilitators (Prado et al., 2007). Risk' and 'Universal' groupings were used in post hoc analyses described below.

Study Control Conditions

The control conditions for all studies were either prevention-as-usual or community practice. Efficacy Study 1 consisted of two control conditions. The first control condition (PATH+ESOL) consisted of classes aimed to help parents communicate more effectively in English and HIV prevention curriculum designed to promote responsible sexual behavior by training parents to become effective HIV educators for their children. In the second control condition (HeartPower!+ESOL), participants also received the classes aimed to help parents communicate more effectively in English and a program designed by the American Heart Association designed to reduce adolescents' risk for cardiovascular disease. In Efficacy Studies 2 and 3, community control families were given three referrals to agencies in their catchment area that serve youth with behavior problems and 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, respectively. For the Effectiveness Study and Efficacy Study 4, the control conditions received an HIV risk reduction intervention provided by the local school system to students. Follow up rates across studies were 93.6% for intervention condition and 86% for control condition HASGB participants. Follow up rates were calculated from baseline to the time point for the outcome used in this study and not the final time point in the original parent study. Informed consent and adolescent assent was obtained from all individual participants included in the study. All studies were approved by the University of Miami Social and Behavioral Sciences Institutional Review Board.

Participants and Measures

We identified HASGB based on responses to questions that assessed the binary gender (men/guys, women/girls) of their sexual partners. Across time points, if a respondent indicated that they had a sexual partner of the same gender, they were labeled as HASGB. We incorporated variables that were measured at baseline and 6-, 12-, and 18-months

post-baseline. Our main effect of interest was intervention condition (Familias Unidas vs. control conditions), which was assigned at baseline. All studies had one control condition except for Efficacy Study 1, which had two (Prado et al., 2007). We collapsed these two control conditions into one (i.e., prevention as usual) for comparability to the other synthesized studies. There were 7 Efficacy Study 1 HASGB participants in each of the control conditions. Due to the small number of HASGB participants in the 2 control conditions relative to the overall HASGB sample, we assumed collapsing them would not significantly influence outcomes. A binary gender variable (i.e., men/guys and women/girls) collected at baseline was also included as a covariate.

Family Functioning—Family functioning indicators at baseline and 6-months post-baseline were also included as these were the hypothesized mediating variables of interest. We selected parent-reported family functioning indicators using validated scales that have shown to be significant mediators of intervention effects in previous Familias Unidas studies – parent-adolescent communication (Pantin et al., 2009; Prado et al., 2012b; Prado et al., 2007) positive parenting (Pantin et al., 2009; Prado et al., 2012b; Prado et al., 2007) and parental monitoring of peers (Estrada et al., 2017; Pantin et al., 2009). Consistent with the theoretical framework underpinning Familias Unidas, the Ecodevelopmental theory (Szapocznik and Coatsworth, 1999), parents are the change agents in the intervention and receive specific content and training regarding family functioning in group sessions. Their reports better represent the Ecodevelopmental theory and are consistent with mediators used in previous Familias Unidas studies. Each scale demonstrated acceptable internal consistency (Cronbach, 1951) at baseline (α_1) and 6-months (α_2): parent-adolescent communication (α_1=.79 α_2=.82), positive parenting (α_1=.92, α_2=.92) and parental monitoring of peers (α_1=.85, α_2=.87).

Risk Behavior Outcomes—Our risk behavior outcomes were condomless sex at last intercourse and past 90-day substance use. Substance use was a composite measure which included any past 90-day cigarette, alcohol or illicit drug (e.g., marijuana, cocaine, psychedelics) use. Even though multiple indicators for our outcomes were available across study batteries, we opted for these two measures due to low response on other condom use items and individual substance use indicators. Familias Unidas Efficacy Studies 1 and 3 had taken survey assessments at 12 months post-baseline whereas the remaining studies assessed participants at 18 months post-baseline. We consolidated responses to these follow-up measures into one post-intervention outcome.

Data Analysis

We tested for bivariate differences across measures in the mediation models and sociodemographic characteristics by intervention assignment (intervention vs. control) within our sample of HASGB. Our three mediation models tested for the direct effect of Familias Unidas on condom use at last sexual encounter and past 90-day substance use 12-18 months post-baseline and its indirect effect through 3 family functioning indicators – parent-adolescent communication, positive parenting and parental monitoring of peers – at 6-months post-baseline. Study participants were not randomized based on same gender sexual behavior, thus we adjusted for possible covariate imbalance at baseline. We calculated

stabilized inverse proportional treatment weights (IPTWs) and incorporated into each mediation model to account for potential confounding (Thoemmes and Ong, 2016). IPTWs used the following covariates: age; gender; family income; nativity status (US born vs. not); time in the US; variable reflecting the participant's parent study (e.g., Efficacy Study 1); study start date (continuous variable in months); baseline parent-adolescent communication; baseline positive parenting; baseline parental monitoring of peers. If an IPTW could not be calculated due to data missingness on any of the covariates, we imputed the mean IPTW from the remainder of the sample. We also added a dichotomous covariate called "time point" to indicate the assessment time point at which the outcomes were measured (i.e., 12 or 18 months post-baseline).

We tested mediation models using the WLSMV estimator in Mplus, which uses a probit link function for dichotomous outcomes. This estimation method utilizes pairwise deletion to handle missing data (Asparouhov and Muthén, 2010). In post-hoc analyses, a multigroup approach was used for each of the mediation models separating analyses by study target population ("Universal" vs. "Risk"). We used common fit indices with pre-established thresholds to determine acceptable model fit including the χ^2 test ($p > 0.05$), root mean square error of approximation (RMSEA ≤ 0.06) and the comparative fit index (CFI ≥ 0.95) (Bentler, 1990). We report fully standardized beta coefficients and 95% confidence intervals for mediation model results. All analyses were performed using M*plus* v8.1 (Muthén and Muthen, 2017).

Results

Table 2 compares HASGB in the Familias Unidas condition to those randomized to comparison conditions across sociodemographic characteristics, study target population (Universal vs. Risk), parent-reported family functioning indicators and risk behavior outcomes. HASGB Familias Unidas participants were not significantly different from HASGB in control conditions except in condom use at last sexual intercourse at 12-18 months post-baseline ($\chi^2_{1df} = 8.31$; $p = 0.004$).

Fit indices for the parent-adolescent communication and parental monitoring of peers models indicated good fit to the data; however, positive parenting model fit indices were inadequate ($\chi^2_{1df} = 8.95$, $p = 0.002$; RMSEA = 0.205, $p = 0.01$; CFI = 0.81) and results are not reported. Results for mediation analyses for parent-adolescent communication and parental monitoring of peers are shown in Table 3. We found that Familias Unidas had a direct and significant impact, increasing condom use at last sexual encounter in the parent-adolescent communication (β = −0.36; 95% Confidence Interval [−0.57, −0.14]) and parental monitoring of peers (β = −0.37; [−0.58, −0.16]) models. Intervention condition had no direct effect on past 90-day substance use in either model. Indirect effects in both models were not significant indicating no mediation.

Post hoc analyses

Post hoc multigroup analyses were conducted to explore potential differences in model effects by study target population. There were 113 HASGB in the Universal group and 77 in the Risk Group. Model fit indices for the positive parenting and parent-adolescent

communication models were subpar and results were not examined. The parental monitoring of peers model revealed that the effect of intervention condition on condomless sex at last intercourse differed substantially by study target population, though effects remained statistically significant in both subgroups. The intervention effect in the Universal group was not significant ($\beta = -0.21$; [−0.46, 0.14]); however, a significant effect was found in the Risk group ($\beta = -0.49$; [−0.75, −0.23]). Indirect effects were not significant.

Discussion

This study is the first, to our knowledge, to examine the relative efficacy/effectiveness of a general family-based intervention on risk behavior outcomes in Hispanic adolescents with same gender sexual behaviors. We found that the intervention significantly improved reported condom use at last sexual encounter. The intervention did not have a direct effect on past 90-day substance use. Our mediation analyses did not confirm our hypothesis that parent reports of family functioning would mediate the relationship between the intervention and risk behavior outcomes. Post-hoc analyses exploring differences by study target population revealed that the direct intervention effect on reported condom use at last sexual encounter was only found in studies that recruited participants based on prior risk compared to those that recruited universal samples. This may indicate that Familias Unidas may not be equally impactful for all sexual minority youth participants and other factors should be considered (i.e., externalizing behaviors).

Although the hypothesized family functioning mediators did not explain the observed effect on condom use, other components of the intervention may explain the effect. The Familias Unidas intervention addresses Hispanic cultural taboos regarding sexuality and works with parents to increase skills to foster communication about sex, including condom use (Pantin et al., 2004). It may be that general family processes were not effectively changed through the intervention but communication about safe sex practices with parents may have increased among HASGB participants and promoted condom use. It is worth noting that the intervention did not include content specific to sexual orientation or same gender sexual behaviors.

Parent rejection of sexual orientation is a particularly salient indicator of risk behaviors in sexual minorities (Bouris et al., 2010) and may explain why the intervention did not impact general family functioning processes in HASGB. HASGB minority stressors that exist within the family may need to be resolved in order to maximize improvements in general family functioning processes. Further, the success of parenting strategies on HASGB risk behaviors require that parents are even aware and at minimum tolerate their adolescent's sexual orientation (Newcomb et al., 2019), and may consequently be the mechanism by which there are improvements in family functioning indicators such as parent-adolescent communication. Thoma and Huebner (2014) studied a diverse group of sexual minority adolescents to examine the association between general family characteristics, parental awareness of child's sexual orientation and condomless anal intercourse. Those who indicated not being sure if their parent(s) were aware of their sexual orientation or only told one parent were more likely to engage in condomless anal intercourse relative to those whose parents were aware (Thoma and Huebner, 2014). Furthermore, it is possible that

cases in which the parent is aware of their child's sexuality, some parents have reported feeling more disconnected from their child immediately after becoming aware (Saltzburg, 2007). Huebner et al. (2019) found that the degree of difficulty in handling the news of a child's sexual orientation was greater for Hispanic parents relative to non-Hispanic parents. This could disrupt effective intervention on improvement of family functioning processes, particularly in HASGB.

Limitations and Strengths

There are a number of limitations and strengths of this study. Even though we were able to identify 194 HASGB for analysis by synthesizing across five trials, confidence intervals were wide across a number of parameter estimates indicating low power to detect effects. Causal mediation models for clinical trials not only require that participants be randomized to condition, but also assumes randomization on or post-hoc equilibration on the mediating variable (MacKinnon, 2008). This means that parameters estimating the direct and indirect effect of family functioning on our outcomes may be subject to confounding and should be interpreted with caution. We were able to adjust for covariate imbalance at baseline using IPTWs but there is still potential for unmeasured confounding.

We also note the limitations in how gender identities and sexualities were conflated in our analyses. Gender identity options did not extend beyond the binary men and women designations and surveys did not assess for sex assigned at birth separately from gender identity. Thus, we were not able to identify transgender, non-binary or other gender expansive identities for the participants or their sexual partners (i.e., same-gender partners). HASGB participants who exhibited bisexual behaviors were also grouped with HASGB who reported exclusively same gender behaviors. As a result, it is unclear whether the sexual partner at last intercourse captured in the analysis was of the same or opposite gender. The item assessing for condom use at last intercourse did not specifically define the type of intercourse and may have not accounted for safe sex practices for HASGB girls engaging in same gender sexual behaviors. Conflating diverse sexual orientation and gender identities does not allow us to understand the unique needs of each of these groups and potential differences in intervention effects.

Indicators measuring other dimensions of sexual orientation (identity and attraction) or parental awareness of and reaction to child's sexuality were not available in the trial survey batteries. It is possible that our results may have been considerably different if our sexual minority classification was based on measures of attraction or identity. Other measures of sexual orientation (e.g., attraction) have shown differential associations with these risk behaviors in other studies (Everett et al., 2014; Kann et al., 2011); however, it is important to note that sexual behavior is a stronger predictor of risk behavior than attraction and identity measures (Brewster and Tillman, 2012). Finally, our results may have also differed had we simultaneously integrated survey responses from parents and adolescents in mediation models, such as through using a latent difference score approach to account for responses from both informants (de Haan et al., 2017).

This study does have a number of notable strengths. Intervention trials are typically powered to detect main effects for the overall study sample, thus precluding the ability to examine

potentially unique population subgroups. By combining data across multiple studies, we were able to estimate the effect of a general family-based preventive intervention on its sexual minority participants. Moreover, our sample comprised a diverse group of HASGB representing various Latin American countries, age ranges and gender.

Conclusions

Results from this study provide some preliminary evidence indicating the potential positive impact of a non-sexual orientation specific family-based preventive intervention on condom use in its sexual minority participants. Exploratory analyses revealed that this effect was only found in HASGB with prior risk suggesting that a general prevention intervention may not be efficacious for universal HASGB samples. In our study, HASGB with prior risk were those youth who had at least one behavior problem (i.e., conduct disorder, socialized aggression or attention problems) or were delinquent youth who had been arrested or had at least one behavior problem (e.g., burglary, trespassing, vandalism). Interventions with selective and indicated samples can exhibit stronger effects relative to those with universal samples particularly when measured immediately post-intervention (Horowitz and Garber, 2006; Stockings et al., 2016). A larger proportion of HASGB from the selective and indicated studies may have been sexually active within the time frame used in analysis and therefore have detectable intervention effects on condom use. Results may have also differed had our analyses examined outcomes at longer follow up time points. Furthermore, the hypothesized mechanism of action was not family functioning, which previous studies have shown to partially explain changes in risk behavior outcomes in intervention participants (Estrada et al., 2015; Prado et al., 2012a; Prado et al., 2012b; Prado and Pantin, 2011). This does underscore the need to collect and analyze sexual minority data in adolescent preventive interventions.

We recommend that future research include additional measures that can further contextualize the diversity and nuance across identities and experiences. Surveys should be thoughtfully designed to capture: sexual orientation domains (same gender attractions, behaviors and sexual identity); transgender, non-binary and other gender expansive identities; safe sex practices of various sexual experiences (e.g., condom use for partners who both have vaginas and use sex toys); family characteristics (warmth, support); and parental awareness of child's sexuality. There is a need to build from the existing literature and adapt and enhance existing evidence-based, family interventions for sexual minority adolescents, and specifically for those who have recently disclosed their sexual orientation to their parent in order to have larger effects for HASGB on risky behaviors. Alternatively, existing general family-based interventions could integrate content applicable to all adolescents that could also benefit sexual minority participants. For example, parents could be educated on sexual identity development as a universal process (Dillon et al., 2011). This content could emphasize commonalities of this process among youth and negative psychological ramifications and adverse risk behaviors associated with unsupported sexual identity development (Rosario et al., 2011). Normalizing this process could theoretically lead to more understanding and support from parents of sexual minority participants in such an intervention. Perrino et al. (2015) emphasize the paucity of preventive interventions targeting vulnerable adolescent population subgroups, including sexual minorities, and our

lack of evidence indicating how existing interventions impact these populations. This paper begins to fill this gap and provides promising, albeit preliminary, evidence of the potential efficacy of an evidence-based, parent-centered preventive intervention on condom use in its sexual minority participants.

Funding:

This study was funded by: National Institute on Drug Abuse (Grant Numbers F31DA040562, R01DA025192, R01DA025894, R01DA017462); Centers for Disease Control and Prevention (Grant Number U01PS0000671); National Institute of Mental Health (Grant Number R01MH63042).

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Table 1

Summary of characteristics for synthesized Familias Unidas studies.

Familias Unidas Study	Study Period	Target Population	Assessments (months)							HASGB Sample Characteristics				
											Study Membership		Intervention Condition[c]	
			0	6	12	18	24	30	36	n	% HASGB Within Study[b]	% of Overall HASGB Sample	Familias Unidas HASGB (%)	Control HASGB (%)
Efficacy Study 1	2000-2005	Universal	✓	✓	✓		✓		✓	29	11%	14.9%	48.3%	51.7%
Efficacy Study 2	2004-2008	Selective	✓	✓		✓		✓		37	16.3%	19%	55.6%	44.4%
Efficacy Study 3	2009-2010	Indicated	✓	✓	✓					43	18.2%	22%	44.2%	55.8%
Effectiveness Study	2010-2014	Universal	✓	✓		✓		✓		65	8.7%	33.3%	55.4%	44.6%
Efficacy Study 4	2011-2013	Universal	✓	✓		✓		✓		21	13.1%	10.8%	52.4%	47.6%

[b] $\chi^2(4) = 20.86$, $p < .001$

[c] $\chi^2(4) = 1.678$, $p = .798$

Table 2

Comparison of sociodemographic characteristics, family functioning indicators and risk behaviors.

	Familias Unidas			Control		
	n	**mean (SD)**		**n**	**mean (SD)**	**p-value***
Age	94	14.32 (1.29)		100	14.16 (1.12)	0.355
Family Functioning (at baseline)						
Parent Adolescent Communication	94	67.19 (10.97)		100	67.54 (10.62)	0.821
Positive Parenting	93	14.13 (3.59)		98	14.08 (3.13)	0.923
Parental Monitoring of Peers	94	10.13 (4.87)		97	10.36 (4.47)	0.730
Family Functioning (at 6 months)						
Parent Adolescent Communication	89	69.15 (10.22)		96	66.92 (10.48)	0.143
Positive Parenting	89	14.63 (3.20)		96	14.21 (3.21)	0.373
Parental Monitoring of Peers	89	11.54 (4.53)		96	11.11 (4.91)	0.543
	n	**%**		**n**	**%**	**p-value****
Study Membership						0.615
Universal Studies	54	57.4%		61	61.0%	
Indicated/Selective Studies	40	42.6%		39	39.0%	
Sociodemographic Characteristics						
Gender						0.476
Men	71	75.5%		71	71.0%	
Women	23	24.5%		29	29.0%	
Nativity Status						0.594
US Born	31	39.7%		36	43.9%	
Foreign Born	47	60.3%		46	56.1%	
Family Income						0.61
<$25,000	70	76.9%		76	80.0%	
$25,000+	21	23.1%		19	20.0%	
Time in US						0.354
<3 yrs	22	23.4%		29	29.3%	
3 yrs+	72	76.6%		70	70.7%	
Risk Behavior (at baseline)						
Past 90-Day Substance Use						0.198
No	53	63.1%		65	72.2%	
Yes	31	36.9%		25	27.8%	
Condom Use at Last Intercourse						0.548
No	16	38.1%		20	44.4%	
Yes	26	61.9%		25	55.6%	
Risk Behavior (combined 12 and 18 months post-baseline)						
Past 90-Day Substance Use						0.294

	Familias Unidas			Control		
	n	**mean (SD)**		**n**	**mean (SD)**	**p-value***
No	44	57.9%		49	66.2%	
Yes	32	42.1%		25	33.8%	
Condom Use at Last Intercourse						0.004
No	14	26.9%		27	55.1%	
Yes	38	73.1%		22	44.9%	

Note. Totals vary across variables due to item non-response or loss to follow-up.

*p-values derived from independent samples t-tests.

**p-values from Pearson chi-square analysis.

Table 3

Decomposition for effects of intervention condition on past 90-day substance use and condomless sex at last sexual encounter 12-18 months post-baseline through family functioning indicators at 6 months.

	Mediator: Parent-Adolescent Communication			**Mediator: Parental Monitoring of Peers**		
	***n* = 190**			***n* = 190**		
	β	**95% CI**	***p* value**	**β**	**95% CI**	***p* value**
Family Functioning Indicator at 6 months						
Intervention Condition	0.133	[−0.01, 0.28]	0.75	0.057	[−0.09, 0.20]	0.44
Condomless Sex at Last Intercourse						
Family Functioning Indicator at 6 Months	−0.079	[−0.26,0.10]	0.38	0.036	[−0.19, 0.26]	0.76
Intervention Condition	−0.357	[−0.57, −0.14]	0.001	−0.369	[−0.58, −0.16]	0.001
Time Point[a]	0.069	[−0.18, 0.32]	0.58			
Past 90 Day Substance Use						
Family Functioning Indicator at 6 Months	−0.35	[−0.54, −0.16]	0.001	−0.104	[−0.31, 0.10]	0.32
Intervention Condition	0.118	[−0.08, 0.32]	0.25	0.077	[−0.13, 0.28]	0.46
Time Point[a]	−0.3	[−0.49, −0.11]	0.002	−0.303	[−0.49, −0.11]	0.002
Condomless Sex with Substance Use	0.609	[0.34, 0.88]	<0.001	0.604	[0.35, 0.86]	<0.001
Mediation Effect Through 6 Month Family Functioning Indicator						
Effects from Intervention Condition to Condomless Sex at Last Intercourse						
Total Effect	−0.367	[−0.58, −0.16]	0.001	−0.367	[−0.58, −0.16]	0.001
Indirect Effect through Family Functioning Indicator	−0.01	[−0.04, 0.02]	0.44	0.002	[−0.01, 0.02]	0.77
Effects from Intervention Condition to Past 90 Day Substance Use						
Total Effect	0.071	[−0.13, 0.27]	0.49	0.07	[−0.13, 0.27]	0.49
Indirect Effect through Family Functioning Indicator	−0.046	[−0.08, 0.32]	0.12	−0.006	[−0.03, 0.01]	0.55

Note: Fit indices for each mediation model. $\chi 2(1) = 2.158$, p = 0.14 for Parent Adolescent Communication; $\chi 2(1) = 0.769$, p = 0.38 for Parental Monitoring of Peers. RMSEA = 0.078, p = 0.23, 90% CI = [0.000, 0.226] for Parent Adolescent Communication; RMSEA = 0, p = 0.48, 90% CI = [0.000, 0.183] for Parental Monitoring of Peers. CFI = 0.975 for Parent Adolescent Communication; CFI = 1.0 for Parental Monitoring of Peers.

[a]Time point is a binary variable coded to represent whether a given study assessed risk behavior outcomes 12 or 18 months post-baseline.