NC Center for Excellence in Youth Violence Prevention, UNC Injury Prevention Research Center, & School of Social Work’s Clinical Lecture Series present

Behind the scenes of “Keepin’ it REAL,” a model substance abuse prevention program for middle school students: Lessons learned through the process

Flavio F. Marsiglia, Ph.D.
SIRC is an Exploratory Center of Excellence funded by the National Institute on Minority Health and Health Disparities (NIMHD) of the National Institutes of Health (NIH), Awards: P20MD002316 & R01MD006110. The *keepin’t REAL* R01s were funded by NIDA/NIH.

SIRC is also partially funded by Arizona State University, by community partners’ contracts, and by revenues generated from licenses, patents, fees, and royalties.

Our work is made possible by the dedication of the research team and our very engaged Community Advisory Board members.
Outline

- The cultural and social context of the borderlands
- The Southwest Interdisciplinary Research Center (SIRC)
- Bottom-up approaches and the integration of unique needs and assets of communities in intervention research
- The development and evaluation of *keepin’ REAL* and related interventions
- Findings, ethical and practical issues, lessons learned
The Borderlands/ La Frontera

- The US and Mexico share almost 2,000 miles (3,138 km) of frontera, the longest international border separating a developed and a developing country in the world.

- The borderlands include 80 municipios in 6 Mexican states and 48 counties in 4 U.S. states.

- Gloria Anzaldúa (1987, p. 3) described the US-Mexico border as “una herida abierta donde el tercer mundo raspa contra el primero y sangra” [an open wound where the Third World grates against the first and bleeds].
La Frontera/ The Borderlands

- From 2000 to 2010 Arizona experienced a 24.6% increase in the total population; Texas 20.6%, New Mexico 13.2%, California 10.0%.
- The total population in US borderland states is 70,850,713.
- 38.2% of that total identified as Latino or Hispanic, the majority of which are Mexican heritage.
- There has been a recent decline in immigration from Mexico to Arizona, however, Texas experienced a significant increase from 2007 to 2010.

(US Census Bureau, 2011; Pew Hispanic Center, 2010)
AZ Demographic Trends

• Despite declines in migration from Mexico the Latino population in AZ continues to grow.

• Latinos made up 30% of the AZ population in 2010 and there are now more Latino children (43%) than White children (42%) in the state.

(US Census Bureau, 2011; Passel, Cohn & Gonzales-Barrera, 2012)
22 American Indian Nations in Arizona

- The American Indian population grew by 16% in the last decade and they now represent close to 5% of the total Arizona population.

- Phoenix has the largest urban American Indian population in the nation, closely followed by Los Angeles.

(US Census Bureau, 2011)
Social & Cultural Determinants

- Nonmedical factors play a fundamental role in the occurrence of illness and injury among individuals, and disparities in health across populations.

- Family, social, and economic factors can influence children's development, through many different and complex pathways (Braveman, 2011).

- 95% of children of immigrants are US born; ecodevelopmental influences place these children at greater risk than their parents. There is a need to prevent the erosion of original protective factors (Vega & Srinney, 2011).
Acculturation as a risk factor

- Study sample = 2,487 middle school students of Mexican heritage.

- Using multi-group structural equation modeling, linguistic acculturation was found to be positively and directly related to adherence to pro-drug norms, substance use intentions, and recent alcohol use, controlling for age, poor grades, and socioeconomic status.

- In addition, linguistic acculturation had an indirect effect on substance use intentions and recent alcohol use through pro-drug norms. The direct effect of linguistic acculturation on pro-drug norms was stronger for girls than for boys, as was its indirect effect on substance use intentions.

Marsiglia et al., 2010
Perceived Ethnic Discrimination

Mexican heritage 5th grade children (N=1,374) in Phoenix perceived high levels of ethnic discrimination, which predicted:

- Greater recent and lifetime use of alcohol, cigarettes and marijuana
- Attitudinal risk factors for later substance use—intentions to use substances, pro-drug norms, positive substance use expectancies, and peer approval of substance use.

(Kulis, Marsiglia, & Nieri, 2009)
SIRC’s Mission Statement

To generate use-inspired knowledge and interventions on social and cultural determinants of health in partnership with communities of the Southwest to prevent, reduce and eliminate health disparities
Action Model

Social Determinants of Health

Interventions
- Policies
- Programs
- Prevention
- Interventions
- Health Literacy

Outcomes
- Behavioral outcomes
- Specific risk factors
- Health related quality of life
- Health equity

Assessment, evaluation, and dissemination

(Adapted from Healthy People 2020)
Our communities deserve the best available science.
Community Based Participatory Research (CBPR)

- Is not a method per se but an orientation to research that applies a number of qualitative, quantitative and mixed methodologies.

- Begins with a research topic of importance to the community with the aim of combining knowledge and action for social change.

- Is a collaborative process that equitably involves all partners in the research process and recognizes the unique strengths that each brings.

(Viswanathan et al., 2004).
Community

KEEPS RESEARCH RESPECTFUL, ACCESSIBLE, AND SOCIALLY RELEVANT

- Meets Community Priorities
- Ensures Accessible Instruments
- Publicizes Findings

Development

- Has Community Relevance
- Ensures Safe & Effective Recruitment
- Helps Community

Implementation

- Focus of Inquiry / Problem Definition
- Recruit Participants
- Draw conclusions

Dissemination

- Study Design
- Collect Data
- Design interventions

- Funding
- + Analyze Data
- + Translate findings

- Has Scientific Value
- Ensures Safe & Scientifically Appropriate Recruitment
- Builds on Theory

- Meets Funder Priorities
- Ensures Scientific Rigor
- Publishes Findings

KEEPS RESEARCH SCIENTIFICALLY SOUND AND ACADEMICALLY RELEVANT

Researchers
Health Equity Action Research

Race & Ethnicity

COMMUNITY

First generation
Understand
Detect

Second generation
Provide solutions

Third generation
Take action

Fourth generation

HEALTH EQUITY

Social Determinants
A Culturally Grounded Approach

- Grounded in race/ethnicity, gender, sexual orientation, religion, social class, and ability status.

- Facilitates a process of awareness about culture and its protective factors (*la cultura cura*). It recognizes *intersectionality* – individuals form complex multidimensional identities.

- Aims at generating change in partnership with communities (CBPR). Aims at improving equity, quality, and access to care from a social justice and distributive justice perspective.

(Marsiglia & Kulis, 2009)
Designing, Testing, and Disseminating Interventions

Keepin’it REAL (Refuse, Explain, Avoid & Leave)

is SIRC’s signature substance abuse prevention intervention originally funded by multiple NIH/NIDA awards. This SAMHSA Model Program was licensed by ASU and is commercially available.
Program Rationale

- **Role of culture in youth substance use and prevention**
  - Substance & format of successful prevention models reflect the culture and learning styles of the students
  - Minority youth respond favorably to programs in which teachers or characters presented are from their own group

- **Standard prevention messages enforce dominant values**
  - Do not validate cultural experiences of minority children

- **Superficial attempts to include culture may fall short**
  - Rely on overly simplistic and stereotypical representations of culture, and “ethnic glosses”
  - Need for further tests of culturally grounded prevention
Theoretical Model

Communication Competency
Knowledge, Motivation

Social Learning
Life Skills, Resistance Skills, Modeling Behavior

Ecological Risk & Resiliency
Parent/Family/Peer Influence
Neighborhood Contexts
Psychological Factors

Culturally Grounded Approach

Home Environs
Single, 2 Parent, Grand

Religion
Cath, Prot, Jewish, Muslim

Local
Phoenix, AZ

Youth
5th Graders

Ethnic Groups
Mex-Amer, Euro Am, Af Am, Native Am

ASU Southwest Interdisciplinary Research Center
keepin’ it REAL Strategies

Strategies for resisting offers of substances used most often by adolescents.

• Refuse
  Say “NO” to the offer without giving a reason why.

• Avoid
  Avoid getting into a situation because you think beer might be offered there.

• Explain
  Give an explanation or an excuse to turn down the offer.

• Leave
  Just leave the situation without accepting the offer.
<table>
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<th>Activity</th>
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### Research Design

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<td>Control</td>
<td>O₁, O₂, O₃, O₄</td>
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**Key:**
- **O** = Observations: O₁ = Pretest; O₂-₄ = Posttests
- **X** = Treatment: X₁ = Mexican Program; X₂ = White/Afr.Am. Program; X₃ = Multicultural Program
- **B** = Boosters

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_Images and Institutional Logos_
## Summary Results: (significant effects)

<table>
<thead>
<tr>
<th>PRO-DRUG USE:</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
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<tbody>
<tr>
<td>Recent Alcohol Use</td>
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<tr>
<td>Recent Cigarette Use</td>
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<td>Recent Marijuana Use</td>
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<td>Descriptive Norms</td>
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<tr>
<td>Positive Drug Expectancy</td>
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### ANTI-DRUG:

- Use of **R.E.A.L.** Strategies ↑ ↑ ↑
- Injunctive Norms: Parent ↑
- Injunctive Norms: Friends ↑ ↑ ↑
- Personal Norms ↑ ↑ ↑
- Self Efficacy ↑ ↑ ↑
- Personal Intentions ↑ ↑ ↑

Mexican American Versus Control
**Summary Results:** (significant effects)

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<td><strong>ANTI-DRUG:</strong></td>
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<tr>
<td>Use of R.E.A.L. Strategies</td>
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<td>Injunctive Norms: Parent</td>
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<td>Personal Intentions</td>
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<td><strong>T2</strong> <strong>T3</strong> <strong>T4</strong></td>
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**ANTI-DRUG:**

- Use of **R.E.A.L.** Strategies: ↑ ↑ ↑ ↑ ↑ ↓ ↑ ↑ ↑ ↑ ↑ ↑
- Injunctive Norms: Parent: ↑
- Injunctive Norms: Friends: ↑ ↑ ↑
- Personal Norms: ↑ ↑ ↑ ↑
- Self Efficacy: ↑ ↑ ↑
- Personal Intentions: ↑
**Summary Results:** (significant effects)

<table>
<thead>
<tr>
<th>PRO-DRUG USE:</th>
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<th>White/ Afr. Am. Versus Control</th>
<th>Multi-Cultural Versus Control</th>
<th>Culturally Matched Versus Mismatched Control</th>
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<tbody>
<tr>
<td><strong>T2</strong></td>
<td><strong>T3</strong></td>
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</table>

**ANTI-DRUG:**

- **Use of R.E.A.L. Strategies**  
  - **T2** | ↑ | ↑ | ↑  
  - **T3** | ↑ | ↑ | ↑  
  - **T4** | ↑ | ↓ | ↑  
  - **T5** | ↑ | ↑ | ↑  
  - **T6** | ↑ | ↑ | ↑  
  - **T7** | ↑ | ↑ | ↑  

- **Injunctive Norms: Parent**  
  - **T2** | ↑ | ↑ | ↑  
  - **T3** | ↑ | ↑ | ↑  
  - **T4** | ↑ | ↑ | ↑  

- **Injunctive Norms: Friends**  
  - **T2** | ↑ | ↑ | ↑  
  - **T3** | ↑ | ↑ | ↑  
  - **T4** | ↑ | ↑ | ↑  
  - **T5** | ↑ | ↑ | ↑  
  - **T6** | ↑ | ↑ | ↑  
  - **T7** | ↑ | ↑ | ↑  

- **Personal Norms**  
  - **T2** | ↑ | ↑ | ↑  
  - **T3** | ↑ | ↑ | ↑  
  - **T4** | ↑ | ↑ | ↑  

- **Self Efficacy**  
  - **T2** | ↑ | ↑ | ↑  
  - **T3** | ↑ | ↑ | ↑  
  - **T4** | ↑ | ↑ | ↑  

- **Personal Intentions**  
  - **T2** | ↑ | ↑ | ↑  
  - **T3** | ↑ | ↑ | ↑  
  - **T4** | ↑ | ↑ | ↑  

**Note:** The symbols ↑ and ↓ indicate significant increases and decreases, respectively.
Program Effectiveness: Summary (I)

- Over time, both Mexican American and Multicultural versions had similar desired impacts.

- Mexican American version had largest initial impact:
  - lower alcohol use;
  - stronger anti-drug norms;
  - more frequent use of R.E.A.L. strategies;
  - most effects persisted after 6 and 12 months.
Program Effectiveness: Summary (II)

- **Multicultural** version particularly effective 12 months after implementation:
  - lower alcohol and marijuana use;
  - more use of **R.E.A.L.** strategies to resist alcohol;
  - stronger anti-drug norms;
  - lowered positive substance use expectancies.
Test of cultural matching between curriculum and student’s ethnicity...

- more use of R.E.A.L. alcohol resistance strategies
- strengthened injunctive norms (friends)
- lowered perceptions of friends’/peers’ substance use
- increased self efficacy (confidence to resist drugs)

But effects small, scattered, inconsistent across waves

Effectiveness of Multicultural version after 12 months suggests cultural inclusiveness may be as important as ethnic matching
Acculturation as a Moderator of intervention Effects: Comparison of Intervention to Control by Acculturation Status (Est/SE)

<table>
<thead>
<tr>
<th>Outcome Variables</th>
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</table>

* p < .05. ** p < .01. *** p < .001.
Summary of Linguistic Acculturation & the Efficacy of the Intervention

- Spanish dominant Mexican students in the experimental group maintained their lower use rates and had the strongest anti-drug norms throughout the experiment.

- Findings support the protective effects of lower acculturation hypothesis.

- English dominant Mexican/Mexican American students had higher drug use rates at baseline and benefited the most for the intervention.
The prevention to treatment continuum

- 1,365 students reporting using (alcohol, cigarettes, or marihuana) in the last 30 days at baseline.
- Event history analysis
- Separate models for each substance
Percentage of Prior Users who Reduced or Ceased Use of Substances, RCT of Keepin' it REAL

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<td>Alcohol: Cessation</td>
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<td>Marijuana: Cessation</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td>Cessation of all Three</td>
<td>27</td>
<td>20</td>
</tr>
</tbody>
</table>
# Summary of Results (Odds Ratios)

## Intervention Vs. Control

<table>
<thead>
<tr>
<th>Substance</th>
<th>Reduction</th>
<th>Discontinuity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>1.72 : 1 *</td>
<td>1.66 : 1 *</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>1.05 : 1</td>
<td>1.30 : 1</td>
</tr>
<tr>
<td>Marijuana</td>
<td>1.19 : 1</td>
<td>1.31 : 1</td>
</tr>
<tr>
<td>All three</td>
<td>---</td>
<td>1.61 : 1 *</td>
</tr>
</tbody>
</table>

*p<0.05

The probability of reduction is 72% higher in experimental than in control group.
Conclusions

• *keepin’ it REAL* participants reduced and discontinued their use of alcohol at higher rates than those in the control group

• They also discontinued their use of all three substances at higher rates than the control group

• There were effects in the same direction for cigarettes and marihuana, but they were not significant

• The detected desired effects were found among students that initially reported low, medium and high rates of use
Another Surprise... When to Intervene?


• Growth Curve Models

• 32 schools, 1,447 Mexican heritage students
Frequency of use of marihuana, averages reported by experimental and control groups from 5th – 8th grade.
Some conclusions...

• Ascending trajectories in marihuana were significantly less pronounced among students in TX7 y TX5&7 than in the control group

• The trajectory for students who received the intervention only in the 5th grade was almost the same than those in the control group

• Intervening both in the 5th and the 7th grade (double dosage) was not more effective than intervening only in the 7th grade
Ethical and Practical Issues

• Testing prevention programs with Latinos in AZ schools, amidst anti-immigration legislation, raised ethical and practical challenges
  – State laws prohibiting the use of Spanish language in schools made it challenging to offer bilingual instruction to youth, high mobility rates...
Ethical and Practical Issues cont.

• Asking undocumented parents to meet at school may have been placing them at risk.
• Additionally, fear of deportation may have inhibited undocumented parents from participating in the parent component of the program, resulting in the exclusion of a vulnerable population.
• We did not ask participants about documentation status in survey instruments to protect participants.
• Not asking for information about documentation status may have limited our understanding of the psychosocial dynamics impacting Latino adolescent substance use in AZ.
Ethical and Practical Issues cont.

• Implementing *Keepin’it REAL* in Mexico raised practical challenges:
  – More students in each class room (50+)
  – Limited availability of audio visual equipment

• Adapting *Keepin’it REAL* for urban American Indian youth and implementing it in schools raised questions about who should be recruited to participate in the intervention
Persistent Issues in Cultural Adaptation

- The fidelity-adaptation dilemma
- What procedures should intervention developers follow when conducting a cultural adaptation?
- Is there evidence that cultural adaptations are effective?
- How can wide within-group cultural variation be accommodated in a cultural adaptation?
- How do we know when culture has been properly integrated in an intervention?
- What does that look like?
- Should cultural adaptation be required for all EB interventions?
Some consensus is emerging...

To culturally adapt evidence-based prevention programs:

- Modify content and delivery modalities but preserve fidelity to core principles.
- Incorporate cultural values and contextual variables
- Address cognitive issues/problems with the original program (translation, relevant examples, learning styles)...
- And affective issues: lack of cultural resonance, values conflicts with the target population
Implications

- **Policy**: Documenting needs, designing answers with communities, testing for evidence, cost-effectiveness, sharing results with policy makers.

- **Direct Practice**: For participants to recognize themselves in the content and delivery format of the intervention appears to be more important than segregating them by ethnic group (Marsiglia et al., 2005).

- **Research**: cultural adaptation & translational research. Model for community based research.

- **Social Work Education**: The practitioner-researcher model
Implementation of *keepin’ it REAL* across the US
and globally…
Research Trajectory: Continuing to adapt

- *Keepin’ it REAL* middle schools
  - RCT N = 6,035
- Adapted for 5th graders
  - RCT N = 3,038

- Adapted with urban Am. Indian youth
  - RCT N = 247
- Adapted in Jalisco-Mexico
  - N = 431
- Adaptation urban American Indian families
  - RCT N = 600
- Family component efficacy
  - RCT N = 1,304

- Family component
  - RCT N = 1,080
  - Effectiveness

* Marsiglia & Hecht, 2005
Thank you!

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