

SAMPLING OF SCIENTIFIC STUDIES OF THE “keepin’ it REAL” PROGRAM (Incomplete List)

Hecht, M. L., Marsiglia, F. F., Elek-Fisk, E., Wagstaff, D. A, Kulis, S., Dustman, P., & Miller-Day, M. (2003). Culturally-grounded substance use prevention: An evaluation of the keepin’ it R.E.A.L. curriculum. *Prevention Science*, 4, 233-248.

This paper reports on the randomized controlled trial evaluation of a culturally grounded prevention intervention targeting substance use among urban middle-school students. The curriculum consists of 10 lessons promoting antidrug norms and teaching resistance and other social skills, reinforced by booster activities and a media campaign. Three versions were delivered: Mexican American, combined African American and European American, and Multicultural. Thirty-five middle schools were randomly assigned to 1 of the 3 versions or the control. Students completed baseline and follow-up questionnaires over a 2-year period (total 6,035 respondents). Analyses utilizing a generalized estimating equations approach assessed the overall effectiveness of cultural grounding and the cultural matching hypothesis. Support was found for the intervention’s overall effectiveness, with statistically significant effects on gateway drug use as well as norms, attitudes, and resistance strategies but with little support for the cultural matching hypothesis. Specific contrasts found the Mexican American and Multicultural versions impacted the most outcomes.

On the basis of analyses, the intervention provided promising results with substantial and significant effects on personal and descriptive norms, expectations of substance use, use of resistance strategies, and use of the gateway drugs: alcohol, cigarettes, and marijuana. (p. 244)

In some instances, the curriculum helped students maintain pre-existing, anti-alcohol, tobacco, and other drug (ATOD) attitudes and norms; at a minimum, it restricted their transition to greater levels of substance use and toward more prodrug attitudes and norms. (p. 244)

Multicultural curricula such as the one proving effective in this study include cultural elements from a variety of cultures and this allows most students to perceive elements of their own culture in the program. (p. 245)

Gosin, M. (2003). *Keepin’ it REAL: A drug resistance curriculum tailored to the strengths and needs of pre-adolescents of the Southwest. Journal of Drug Education.*

...cultural grounding through the infusion of cultural elements and values appears to result in effective drug prevention. In an integrated school system where Mexican American make up the numerical majority of students, the evaluation found that a curriculum tailored to Mexican American culture (Mexican American version) or reflective of Mexican American culture (Multicultural version) reduced use and beneficially impacted a number of other substance use related psychosocial variables(p.133)

Marsiglia, F. F., Kulis, S., Hecht, M. L., & Sills, S. (2004). Ethnicity and ethnic identity as predictors of drug norms and drug use among preadolescents in the US Southwest. *Substance use & misuse*, 39(7), 1061-1094.

A randomized controlled study of 45 secular public middle schools within a Southwest U.S. city were recruited for the study, and 35 schools from nine different school districts agreed to participate. Within these schools, every seventh grader was selected as a participant in the study (N=4364 students). The results support the idea that ethnicity and ethnic identity are factors in youth drug use rates and drug use norms in the Southwest, as has been found in research conducted in other regions. However, the hypothesized “protective effects” of ethnicity and ethnic identity against drug use were confirmed for some groups of students but not for others.

These results partially confirm previous findings about the drug use norms and behaviors of Mexican American and other preadolescents residing in a large urban center of the Southwest and magnet for Mexican and other Latino immigration. In large measure, the results regarding school achievement and drug use are consistent with the findings of other research studies conducted with this age group. Older students, boys, and lower achievers use more drugs. Students reporting lower drug use rates and identifying more strongly with antidrug use norms tend to be younger, female, and have higher grades. In this sample, the students who are at less risk also tend to identify solely as non-Hispanic Whites and belong to families with lower SES.

The ethnic self-label findings presented in this article differ somewhat from the findings of our previous research, where ethnic pride was identified as a “protective factor” for ethnic minority students (Marsiglia and Waller, 2002, Marsiglia et al., 2001). The overwhelming representation of Mexican Americans in the current sample and the larger sample size of the current study provides additional insights about within-group differences. Students self-labeling as Mexican Americans solely and as multiethnic Mexican Americans reported a lifetime higher drug use than those self-labeling only as non-Hispanic White. American Indian students reported more use of cigarettes and marijuana, but less use of alcohol, whereas African American students reported more use of marijuana than White students. Although a stronger sense of ethnic identity predicted lower drug use and stronger antidrug norms overall, these effects were stronger for non-Hispanic Whites than for Mexican American and American Indian students.

Hecht, M.L., Graham, J.W. & Elek, E. (2006). The Drug Resistance Strategies Intervention: Program Effects on Substance Use. *Health Communication*, 20, 267-276. PMID17137418

This study reports on the randomized control trial of the *keepin' it REAL* DRS [Drug Resistance Strategies] project curriculum. Findings indicate the program successfully limits increases in alcohol and marijuana use. (p. 275)

This study focused on the use of novel statistical models. As such, one of the primary measures of this study was the overall effectiveness of the project over time and did not “tease out” any one particular component (e.g., decision making skills, relationship skills, etc.) contributing to its efficacy.

The results of this study support the conclusion that the DRS [Drug Resistance Strategies] intervention slows the naturally occurring developmental increase in students' reported substance use. (p. 274)

Overall, the multicultural version (targeting both Mexican American and non-Mexican American youth) appeared to be the most broadly effective, having impacts on both alcohol and marijuana; the version that targets Mexican American youth appears to be [effective] with alcohol use. (p. 275).

Elek, E., Graham, J.W., Hecht, M.L. (2006). The drug resistance strategies intervention: Program effects on substance use. *Health Communication*. 20(3). 267-276.

This study reports on a randomized controlled trial evaluation of the keepin' it REAL program, a culturally grounded, communication-based, substance use prevention program implemented in 35 middle schools in Phoenix, Arizona. The intervention consisted of 10 lessons taught by the classroom teacher that imparted the knowledge, motivation, and skills needed to resist drug offers. The evaluation used growth modeling to analyze significant differences in average post intervention substance use (alcohol, cigarettes, and marijuana) and growth of use over the course of the study. The study involved 6,298 seventh graders (65% Mexican/Mexican American) who responded to at least 1 of 4 questionnaires (1 pretest and 3 follow-up measures). When compared to a control group, the DRS intervention appeared to significantly limit the increase in the number of students reporting recent substance use, especially alcohol and marijuana use. The multicultural version of the curriculum proved most broadly effective, followed by the version targeting Mexican American youth. The development of a culturally grounded prevention curriculum for Mexican American youth expands the population being served by interventions. Moreover, the success of the multicultural curriculum version, which has the broadest application, provides particular promise, and the article demonstrates how a growth modeling approach can be used to evaluate a communication-based intervention by analyzing changes over time rather than differences between the pretest and posttest scores.

Kulis, S., Marsiglia, F.F., Nieri, T., Stromwall, L.K., Yabiku, S. (2006). Promoting reduced and discontinued substance use among adolescent substance users: Effectiveness of a universal prevention program. *Prevention Science*. 49. 36-47.

Efforts to address youth substance use have focused on prevention among non-users and treatment among severe users with less attention given to youth occupying the middle ground who have used substances but not yet progressed to serious abuse or addiction. Using a sample from 35 middle schools of 1,364 youth who reported using substances, this study examined the effectiveness of a universal youth substance use prevention program, the SAMHSA Model Program *keepin' it REAL*, in promoting reduced or recently discontinued alcohol, cigarette and marijuana use. Discrete-time event history methods modeled the rates of reduced and recently discontinued use across four waves of data. Each substance (alcohol, cigarettes, and marijuana) was modeled separately. Beginning at the second wave, participants who reported use at wave 1 were considered at risk of reducing or discontinuing use. Since the data sampled students in

schools, multi-level models accounted for the nesting of data at the school level. Results indicated that prevention program participation influenced the rates of reduced and recently discontinued use only for alcohol, controlling for baseline use severity, age, grades, socioeconomic status, ethnicity and gender. Among youth who reported use of alcohol in wave 1 ($N = 1,028$), the rate of reducing use for program participants was 72% higher than the rate for control students. The rate of discontinuing use was 66% higher than the rate for control students. Among youth who reported use of one of more of the three substances in wave 1 ($N = 1,364$), the rate of discontinuing all use was 61% higher for program participants than for control students. Limitation and implications of these findings and plans for further research are discussed.

Warren, J. R., Hecht, M. L., Wagstaff, D. A., Elek, E., Ndiaye, K., Dustman, P., & Marsiglia, F. F. (2006). Communicating prevention: The effects of the keepin' it REAL classroom videotapes and televised PSAs on middle-school students' substance use. *Journal of Applied Communication Research*, 34(2), 209-227.

This study sought to determine if exposure to keepin' it REAL program videotapes account for changes in substance use among adolescents participating in the Drug Resistance Strategies Project's keepin' it REAL adolescent substance use prevention curriculum. Middle-school students (4,734, 72% Latino) responded to questionnaires related to these analyses. An analysis of covariance (ANCOVA) model was fit separately to six substance use outcomes. The results suggested that intervention students who saw four or five videos engaged in less substance use in the past month than did students who saw fewer videos. Having seen the PSAs one or more times did not predict the reported change in substance use.

Kulis, S., Nieri, T., Yabiku, S., Stromwall, L.K., & Marsiglia, F.F. (2007). Promoting reduced and discontinued substance use among adolescent substance users: Effectiveness of a universal prevention program. *Prevention Science*, 37, 123-144.

Using a sample from 35 middle schools of 1,364 youth who reported using substances, this study examined the effectiveness of a universal youth substance use prevention program, the SAMHSA Model Program keepin' it REAL, in promoting reduced or recently discontinued alcohol, cigarette, and marijuana use. Discrete-time event history methods modeled the rates of reduced and recently discontinued use across four waves of data. Each substance (alcohol, cigarettes, and marijuana) was modeled separately. Beginning at the second wave, participants who reported use at wave 1 were considered at risk of reducing or discontinuing use. Since the data sampled students in schools, multi-level models accounted for the nesting of data at the school level. Results indicated that prevention program participation influenced the rates of reduced and recently discontinued use only for alcohol, controlling for baseline use severity, age, grades, socioeconomic status, ethnicity and gender. Among youth who reported use of alcohol in wave 1 ($N = 1,028$), the rate of reducing use for program participants was 72% higher than the rate for control students. The rate of discontinuing use was 66% higher than the rate for control students. Among youth who reported use of one or more of the three substances in wave 1 ($N = 1,364$), the rate of discontinuing all use was 61% higher for program participants than for control students.

Crossman, A., Kulis, S., Marsiglia, F.F., Nieri, T., Yabiku, S.T. (2007). Differences by

gender, ethnicity, and acculturation in the efficacy of the *keepin' it REAL* model prevention program.

This study examined whether the efficacy of *keepin' it REAL*, a model program for substance use prevention in schools, was moderated by gender, ethnicity, and acculturation. Gender differences in program efficacy may arise through boys' higher risk of drug use, inadequate attention to girls' developmental issues, or cultural factors like polarized gender expectations. Data came from a randomized trial in 35 Phoenix, Arizona, middle schools involving 4,622 mostly Latino 7th graders. Using multi-level mixed models and multiple imputation missing techniques, results for the total sample showed no gender differences in program effects on recent substance use, but the program was more effective in fostering boys' than girls' anti-drug norms. Subgroup analyses demonstrated several more beneficial program effects for boys than girls (less alcohol and cigarette use and stronger anti-drug norms), but only among less acculturated Latinos. There were no gender differences in program effects among more acculturated Latinos, nor among non-Latino whites.

Hecht, M. L., Warren, J. R., Wagstaff, D. A., & Elek, E. (2008). Substance use, resistance skills, decision making, and refusal efficacy among Mexican and Mexican American preadolescents. *Health communication*, 23(4), 349-357.

When we compared the means for boys and girls for our four explanatory variables [resistance skills, refusal self-efficacy, passive decision-making, active decision-making], we found that the male students reported less willingness to use a resistance strategy to avoid a hypothetical alcohol use offer, less confidence in their ability to refuse a drug offer, a greater willingness to let events or someone else make the decision, and less willingness to step in and make the decision actively (Table 3). (p. 355)

Multiple-logistic regression analyses demonstrated that the likelihood of lifetime use among the entire sample of preadolescents was related to resistance skills, refusal strategy, and willingness to use both active and passive decision-making styles. However, when the same logistic-regression model was fit to the data reported by each gender separately, different patterns for girls and boys. Among our preadolescent girls, lifetime use was not associated with the students' resistance skills, refusal efficacy, or the extent to which they were willing to engage in active or passive decision making. For boys, lifetime use was associated with the student's refusal efficacy and willingness to engage in both active and passive decision making. (p. 355)

Our data show that confidence in one's ability to make decisions reduces the likelihood of lifetime substance use, whereas passive and less systematic decision making increases the likelihood of use for Mexican and Mexican American preadolescents. (p. 355)

The likelihood that students reported ever having used one or more of the four substances increased as students reported a greater willingness to let events or someone else make decision (passive decision making); it decreased as students reported a greater willingness to step in and make the decision themselves (active decision making). (p. 354)

Our findings demonstrate that, in general, the associations found previously between skills and substance use for mainstream groups apply equally well to this ethnic group [Mexican and Mexican American preadolescents]. (p. 355)

Marsiglia, F. F., Kulis, S., Yabiku, S. T., Nieri, T. A., & Coleman, E. (2011). When to intervene: Elementary school, middle school or both? Effects of keepin' it REAL on substance use trajectories of Mexican heritage youth. *Prevention Science, 12*(1), 48-62.

This article presents the findings of a study exploring two questions: What age is most efficacious to expose Mexican heritage youth to drug abuse prevention interventions, and what dosage of the prevention intervention is needed? These issues are relevant to Mexican heritage youth—many from immigrant families—in particular ways due to the acculturation process and other contextual factors. The study utilized growth curve modeling to investigate the trajectory of recent substance use (alcohol, cigarettes, marijuana, inhalants) among Mexican heritage students (N = 1,670) participating in the keepin' it REAL drug prevention program at different developmental periods: the elementary school (5th grade), middle school (7th grade), or both. The findings provide no evidence that intervening only in elementary school was effective in altering substance use trajectories from 5th to 8th grade, either for licit nor illicit substances. Implementing keepin' it REAL in middle school alone altered the trajectories of use of all four substances for Mexican heritage youth. A double dose of prevention, in elementary and middle school proved to be equally as effective as intervening in 7th grade only, and only for marijuana and inhalants. The decrease in use of marijuana and inhalants among students in the 7th-grade-only or the 5th- and 7th-grade interventions occurred just after students received the curriculum intervention in 7th grade. These results are interpreted from an ecodevelopmental and culturally specific perspective and recommendations for prevention and future research are discussed.

Kam, J. A., & Cleveland, M. J. (2011). Perceived discrimination as a risk factor for Latina/o youth's substance use: do parent-and peer-based communication and relationship resources act as protective factors? *Health communication, 26*(2), 111-124.

Latina/o youth in this study developed more acculturation stress as they experienced perceived discrimination and as a result were more likely to use substances. (p. 120)
In this study, none of the parent or peer factors significantly interacted with acculturation stress to predict substance use...This finding is curious in light of previous research. (p. 120-121)

As Latina/o youth perceived a friend would react negatively if they used substances, then they were less likely to use [alcohol, tobacco, and other drugs] ATOD. Similarly, these youth were less likely to use ATOD as their perceived fewer peers at school used substances. (p. 120)
The results did not provide support for parent and peer communication, relationship, and norm resources as significant moderators; however, parent-child closeness, friend anti-ATOD injunctive norms, and anti-ATOD descriptive norms exhibited main effects on ATOD use in their expected directions. (p. 120)

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...this study tests a theoretically derived mediation model of perceived discrimination's indirect effects on [alcohol, tobacco, and other drug] ATOD use through acculturation stress. Further, this

study examines the potential for parent and peer communication, relationship, and norm resources to attenuate acculturation stress's effect on ATOD use. (p. 112)

Marsiglia, F. F., Ayers, S., Gance-Cleveland, B., Mettler, K., & Booth, J. (2012). Beyond primary prevention of alcohol use: A culturally specific secondary prevention program for Mexican heritage adolescents. *Prevention Science*, 13(3), 241-251.

Classroom-based primary prevention programs with adolescents are effective in inhibiting the onset of drug use, but these programs are not designed to directly address the unique needs of adolescents at higher risk of use or already using alcohol and other drugs. This article describes the initial efficacy evaluation of a companion psychosocial small group program which aims at addressing the needs of Mexican heritage students identified by their teachers as being at higher risk for substance use or already experimenting with alcohol and other drugs. The adolescent (7th grade) small group curricula, REAL Groups, is a secondary prevention program which supplements the primary classroom-based substance use prevention program, keepin' it REAL. Following a mutual aid approach, a total of 109 7th grade students were referred by their teachers and participated in the REAL Groups. The remaining 252 7th grade students who did not participate served as the control group. To account for biased selection into REAL Groups, propensity score matching (PSM) was employed. The estimated average treatment effect for participants' use of alcohol was calculated at the end of the 8th grade. Results indicate that alcohol use decreased among students who participated in the REAL Groups relative to matched students who did not participate. These findings suggest that REAL Groups may be an effective secondary prevention program for higher-risk Mexican heritage adolescents.

Choi, H. J., Krieger, J. L., & Hecht, M. L. (2013). Reconceptualizing efficacy in substance use prevention research: refusal response efficacy and drug resistance self-efficacy in adolescent substance use. *Health communication*, 28(1), 40-52.

In the current study, the REAL (refuse, explain, avoid, and leave) refusal strategies are used across substances, age cohorts, and cultural groups, it is not surprising that respondents find them efficacious across substances in this study. (p. 48)

Findings also show that refusal response efficacy (RE) moderates the relationship between alcohol self-efficacy (ASE) and alcohol use and marijuana self-efficacy (MSE) and marijuana use, respectively. However the role of refusal RE as a moderator differs for each substance. For alcohol use, as predicted, the relationship between ASE and alcohol use was negative and refusal RE efficacy weakened the strength of this relationship. (p. 48)

On the other hand, compared with alcohol use, refusal RE plays a more complex role for marijuana use. For youth with high refusal RE, the relationship between MSE and marijuana use was positive, but for youth with low refusal RE the relationship was negative...Possibly, adolescents with high refusal RE perceive that they could refuse marijuana offers if they wanted to, yet this small subpopulation was generally disinclined to want to refuse. (p. 48)

Based on the current findings, it appears that interventions should target a variety of drug-specific SEs. Even though individuals might develop alcohol-resistance SE, this may only be helpful in refusing alcohol offers but not marijuana offers. (p. 49)

The inclusion of refusal RE in drug-prevention program curriculum may enable youth to be more capable of resisting drug offers and decreasing substance use. Individuals seem to employ similar evidence-based strategies (REAL) in refusing various substances, and their confidence in these strategies effectiveness is related to decreased use. This individuals not only must be trained how to use the REAL strategies when receiving both alcohol and marijuana offers but also must be convinced by the prevention intervention that this strategy works equally well for both or even either substance. (p. 49)

Hopfer, S., Hecht, M. L., Lanza, S. T., Tan, X., & Xu, S. (2013). Preadolescent drug use resistance skill profiles, substance use, and substance use prevention. *The journal of primary prevention, 34(6), 395-404.*

Possessing the seven characteristics simultaneously as represented in the highly competent skill profile was associated with reduced future (8th grade) substance use in his study sample. These findings are consistent with the literature that suggests that the ability to generate multiple responses (also referred to as divergent responding) may be more important than the ability to respond consistently with one skill in assertively prosocial ways (Wright et al., 2004). (p. 7)

...study findings suggest that teaching skilled social interactions as early as preadolescence can bring beneficial effects in regards to reduced future substance use. (p. 7)

In this study, latent class analysis indicates that LEAVE and AVOID strategies appear to account for more of the observed effects in defining skill profiles than do REFUSE and EXPLAIN. (p. 7) (Due to ethnicity? Age? Other unknown factor?)

Latent transition analysis revealed that students' skills and refusal confidence increased over time as expected, and that membership into the highly competent group increased to a larger degree in treatment than control schools...differences between treatment and control schools were not statistically significant. (p. 7)

...this study is the first to define preadolescents' resistance skills through the use of latent class analysis. By using a latent class approach we were able to characterize the different stages of learning resistance skills and refusal confidence. (p. 7)

Perhaps a more developmentally appropriate strategy would be guided by socio-emotional learning (SEL) theory... (p. 7)

Pettigrew, J., Graham, J. W., Miller-Day, M., Hecht, M. L., Krieger, J. L., & Shin, Y. J. (2015). Adherence and delivery: Implementation quality and program outcomes for the seventh-grade keepin'it REAL program. *Prevention Science, 16(1), 90-99.*

Poor implementation quality (IQ) is known to reduce program effects making it important to consider IQ for evaluation and dissemination of prevention programs. However, less is known about the ways specific implementation variables relate to outcomes. In this study, two versions of keepin' it REAL, a seventh-grade drug prevention intervention, were implemented in 78

classrooms in 25 schools in rural districts in Pennsylvania and Ohio. IQ was measured through observational coding of 276 videos. IQ variables included adherence to the curriculum, teacher engagement (attentiveness, enthusiasm, seriousness, clarity, positivity), student engagement (attention, participation), and a global rating of teacher delivery quality. Factor analysis showed that teacher engagement, student engagement, and delivery quality formed one factor, which was labeled delivery. A second factor was adherence to the curriculum. Self-report student surveys measured substance use, norms (beliefs about prevalence and acceptability of use), and efficacy (beliefs about one's ability to refuse substance offers) at two waves (pretest, immediate posttest). Mixed model regression analysis which accounted for missing data and controlled for pretest levels examined implementation quality's effects on individual level outcomes, statistically controlling for cluster level effects. Results show that when implemented well, students show positive outcomes compared to students receiving a poorly implemented program. Delivery significantly influenced substance use and norms, but not efficacy. Adherence marginally significantly predicted use and significantly predicted norms, but not efficacy. Findings underscore the importance of comprehensively measuring and accounting for IQ, particularly delivery, when evaluating prevention interventions.

Kam, J.A. (2009). Extending the theory of planned behavior to predict alcohol, tobacco and marijuana use among youth of Mexican heritage. *Prevention Science*.

...past research suggests that descriptive, injunctive, and personal norms are distinct and all are likely to be relevant to substance use decision among a variety of groups, including Mexican-heritage youth. (p. 43)

This study found support for including descriptive and personal norms and separating subjective norms into peer and parental injunctive norms. (p. 48)

...the results showed that positive [alcohol, tobacco, and other drug] ATOD attitudes, personal norms, and perceived behavioral control mediated the effects of parental injunctive and peer injunctive norms. Nevertheless, it was noted that there were three discrepancies from this study's hypothesis. The first discrepancy was the finding of only a partial mediation for the effects of descriptive norms on ATOD-use intentions. A second discrepancy stemming from the hypothesis was the finding that descriptive norms and peer injunctive norms did not have significant effects on perceived behavioral control. Third, peer injunctive norms did not have a significant effect on positive attitudes toward ATOD use, while parental injunctive and descriptive norms both had significant effects on attitudes. (p. 43)

The current study...proposes an extension of the [Theory of Planned Behavior] TPB based on norm focus theory (NFT) and examines whether within-group differences exist based on Mexican-heritage youths' country of origin. (p. 42)

This study's findings have important implications for the design and evaluation of health interventions among Mexican heritage youth. By pinpointing the differentiating impact of

particular norms among this group, the second hypothesis enhances the ability to target relevant health message through formative research specifying each of the normative components. (p. 49) This study's findings also suggest that prevention researchers should consider the cultural and ethnic distinctions of ATOD-use predictors to construct culturally sensitive and effective program (Hecht and Krieger 2006; Resnicow et al. 2000). (p. 50)

Kam, J.A. (2010). Applying general strain theory to examine perceived discrimination's indirect relation to Mexican-Heritage youth's alcohol, cigarette and marijuana use. *Prevention Science*.

Longitudinal data provided by 1,106 Mexican-heritage youth from 5th through 8th grades from 29 Phoenix, AZ public schools; students' average age was 10.4 years ($SD = .61$) at Wave 1. Schools were assigned to either experimental (presumably for the *keepin' it REAL* program) or control conditions.

Although initial levels of perceived discrimination were significantly associated with initial levels of acculturation stress (accounting for program effects, sex, religiosity, and the multilevel-structured data), initial levels of acculturation stress were not significantly associated with initial levels of [alcohol, tobacco, and other drug] ATOD use...Across waves, however, their mean levels of ATOD use increased, which led to a significant association between the slopes of acculturation stress and ATOD use. (p. 406)

Increases in perceived discrimination exhibited an indirect relation to increases in ATOD use through increases in acculturation stress. (p. 406)

Initial levels of perceived discrimination were indirectly related to changes in ATOD use through changes in acculturation stress. (p. 406)

This study revealed that perceived discrimination and acculturation stress place Mexican-heritage youth at risk for ATOD. (p. 406)

General Strain Theory (GST; Agnew 2001) was used as a framework to investigate perceived discrimination's indirect relation to substance use behaviors. (p. 398)

Although evaluation of the prevention program was beyond this study's objective, significant program effects were not found in the current study. (p. 402)

...a culturally adapted prevention intervention that addresses perceived discrimination, acculturation stress, and ATOD use would likely benefit Mexican-heritage youth, given the relevancy of such topics among this particular group. (p. 406)

Kam, J.A. (2011). The effects of language brokering frequency and feeling on Mexican-heritage youths mental health and risky behaviors. *Journal of Communication*.

This study's results extended the stress assumption by revealing that both brokering frequency and negative brokering feelings exhibited indirect effects on alcohol use and other risky behaviors through family-based acculturation stress. Interestingly, other based acculturation stress was not

a significant mediator. Family-based acculturation stress played a larger role and a more harmful role in the context of language brokering. (p. 468)

At the same time, however, inspection of the direct effects revealed that higher levels of brokering frequency were associated with lower levels of other risky behaviors [not alcohol use, cigarette use, or marijuana use]. (p. 469)

...negative brokering feelings were not only directly related to both acculturation stresses but they also were indirectly related to alcohol use and other risky behaviors. (p. 570)

The parentification and stress assumptions reveal the potential for language brokering to exert beneficial and harmful effects on youth's mental health. This study uses proponents of [general strain theory] ST (Agnew, 2001) to extend the assumptions by considering whether brokering indirectly affects youth's risky behaviors through parentification and acculturation stress. (p. 459)

Investigation into brokering frequency's effects on youth's free time would provide additional explication as to why brokering operated in both harmful...and beneficial...ways. (p. 470)

Kulis, S. (2001). Ethnic pride, biculturalism and drug use norms of urban American Indian adolescents. *Social Work Research*.

Academic achievement, American Indian pride, and certain facets of biculturalism can enhance the development of norms that protect American Indian students against drug use. Academic achievement...was the strongest predictor. (p. 9)

...ethnic pride increasing adherence to antidrug personal norms and confidence in ability to refuse drugs, but with no effect on descriptive norms, injunctive norms, or perceptions of positive consequences to drug use. (p. 9)

...a sense of ethnic shame or embarrassment – looms as a risk factor in the results. Ethnic negativity dampens the strength of antidrug personal norms disapproving the use of hard drugs and inhalants and weakens students' perceptions of the strength of their parents' injunctions against drug use. (pp. 9-10)

Intragroup ethnic diversity was not found to be a pervasive factor explaining differences in the anti-drug norms, however. (p. 10)

Greater acculturation into mainstream culture...also was generally unrelated to drug norms when others predictors were controlled. But where it did have a significant effect, it was in the direction of weaker antidrug norms... (p. 10)

American Indian girls reported feeling less certain than boys that they would refuse drug offers and described more of their friends as drug users, although all other antidrug norm outcomes were unrelated to gender. (p. 10)

The study...aims to understand whether and in what way differences in ethnic and cultural identities among American Indian youths relate to their normative resistance to drug use. (p. 2)

Our findings suggest that to develop and strengthen antidrug norms, a good school experience is needed, a sense of American Indian pride should be nurtured, and biculturalism needs to be recognized and addressed. (p. 10)

Kulis, S. (2003). Gender identity, ethnicity, acculturation and drug use: Exploring differences among adolescents in the Southwest. *Journal of Community Psychology*.

The findings suggest that it is gender identity rather than gender that becomes a risk or protective factor for boys and girls of different ethnic/acculturation backgrounds. (p. 184)

...some aspects of culturally prescribed gender roles can have a protective effect against drug use behaviors and attitudes, possibly for both girls and boys. (p. 184)

Another group whose behavior appears to contradict stereotypes are the students from lower income families...who often reported less drug use than higher income students. Further investigation is indicated to address whether this may be due to a preponderance of single-mother-headed families in this group [displaying conservative alcohol norms, exposed to fewer role models for aggressive masculinity?]. (pp. 184-185)

...aspects of masculine gender identity focusing on dominance and control of others were most clearly linked to drug outcomes: more lifetime and recent use of alcohol, cigarettes and marijuana, earlier initiation into use, and weaker anti-drug norms...Aggressive masculinity, however, showed stronger undesirable impacts on substance use outcomes for non-Latinos than for the more and less acculturated Mexican Americans, and in several instances its impact was significantly more deleterious for non-Latino girls than for non-Latino boys. (p. 185)

Assertive masculinity, which characterized the non-Latino girls more than any other group, appeared to have a buffering effect only in mitigating recent drug use and strengthening anti-drug norms. Although the effect applied to both boys and girls, it also applied only to non-Latinos. (p. 185)

Both affective femininity and submissive femininity had a typically similar protective effect against drug use regardless of gender, but the various significant effects applied more often to acculturated Mexican Americans and non-Latinos than to less acculturated Mexican Americans. (p. 185)

A small, but important finding in the other direction is the earlier initiation into drug use (among those who are users) of less acculturated Mexican American girls with the highest submissive femininity scores [less capable or confident in resisting offers?]. (p. 185)

Kulis, S. (2005). Mexican/Mexican American adolescents and *keepin' it REAL*: An evidence based substance use prevention program. *Children & Schools*.

3,402 Mexican heritage students in 35 Arizona middle schools (including 11 control sites); at baseline the mean age was 12.52 years ($SD=.64$ years)

In one instance -- drug refusal confidence -- the program appeared to strengthen resilience against

drug use, rather than merely retard its erosion. (p. 10)

Compared with students in the control schools, the students who participated in the *keepin' it REAL* reported beneficial effects on recent alcohol and marijuana use, future intentions to accept substance offers, confidence to refuse substance offers, and more realistic perceptions of peer substance use. (p. 10)

Compared with students in the control schools, the students who participated in the *keepin' it REAL* reported beneficial effects on recent alcohol and marijuana use, future intentions to accept substance offers, confidence to refuse substance offers, and more realistic perceptions of peer substance use. (p. 10)

...participation in this program retarded the students' transitions to elevated levels of substance use and their adoption of pro-drug attitudes and norms. (p. 10)

Results were less clear, however, regarding the importance of strict cultural matching of program content with student ethnicity. On the one hand, all of the significant program effects were confined to the Latino and multicultural versions of the curriculum that specifically targeted Mexican American cultural orientations...On the other hand, no statistically significant differences emerged in direct contrasts of the effectiveness of the Latino and multicultural curriculums compared with the non-Latino version. (p. 10)

Kulis, S. (2007). Differences by gender, ethnicity and acculturation in the efficacy of the *keepin' it REAL* model prevention program. *Journal of Drug Education*.

Data came from a randomized controlled trial in 35 Phoenix, Arizona middle schools involving 4,622 mostly Latino 7th graders

Although the effects of the intervention were less pronounced for less acculturated Latinas than for their male counterparts...their participation in the program may better prepare them for inevitable exposure to substance offers as they develop and acculturate. (p. 139)

Less acculturated Latino boys -- with their higher baseline substance use rates and stronger pro-drug norms -- benefited more immediately from the intervention than their female counterparts. Without the intervention, these boys might influence their peers to adopt pro-drug norms and begin substance use. (p. 139)

As expected, there were no gender differences in program efficacy overall; instead, there was a pattern of gender differences only in the sub-group that reflects more polarized gender roles -- less linguistically acculturated Latinos. Among this group, the intervention was significantly more effective among boys than among girls in preventing increases in recent alcohol and cigarette use and in regarding the adoption of pro-drug norms. (pp. 138-139)

The results of this study...also suggest that prevention efforts may be strengthened by attending to the special risks and resiliencies of certain subgroups of female and male youth. (p. 139)
In our results, both more acculturated Latino boys and girls reported the most frequent substance use and the strongest pro-drug norms at baseline compared to both their less acculturated Latino and non-Latino White counterparts [contrast to prior studies (e.g., Marsiglia et al., 2005)]. (pp. 139-140)

Kulis, S. (2007). Promoting reduced and discontinued substance use among adolescent substance users: Effectiveness of a universal prevention program. *Prevention Science*.

The findings reveal that program participation positively affected rates of reduction and recent discontinuation of *alcohol* [italics added for emphasis] use as well as rates of complete recent discontinuation of use of all three gateway substances [alcohol, cigarette and marijuana], and that these desired program effects did not reverse or diminish across time. (p. 14)
However, fewer users of multiple substances reported complete discontinuation of substance use than users of a single substance. (p. 14)

...findings suggest that program effects were not concentrated exclusively among occasional users but rather extended to users across the prior use spectrum. (p. 14)
The large differences in rates between program participants and the control group in the transition toward reduced or recently discontinued alcohol use show that the *keepin' it REAL* universal prevention program had beneficial program effects for many prior users of substances. (p. 15)

Kulis, S. (2007) Neighborhood effects on youth substance use in a Southwestern city. *Sociological Perspectives*.

3,721 7th grade students attending one of 35 Phoenix, Arizona middle schools participating in a drug prevention study (presumably that of *keepin' it REAL*); students ranged from 11 to 17, but 86% were either 12 or 13 years old.

This study focused on neighborhood factors associated with youth alcohol, cigarette, and marijuana use. (p. 14)

Many results appear in patterns that align with theories of neighborhood influences, including suggestions that immigrant adaptation and segmented assimilation processes influence youth at both individual and group levels. (p. 14)

The findings showing an apparently protective effect of high concentrations of recent immigrants against use of all three substances, but only by Mexican heritage respondents, is a pattern that is perhaps better anticipated in the “immigrant advantage” literature than in the neighborhood effects literature. What is curious is that these effects are substance-specific to different linguistic acculturation sub-groups: less alcohol use of the Spanish dominant in heavily immigrant

neighborhoods, but less marijuana use for the bilingual, and less cigarette use among the English dominant. (pp. 14-15)

The results at the individual level suggest some parallels, such as the consistent finding that less linguistically acculturated Mexican heritage youth are at substantially less risk of substance use, and that their most linguistically acculturated counterparts are actually at higher risk of use of some substances than native born Whites. (p. 15)

The neighborhood effects were confined to alcohol for the least linguistically acculturated Spanish dominant group, perhaps because alcohol is the least stigmatized and most commonly used substance in Mexican culture. In contrast, the bilingual youth may have more variation in exposure to illicit substances like marijuana because they are integrated...; their use levels seem to balance between the mitigating influence of proportionally more recent immigrants and the exacerbating influence of more acculturated neighborhood residents of Mexican heritage. (p. 15)

Other neighborhood structural effects that conform to prevailing theories of neighborhood effects on risk behaviors include the positive relationships between violent crime rates and alcohol use, and between poverty rates and cigarette use. (p. 16)

Neighborhood residential instability was associated with more cigarette use among the English dominant but less use of marijuana among the bilingual group. (p. 16)

The presence of many single mother households in the neighborhood was, conversely, associated with less cigarette use among the English dominant and more marijuana use among the bilingual. (p. 16)

...the absence of links between neighborhood factors and substance use by non-Hispanic White students underscores the need to consider inter- and intra-ethnic variability in future research on the impact of neighborhoods on youth [real? result of low statistical power?]. (p. 16)

Kulis, S. (2012). Gender roles and substance use among Mexican American adolescents: A relationship moderated by acculturation? *Substance Use & Misuse*.

1,466 Mexican American seventh-grade adolescents from Phoenix, Arizona; mean age was 12.70 (SD=.59) at the time the data for the current analysis was collected in the seventh grade (secondary data analysis study using archival data from a randomized controlled trial of the *keepin' it REAL* school-based prevention intervention)

The research presented here assessed the effects of adaptive/desirable and maladaptive/undesirable gender roles in predicting substance use in a sample of Mexican American middle school youth. (p. 2)

...in the present sample of Mexican American seventh-graders, maladaptive, aggressive masculinity was correlated with greater substance use, while adaptive, affective femininity was correlated with lesser substance use, for both boys and girls. (p. 10)

The sex differences that emerged from this study in the significant interactions of acculturation by gender roles provide additional insights into the gender role-substance use relationship.

Consistent with our hypotheses, for Mexican American boys, adaptive masculinity and maladaptive masculinity were particularly predictive of greater substance use, while adaptive femininity predicted less substance use for those who were *low* in acculturation...[The] significant interaction effects of adaptive masculinity by acculturation appeared only for binge drinking of alcohol, not general alcohol use frequency and amounts in the last 30 days. (p. 10)

In contrast...for Mexican American girls, maladaptive masculinity was particularly indicative of greater substance use for those who were high in linguistic acculturation. The more acculturated girls who adopt mainstream American gender roles may begin to manifest masculinity traits that are associated with greater substance use. In terms of maladaptive, submissive femininity, greater *marianismo*, in the least acculturated girls might be expected to predict lower levels of substance use, while maladaptive femininity in *highly* acculturated girls might be expected to increase vulnerability to substance use. What was unanticipated in the hypotheses was that this effect would only predict marijuana use, not use of other substances, and that no interactions between adaptive masculinity and acculturation would emerge for girls. (p. 11)

Sex differences in pubertal change may also be important...The greater physical adjustment required of adolescent girls reaching the age of menarche and adolescent girls' socialization into a subordinate social role may contribute to greater emotional distress and internalizing, as well as maladaptive aggressive externalizing problem behaviors. (p. 11)

Flavio, M. (2001). Ethnic labels and ethnic identity as predictors of drug use among middle school students in the Southwest. *Journal of Research on Adolescence*.

451 seventh graders, who composed a middle school subsample of a survey conducted in the three poorest school districts of a southwestern city (presumably related to the *keepin' it REAL* program); the average age of the students was 12.7 and 87% were 12 or 13.

The findings presented in this article support the premise that ethnic labels should not be disregarded when researching self-reported drug use among adolescents or youth of diverse ethnic backgrounds...For example, compared with non-Hispanic White students, Mexican American students reported using alcohol more frequently and reported using a greater variety of drugs, while African Americans reported using marijuana and hard drugs more frequently. (p. 41)

Our findings also verify...that ethnic labels alone were not especially good predictors of drug use among ethnically diverse adolescents. A stronger conclusion from our results is that ethnic labels are more powerful explanatory constructs of drug use among adolescents when used in combination with ethnic identity measures...ethnic identity helped appreciably to predict drug use and exposure when combined in interaction with ethnic labels. (p. 41)

The findings suggest that a strong sense of ethnic pride is a protective or resiliency factor against drug use for lower-income minority students, but is associated with increased risk of use among lower-income White students. Ethnic minority students with stronger ethnic pride reported less frequent drug use and drug exposure than those with a weaker sense of pride in their ethnic group. (p. 42)

In contrast, minority students who viewed their behavior, speech, and looks as consistent with their ethnic group used more types of drugs, more frequently, and at younger ages. Such outward consistency with one's ethnic group may be an indirect indicator of strong peer pressures toward

conformity and desire for group affiliation among early adolescents... (p. 42)

Marsiglia, F. (2002). Ties that protect: An ecological perspective on Latino/a urban pre-adolescent drug use. *Journal of Ethnic and Cultural Diversity in Social Work*.

Quantitative data were collected through the administration of surveys as part of a school-based intervention research project (presumably that of *keepin' it REAL*); 2,125 seventh grade students from 8 (those with an ethnographer) of 35 middle schools within a large size Southwestern city; students averaged 12.53 years of age ($SD=.65$ years; range 9 to 18 years)

Qualitative data were collected through recorded face-to-face interviews collected by graduate students.

These findings confirm other research identifying family bonding and school commitment as sources of resiliency for Latino youth. (p. 213)

The family provides the youth with advice, direction, modeling, and support when it comes to drug use and other deviant behaviors. The family represents the foundation of resiliency in the lives of this predominantly Latino/a youth sample. The school provided structured support, discipline, and modeling of pro-social behaviors for these youth. (pp. 213-214)

The absence of after-school opportunity is a profound finding, and rather disturbing. The lack of this macro support structure is a key element that should not be overlooked or ignored... (p. 215)

The after school context presented the surprising finding that a majority of the interviewed youth did not socialize with their same school peer group after school, or they did not have a peer group after school. Often the youth said that this was due to the dangers of their neighborhood context, such as gangs. (p. 213)

The purpose of this research is to advance our understanding of the protective and risk factors that shield Latino and other pre-adolescents from drug use. (p. 192)

The recommendations offered as a result of this analysis highlight several possibilities for social workers to strengthen the social bond that already exists between the students and their families and schools, and to create and increase the community bonding opportunities that were absent in these findings...For example...prevention programs should target families, schools, and communities as partners in the intervention strategies...A key role social workers can play is the role of cultural mediator...A possible concrete step...would be to create Family Centers in schools. (pp. 215-216)

Marsiglia, F. (2005) Acculturation status and substance use prevention with Mexican and Mexican-American Youth. *Journal of Social Work Practice in the Addictions*.

2,146 students in the study schools who completed the pre-test questionnaire during 7th grade and/or the post-test questionnaire in 8th grade and reported their race/ethnicity as “Mexican American, Mexican, or Chicano”

...English dominant [measure of acculturation] Mexican and Mexican-American participants, considered the most at risk, demonstrated more desirable outcomes across the intervention groups than their counterparts in the control condition. (p. 11)

No support was found, however, for the hypothesis that program outcomes would be moderated by particular matches between intervention version and language preference (p. 11)

A culturally grounded intervention may have a favorable effect for Mexican and Mexican-American youth who would be exposed increasingly to drug offers and opportunities to use substances that come with a broadening social landscape and new friendship networks disconnected from culture of origin and family control. (p. 12)

Participants who preferred to speak Spanish used substances less at both the beginning and at the end of the intervention compared to participants who preferred to speak English, confirming that Spanish language preference serves as a protective factors against substance use for this population. (p. 11)

In the borderlands as in other regions of the nation, social workers can support students of immigrant background to celebrate their cultural heritage and family and stay connected to their protective effects. (p. 12)

In the borderlands as in other regions of the nation, social workers can support students of immigrant background to celebrate their cultural heritage and family and stay connected to their protective effects. (p. 12)

Overall, youth of Mexican descent who participated in the program showed more favorable outcomes in substance use and in attitudes toward drug use than their counterparts in the control condition. (p. 11)

The present study aims at advancing knowledge about the impact of acculturation on the efficacy of the *keepin' it REAL* substance use prevention program for a sample of Mexican and Mexican-American youth in the Southwest borderlands region. (p. 5)

Marsiglia, F. (2012). *Beyond primary prevention of alcohol use: A culturally specific secondary prevention program of Mexican heritage adolescents.*

361 students from a subset of 6 schools (those assigned to condition 3 of the larger, overarching study) of whom 109 7th grade students were referred to and participated in the *REAL Groups* and the remaining 252 were control/*non-REAL Group*; significant differences were found between the two groups (age, household makeup)

Incorporating aspects of culture in a small group setting may serve as a protective factor against substance use for Mexican heritage adolescents. Although approximately 25% of participants in *REAL Groups* were not of Mexican heritage, these findings suggest that building cultural norms and values and having lessons rooted in these cultural norms of values can be a source of resilience for Mexican adolescents...future research should build upon these findings to further

refine the understandings of how cultural norms and values serve to protect... (p. 9)

...incorporating a culturally adapted mutual aid model is one tool which can be used to reduce substance use among Mexican heritage adolescents. (p. 9)

The results of this study support the hypothesis that providing an additional secondary prevention program for higher-risk students in addition to a primary prevention program reduces alcohol use among middle school-age students when compared to higher-risk students who did not receive the secondary prevention program. (p. 9)

The aim of this study is to test the efficacy of *REAL Groups* as a secondary substance use prevention program and companion to the primary prevention program, *keepin' it REAL*.

Matsunaga, M. (2010). Ethnic identity development and acculturation: A longitudinal analysis of Mexican-heritage youth in the Southwest United States. *Journal of Cross-Cultural Psychology*.

Latent profile and transition analyses revealed that the majority of the adolescents have strong to moderate ethnic identification, along with biculturalism and English-Spanish bilingualism; moreover, the increasingly engage in exploration of their ethnic root. Furthermore, multinomial logistic regression analyses revealed that these endorsement patterns are associated with demographic background factors, including gender, SES, parents' birthplace, and whether they had visited family or friends outside of the United States. (p. 420)

Our study has revealed that...acculturation experiences entail complex yet systematic patterns of ethnic identification, cultural orientation, and language use. (p. 421)

Most of the young adolescents endorsed profiles that included biculturalism as a major component. This buttresses previous findings that suggest that the modal acculturation orientation is integration, rather than a unidirectional move toward assimilation. Furthermore, it indicates that biculturalism may be considered vital for successful acculturation, at least in border communities where cross-cultural contact constitutes a routine of one's everyday life. (pp. 421-422)

...research suggests that absence of commitment and belongingness to one's ethnic group during adolescence marks a significant risk factor in terms of substance use and other risk behaviors. (p. 422)

...the major trend found in this study is the one toward a state in which individuals accommodate both the culture of settlement and the culture of origin and in which they increasingly explore their ethnic heritage. (p. 422)

...inspection of the profile transitions illuminates the structure of Mexican-heritage youths' ethnic identity and cultural/linguistic orientation development. Most notably, the [Moderate Ethnic Identification] MEI profile seems to provide a "hub," or center of major transitions. Particularly, youth with MEI profile are the ones on the boundary between biculturalism and monoculturalism... (p. 422)

Mexican-heritage youths' ethnic identity and cultural/linguistic profile is related to their sociodemographic characteristics and interpersonal relationships. Boys are found to be less likely to endorse bicultural profiles than girls in general...receiving reduced-cost lunch increased the youth's likelihood of [Strong Ethnic Identification] SEI or MEI profile endorsement... (p. 423) ...the experience of visiting one's family or friends living outside the United States within the past three years was associated with the SEI or MEI profile endorsement. (p. 423)

Pettigrew, J., Graham, J. W., Miller-Day, M., Hecht, M. L., Krieger, J. L., Shin, Y (2015). Adherence and delivery quality: Implementation quality and outcomes of 7th grade keepin' it REAL program. *Prevention Science*, 16:1, 90-99. doi: 10.1007/s11121-014-0459-1. PMID4104152. NIHMS272843.

In this study, two versions of the keepin' it REAL, 7th grade drug prevention intervention were implemented in 78 classrooms in 25 schools in rural districts in Pennsylvania and Ohio. IQ was measured through observational coding of 276 videos. IQ variables included adherence to the curriculum, teacher engagement (attentiveness, enthusiasm, seriousness, clarity, positivity), student engagement (attention, participation), and a global rating of teacher delivery quality. Results show that when implemented well, students show positive outcomes compared to students receiving a poorly implemented program. Delivery significantly influenced substance use and norms, but not efficacy. Adherence marginally significantly predicted use and significantly predicted norms, but not efficacy. Findings underscore the importance of comprehensively measuring and accounting for IQ, particularly delivery, when evaluating prevention interventions.

Lee, S., Aos, S., Pennucci, A. (2015). What works and what does not? Benefit-cost findings from WSIPP. *Washington State Institute for Public Policy*. 15. 1-14.

For the last 20 years, WSIPP has conducted systematic evidence reviews and economic analysis on a variety of topics for the Washington State Legislature. Over time, we have improved and refined the methods we use to conduct this research. When WSIPP undertakes an economic analysis at the direction of the legislature, we use a standardized set of procedures to collect and analyze research literature. We then apply consistent methods to translate the research findings to dollars and cents, asking, "What are the overall benefits and costs?" of each program or policy option. Finally, we use information about the uncertainty in the research findings and economic assumptions to compute the risk associated with each policy option. The primary goal of this research is to provide the legislature with objective information about the long-term economic consequences of each program or policy option reviewed. In this report, we summarize our current findings.

Marsiglia, F. F., Ayers, S. L., Baldwin-White, A., & Booth, J. (2016). Changing Latino Adolescents' Substance Use Norms and Behaviors: the Effects of Synchronized Youth and Parent Drug Use Prevention Interventions. *Prevention Science*, 17(1), 1-12.

While parent and youth substance use prevention interventions have shown beneficial effects on preadolescents, many programs have typically targeted US born European American and African

American families while overlooking the unique factors that characterize recent immigrant Latino families. This article presents the results on youth substance use when adding a culturally grounded parenting component, Familias Preparando la Nueva Generación (FPNG), to the existing and already proven efficacious classroom-based drug abuse prevention intervention, keepin'it REAL (kiR). Data come from youth (N = 267) participating in the randomized control trial of the interventions who were surveyed at base-line (beginning at 7th grade) and 18 months later (end of 8th grade). Using multivariate linear regression path analyses, results indicate when FPNG and kiR are combined, youth had significantly lowered alcohol and cigarettes use at the end of 8th grade, mediated through anti-drug norms, when compared with youth who only participated in kiR without parental participation in FPNG. These findings indicate that adolescent normative beliefs and related behaviors can be changed through synchronized culturally grounded parent and youth interventions and together can play an important role in reducing adolescent substance use.

Marsiglia, F. F., Kulis, S. S., Booth, J. M., Nuño-Gutierrez, B. L., & Robbins, D. E. (2015). Long-term effects of the keepin'it REAL model program in Mexico: Substance use trajectories of Guadalajara middle school students. *The journal of primary prevention, 36*(2), 93-104.

University affiliated researchers from Mexico and the US collaborated on the study design, program implementation, data collection, and analysis. Students and their teachers from two middle schools (secundarias) in Guadalajara participated in this field trial of Mantente REAL (translated to Spanish). The schools were randomly assigned to treatment and control conditions. The sample of 431 students reported last 30 day substance use at three times (one pretest and two posttests). Changes in substance use behaviors over time were examined using growth curve models. Long term desired intervention effects were found for alcohol and marijuana use but not for cigarettes. The intervention effects were greater for girls than for boys in slowing the typical developmental increase over time in alcohol use. Marijuana effects were based on small numbers of users and indicate a need for larger scale studies. These findings suggest that keepin' it REAL is a promising foundation for cultural program adaptation efforts to create efficacious school-based universal prevention interventions for middle school students in Mexico.

Marsiglia, F. F., Medina-Mora, M. E., Gonzalez, A., Alderson, G., Harthun, M., Ayers, S., ... & Kulis, S. (2019). Binational cultural adaptation of the keepin'it REAL substance use prevention program for adolescents in Mexico. *Prevention Science, 20*(7), 1125-1135.

This study advances knowledge about how to undertake cultural adaptations of efficacious US-based prevention programs in international settings.

Marsiglia, F. F., Ayers, S. L., Robbins, D., Nagoshi, J., Baldwin-White, A., & Castro, F. G. (2019). The initial assessment of a community-based intervention with mexican-heritage parents in boosting the effects of a substance use prevention intervention with youth.

Journal of community psychology, 47(2), 195-209.

Drawing from an ecodevelopmental framework, this article examines if adding a parenting component, Families Preparing the New Generation (Familias Preparando la Nueva Generación), to an efficacious classroom-based drug abuse prevention intervention, keepin'it REAL, will boost the effects of the youth intervention in preventing substance use for middle school Mexican-heritage students. Youth attending schools in a large urban area in the Southwestern U.S. (N = 462) were randomly assigned to 1 of 3 conditions: parent and youth, youth only, or control. Using ordinary least squares regression, changes in youth substance use outcomes were examined. Results indicate that youth whose parents also participated in prevention programming exhibited significantly lower use of alcohol, cigarettes, marijuana, and inhalants compared to youth who received only keepin'it REAL. Adding FPNG to kiR can positively affect familial and parent-child influences that can protect against youth substance use.

Shin, Y. (2020). Narrative engagement and interpersonal communication about substance use on adolescent substance use behaviors: a case study of keepin'it REAL. *Western Journal of Communication*, 1-24.

The present study examined direct and indirect effects of adolescent narrative engagement on substance use behaviors via refusal self-efficacy. This study also tested moderation effects of communication about substance use with parents, siblings, and friends on substance use behaviors. Students in 8th grade (N = 225) participated in surveys at two different time points. Path analyses revealed a positive association between identification with main characters and refusal self-efficacy as well as negative associations between refusal self-efficacy and the past 30-days substance use. Communication with parents and friends significantly moderated the relationship between refusal self-efficacy and the past 30-days substance use.

Kulis, S. S., Garcia-Perez, H., Marsiglia, F. F., & Ayers, S. L. (2020). Testing a culturally adapted youth substance use prevention program in a Mexican border city: Mantente REAL. *Substance Use & Misuse*, 1-13.

The study tested the efficacy of a version of the keepin' it REAL curriculum for middle school students that was culturally adapted for Mexico and renamed Mantente REAL. *Methods*: Students in 7th grade classrooms in four public schools participated in the study (N = 1,418, 49% female, mean age = 11.9). Using a clustered randomized design, two schools received the intervention and two served as a treatment-as-usual control group. Regular classroom teachers were trained to deliver the twelve-lesson Mantente REAL manualized curriculum. Parents provided active consent and students gave written assent to collect pretest and posttest questionnaire data, 7 months apart, at the beginning and end of the 2017-2018 academic year. We assessed the Mantente REAL intervention with general linear models adjusted for baseline, attrition, non-linear distributions, and school-level clustering. *Results*: Students who participated in Mantente REAL reported relatively less frequent use of alcohol and illicit drugs other than marijuana, compared to students in control schools. Males alone reported desirable intervention effects for marijuana use. These desirable effects were especially strong among students who reported higher initial levels of involvement in risky behaviors. Among students more at risk, both females and

males receiving the program reported relative reductions in the frequency of use of alcohol and illicit drugs. *Conclusions:* These promising results within the Mexico-US border context support a further dissemination of the intervention and additional youth prevention research in the region.