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Using Community-based Participatory Research to Adapt *keepin' it REAL:* Creating a Socially, Developmentally, and Academically Appropriate Prevention Curriculum for 5th Graders

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Abstract

This paper reports on a process in which program designers, classroom teachers, and students worked together to adapt the 7th grade "keepin' it REAL" prevention curriculum to a developmentally, socially, and academically appropriate curriculum for 5th graders. A Community-Based Participatory Research methodology (CBPR), combined with a 9-step adaptation model, emphasized a collaborative approach, both transformative and empowering. Essential adaptation elements were the Risk-to-Resiliency Continuum; the teaching of a wide range of skills including risk assessment, decision making, and resistance strategies; and, maintaining the theoretical grounding of Narrative Theory, Communication Competence, and Focus Theory of Norms. This paper describes how CBPR methodology can be conducted successfully while focusing on sustained theoretical grounding and effective research practices in a school-based setting.

This article describes how Community-Based Participatory Research (CBPR) methodology was used in conjunction with adaptation theories and practices to create a 5th grade version of a national model drug prevention curriculum originally developed for and used with 7th grade students. Special attention is given to steps used to adapt the curriculum, theoretical foundations on which the curriculum was built, and characteristics of the new target audience. First, we describe theoretical underpinnings of the original curriculum. Next, we describe recruitment of community-based partners who helped guide the adaptation. Then, we report on tasks that teacher partners completed. Finally, we discuss outcomes including student feedback and implications for use of CBPR to develop effective prevention messages for youth.

REVIEW OF LITERATURE

A search for existing literature on curriculum adaptation in prevention science produced few articles on adaptation theory. Of those, articles ranged from adapting HIV/AIDS programs to altering sexual behaviors to adapting life skills programs (Bell, Newcomer, Bachrach, Borawski, Jemmott, Morrison, Stanton, Tortolero, & Zimmerman, 2007; Devieux, Malow, Rosenberg, & Dyer, 2004; Solomon & Card, 2006; Tortolero, Markham, Parcel, Peters, Escobar-Chaves, Basen-Engquist & Lewis 2005; Tsarouk, Thompson, Herting, Walsh, & Randelol, 2007). Of research conducted specifically to understand the role of cultural variables in adapting curricula for racial minority youth, only five (Castro, Barrera. & Martinez, 2004; Castro & Garfinkle, 2003; Castro & Alarcon, 2002; Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003) offered specific insight and guidance.

While the five studies were diverse, all drew similar conclusions that focused on four elements of the adaptation process. Most frequently considered was fidelity and fit (Castro et al., 2004)—adaptation that stays faithful to core elements of the original program (Bell et al., 2007; Stanton, Guo, Cottrell, Galbraith, Li, Gibson, Pack, Cole, Marshall, & Harris, 2005; Stanton, Harris, Cottrell, Li, Gibson, Guo, Pack, Galbraith, Pendleton, Wu, Burns, Cole, & Marshall, 2006; Tortolero et al., 2005). All authors stressed the importance of in-depth knowledge of the community (Castro & Garfinkel, 2003; Devieux et al., 2004; Solomon & Card, 2006; Tortolero & Markham, 2005; Tsarouk et al., 2007). Some highlighted process considerations, including the need to involve community members in the adaptation process (Castro & Alarcon, 2002; Komro, Perry, Veblen-Mortenson, Bosma, Dudovitz, Williams, Jones-Webb, & Toomey, 2004; Stanton et al, 2006; Stefanich, Witmer, Young, Benson, Penn, Ammerman, Garcia, Jilcott, & Etzel, 2006; Tsarouk et al., 2007). All emphasized the need for focus groups and pilot studies to perform the adaptation process (Solomon & Card, 2006; Castro & Alarcon, 2002).

PRINCIPLES OF DEVELOPMENT

Four important principles were incorporated into the original curriculum development process. First, the approach was culturally-grounded (Collier, Ribeau, & Hecht, 1986; Hecht, Marsiglia, Elek-Fisk, Graham, Kulis & Dustman, 2001; Vega & Gil, 1998), strengths-based (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999), and resiliency-focused (Miller, Alberts, Hecht, Krizek, & Trost, 2000; Miller, 1998; Garmezy, 1994; Spitzberg & Hecht, 1984). Second, previous research conducted by this team demonstrated that facilitated learning, using life experiences as the context for teaching resistance strategies, proved significantly effective in enhancing self-efficacy of adolescents to resist offers of substances and participation in riskladen behaviors (Scheier, Newcomb, & Skager, 1994). The third principle targeted existing communication competencies of youth (Alberts, Hecht, Miller-Rassulo, & Krizek, 1992; Hecht & Miller-Day, in press; Miller et al., 2000) for the purposes of enhancing and expanding language options and word usage skills and promoting the development of stronger selfefficacy (Palinkas, Atkins, Jerreira, & Miller, 1995). The final principle targeted improvement and expansion of social competency through facilitated learning, emphasizing the use of personal narratives to contextualize instruction and learning (Gosin, Marsiglia, & Hecht, 2003). The integration of these principles combined building cultural strengths with expanding communication skills of minority youth to enhance social competence (Wills, Vaccaro, & McNamara, 1992) and to strengthen self-efficacy (Trimble, 1995).

Development of academic proficiency during implementation of the original and adapted curriculum, although not included as a philosophical principle, was considered a primary realism factor. Learning objectives were aligned with State Academic Standards for 5th grade and the National Health Education Standards. As is the case with nearly all states since NCLB

legislation, Arizona mandates academic standards for each grade level and school performance using high-stakes testing is of paramount concern for school-based implementations.

MAINTAINING THEORETICAL GROUNDING

The original curriculum development, as well as this adaptation effort, integrated three specific theories. Narrative Theory (Hecht, Marsiglia, Elek-Fisk, Wagstaff, Kulis, Dustman, & Miller-Day, 2003) including culturally grounded narratives (Clandinin & Connelly, 2000; Hecht & Miller-Day, in press) and life experience narratives (Holland & Kilpatrick, 1993; Miller et al., 2000) guided the development. Communication Competence Theory (Monaghan & Goodman, 2007) emphasized the power of communication skills in building self efficacy. The Focus Theory of Norms (Kallgren & Cialdini, 2000; Wall & Trost, 1996) targeted student personal, descriptive, and injunctive norms about substance use (Elek, Miller-Day, & Hecht, 2006; Wall, Power, & Arbona, 1993; Lewis & Neighbors, 2006; Miller-Day & Barnett, 2004; Miller-Day & Dodd, 2004).

Narrative Theory (Clandinin, 2007; Fischer, 1984) was considered the primary theoretical anchor of the adaptation because developmental and social levels of 10 and 11 year olds posed a different set of life experiences. Student stories for 10 and 11 year olds in elementary schools were far more teacher- family- and parent- driven than those described by the emerging semi-autonomous middle school adolescents whose stories were used in the original version. The differences between the 5th and 7th graders' stories reflect the theoretical precept that narratives must meet cultural standards of social competency to be effective.

Social competency, arising from communication competence (Spitzburgh & Hecht, 1984), is essential for student mastery of culturally acceptable communication strategies. Providing students with opportunities to develop a broad range of communication skills by adding specific language and word choices to their repertoire of responses was a recurring theme of all learning objectives throughout the lessons. Previous research that defined social competency skills related to substance use resistance (Miller, Alberts, Hecht, Krizek, & Trost, 2000; Hecht, Warren, Wagstaff, & Elek, in press) provided the basis for on-going development of communication competence. Students learned a variety of ways to counter offers to participate in risky situations, choosing responses that best matched the cultural values and family systems within which they operated every day (Miller et al., 2000).

Although relatively new to prevention science, the Focus Theory of Norms (Cialdini, Reno, & Kallgren, 1990) provided the context within which to broaden students' understanding of the concept of norms, raising awareness of personal perceptions and considerations about how others might view substance use/abuse. According to the theory, the combination of personal, descriptive, and injunctive norms guides individual perceptions of their own and others' activities and behavior (Christensen, Rothgerber, Wood & Matz, 2004). Others' research (Miller et al. 2000; Oetting & Lynch, 2003; Sloboda & Bukoski, 2003) speaks to the importance of adolescent perceptions of 'what's normal' on their own behavior choices. When socially acceptable norms, therefore, are embedded into behavior sequences early, those norms are linked to self-efficacy, especially in relationships that influence behaviors.

METHODS

For this study, two methodologies were engaged simultaneously. CBPR served as the primary focus of the first stages. Following engagement of community, adaptation methodology became the focus. This methods section describes both, as the study moved from recruiting community participants to producing a culturally grounded adaptation.

Recruiting the Adaptation Team

Participatory research methodology demanded that practicing classroom teachers be part of the adaptation team since they would be teaching the curriculum (Harthun, Drapeau, Dustman, & Marsiglia, 2002). Therefore, we developed a list of characteristics important to have represented in the adaptation discussions—a range of classroom teaching experience, a mix of genders, representation from multiple districts in the urban area, and representation of the many cultures of urban students. The team turned to schools to recruit teachers matching the characteristics and who were interested in participation, requiring teachers to agree to an additional 16 hour commitment at the end of several working days. Stefanich et al. (2006) found that incentives honored professional time and contributions; thus each participant received professional development hours and a small stipend. Importantly, professional participation was acknowledged in the published curriculum; each teacher was named as part of the Curriculum Development Team.

Adaptation as an Iterative Process

As phases of adaptation were undertaken, the research team balanced theoretical grounding of the prevention science component with the developmental needs of 5th graders (Stanton, Guo, et al., 2005; Stanton et al., 2006; Klopfer, Yoon, & Um, 2005; Tortolero et al., 2005). Teaching professionals integrated instructional guidelines with academic requirements and social structure dynamics of the age group (Stefanich et al., 2006). For each lesson, the research team presented the theory behind topics and objectives. Following that, the teaching professionals generated direct instruction segments, in-class activity content, and homework. The development team incorporated national and state standards in classroom activities and homework while integrating the facilitated learning model for teachers, then tying everything back to theoretically grounded learning objectives. Using this iterative process ensured that the participatory model was embedded in all outcomes; that adaptation team continuously referenced the theories guiding development of all curriculum components (Tsarouk etal, 2007).

Adaptation of the videos that accompany the curriculum was undertaken using the same approach. Many technical aspects of video production and editing influenced the process, as described elsewhere in this paper. Participants were informed of adaptation restrictions, but only in so far as they affected issues of producing new videos or shooting new footage. From there, the adaptation process duplicated the curriculum adaptation process.

In creating an adaptation of the original curriculum, ethnic background and cultural heritage of the audience continued to be important. Research demonstrated that these contexts determine whether or not behaviors are deemed appropriate or inappropriate for members of a cultural group (Office of Applied Studies, 2004; Ashery, Robertson, & Kumpfer, 1998; National Institute for Drug Abuse [NIDA] 1986). Especially when working with CBPR, researchers must remain mindful of cultural nuances undergirding community interaction (Hecht, Corman, & Miller-Rassulo, 1993). Even when adapting an existing curriculum for the same community, but for younger members, studies must "design prevention interventions that are responsive to the cultural needs of a local community" (Castro et al., 2004, p. 41).

Step 1: The Learning Audience; comparing 5th to 7th graders

Teachers examined characteristics of 5th and 7th graders (see Table 1) that revealed major differences in cognitive, developmental, social, and academic arenas. Questions included: (a) What should 5th graders know and be able to do? (b) How well do they manage concrete vs. conceptual content? (c) In what kinds of social situations do these students find themselves? (d) What are peer relationships like? (e) What prevention language is appropriate for use with 5th graders? and (f) What academic standards (e.g., reading, math, health, science) are they

required to meet? (Webb, Getz, Baer, & McKelvey, 1999;Klopfer et al., 2005). As students develop and mature at different rates, we found that all these questions were addressed in more than one category. For instance, "What kinds of social situations do these students find themselves?" is associated with 3 distinct categories; Risky Situations, Reliance on Family, and Age Appropriate Scenarios.

With fundamental differences identified, CBPR emphasis turned to instruction. Cognitive considerations included vocabulary development and critical thinking. Developmental issues focused on communication contexts and language usage such as word choice. Social contexts and academic development were also targeted for review.

Step 2: Lesson Model

Teachers assessed the model program curriculum with the ultimate goal of creating two 12-lesson versions (Multicultural and Acculturation Enhanced) of the *keepin' it REAL* curriculum, accompanied by 5 videos, that were developmentally, cognitively, socially, and academically appropriate for implementation in 5th grade classrooms. The team considered ways to create adaptations maximizing strengths of the existing 10-lesson curriculum while restructuring areas that might pose problems for 5th grade students. Working from the original model program lessons, the adaptation team addressed the following lesson components: (a) key terms; (b) lesson objectives; (c) concepts/skills presented; (d) in-class activities; (e) examples, scenarios, vignettes; (f) lesson time frame; and, (g) homework assignments.

Step 3: Teacher Perception; Culture and Students

To help our teacher partners understand the importance of personal cultural background as it relates to learning, we asked them to list things they thought they had in common with their students and those things that were disparate. Teachers also were asked to identify positive influences inherent in the cultures of their students and themselves. The exercise raised awareness of similarities and differences that might influence communication, classroom practices, and student reactions to instruction.

In the first session with community partners, teachers reviewed research on cognitive, developmental, social, and academic differences and developed a list of what they thought 5th graders liked. Then teachers were asked to query their students, using the same set of questions. They discovered that their preconceptions about students were often wrong (see Table 2 for comparisons).

It was fortuitous that, at the start of the process, teachers recognized the importance of learning about their students directly rather than relying on their preconceptions; and they used the information they gathered from their students to inform decisions during the adaptation.

Step 4: Adaptation of Existing Lessons

As teachers began adapting the original curriculum for use with 5th grade students, they were given a template that included components based on the structure and format of the lessons (see Table 3). The table also shows sample teacher comments emerging from these in-depth discussions about lesson components. Using this information, teachers developed models for lesson activities, examples, scenarios, and graphic organizer templates to make them more appropriate for 5th graders.

Step 5: Developing New Lessons

The adaptation team was charged with developing new lessons for two culturally-distinct versions of the model curriculum. The Multicultural version would emphasize transition from childhood to pre-adolescence and talking with/listening to parents. The Acculturation

Enhanced version would focus on the value of being bicultural and living in a multicultural world. Both versions focus on teaching students the core resistance strategies of refuse, explain, avoid, and leave.

New Lesson Themes

One of the new lessons in the Multicultural version (Taking Responsibility) challenges students to learn how to use a decision-making process to differentiate dependence from independence and to reinforce and broaden their understanding of responsibility. A second lesson focuses on talking with/listening to parents, especially how to ask parents for advice.

In one of the new lessons in the Acculturation Enhanced version. Living in Two Worlds, students learn that bilingualism, multilingualism, and cultural diversity are personal assets. In a second lesson, students learn about communicating with parents and about strengthening the protective factors from their original culture as they move into the new culture.

Principles of Learning

In preparation for developing new, yet intricately connected lessons, teachers were introduced to principles of learning, a framework used to construct original lessons. This research explains that "new learning is shaped by the learner's prior knowledge, that much learning occurs through social interaction, that learning is closely tied to particular situations, and that successful learning involves the use of numerous strategies" (Leinhardt, 1992, p. 24). Working in pairs and triads, teachers developed introductory activities intended to tap student prior knowledge, allowing teachers to learn what students already know and what they think about what they know. Lesson activities encourage students to work in pairs or small groups. To reinforce the notion that learning is situational, activities with teacher support encourage students to practice resistance strategies in multiple settings throughout the school.

Step 6: Enhancing Effect of Lesson Messages

In the development of the original curriculum, the project team collaborated with the Communication Arts Magnet of a local high school to develop and produce a series of eight videos, and an introductory segment, illustrating resistance strategy messages using *kids speaking to kids* (Holleran et al.. 2002; Reeves, Dustman, Holleran, & Marsiglia, 2008; Hecht & Miller-Day, in press). High school students assigned to work on the videos attended training about the video project. Students shared commonalities with the target audience in terms of (a) adolescent concerns and felt-needs, (b) ethnicity issues, (c) gender relations, and, (d) socioeconomic class concerns. They interviewed younger students to uncover experiences in risk-related situations and strategies used to resist offers of substance use (Gardner & Steinberg, 2005; Lang, Schwartz, Chang, & Lee, 2004).) The high school team scripted, directed, and produced two videos for each strategy and the introductory video. The videos, two of which were awarded Rocky Mountain Emmys, included English and Spanish language scenarios reflecting real lives of adolescents.

Teachers reviewed the videos from the original curriculum. Research shows that video dramatically increases the effectiveness of interventions if media messages reflect characteristics of the targeted audience. Mass media have greater potential for delivering effective prevention messages to target populations than any other dissemination device (Anselmi & Gouliamos, 1998; Cortes, 1987). Earlier analyses showed that the 7th grade curriculum videos had an independent effect on substance use (Hecht et al., 1993). When the intended audience is adolescents who self-identify as members of non-white groups and live in poverty-driven urban communities, that potential goes up. Adolescents are more prone to adopt modeled behavior when the model is someone they believe is like them. "Most...

minorities realize... that the media influence not only how others view them, but even how they view themselves" (Cortes, 1987, p. 31).

Teachers were asked to ensure that videos reflected 5th graders' realities and portrayed the importance of kids teaching kids. Replicating the lesson-revision process, they focused on (a) cognitive, (b) social, (c) developmental, and (d) academic appropriateness. The challenge was to select four videos to support Lessons 4–7 (CORE lessons of Refuse, Explain, Avoid, and Leave) that were easiest to edit without destroying their original validity, coherence, and integrity while presenting situations and characters with which 5th graders could identify. Appropriate teacher assessments and suggestions were integrated, and a rough version was produced for the pilot.

Step 7: Aligning Lessons to State Academic Standards

The final task necessitated aligning the lessons to state academic standards. Standards supportive of teaching core content areas of reading, writing, and language arts as well as health and work-place skills were emphasized in every lesson. Teachers expressed appreciation that the curriculum could he used to teach students something as important as drug resistance strategies while meeting state and national academic standards for 5th graders.

Step 8: 5TH Grade Adaptation Field Pilot

A K-8 school that had participated in the original Drug Resistance Strategies project (NIDA Grant RO1-DA-05629) agreed to pilot test the adapted curriculum (Komro et al., 2004). Three 5th grade teachers were trained by the team's professional development specialist. One classroom was selected for the multicultural version while the other two implemented the acculturation enhanced version. The graduate assistant who had been immersed in focus group and curriculum development processes, and who was trained in techniques of observation, was responsible for writing detailed observations during lesson implementation. Teachers scheduled pilot classes so the Liaison could observe every lesson. Field notes reflected student reactions to materials and detailed differences between student and teacher responses. Specifically, the research team wanted to gather feedback about developmental, social, and academic appropriateness of content.

Teachers suggested more student-centered active participation earlier in the lessons to engage learners more quickly. Teachers found the lesson plan format very teacher friendly and acknowledged that, while experienced teachers might not need all suggestions and tips included in the manual, inexperienced teachers might find them very helpful. Teachers noted that students loved role plays and classroom activities that generated student interactions. Teachers also stated that the manual was comprehensive and well formatted. Student responses focused on the importance of sharing narratives and opportunities to interact with one another while the teacher facilitated rather than instructed.

Teachers recommended important changes for individual lessons and for restructuring some in-class activities and homework. For example, in one lesson, they suggested a hands-on activity instead of a worksheet. In another, they requested more scenarios as well as expanding existing scenarios to offer more roles for students. Teachers asked for additional overhead transpareneies, model homework assignments, and deletions of what students already knew. Finally, teachers offered specific feedback from students about the videos; these ideas related to final editing to enhance viewing smoothness and content appropriateness.

Step 9: Curriculum Production

Using pilot feedback, the team began to create the final curriculum, including smoothly edited videos. Comments and observations were analyzed for patterns across a particular lesson,

lesson activities, lesson materials, or the curriculum as a whole. The most significant changes were incorporated in (a) definition of key terms; (b) inclusion of more age-appropriate examples/scenarios; (c) development of models for student activities using a model (teacher does), in-class (teacher completes example with class or students work together), and by themselves (student does individually) format; (d) addition of writing space/white space on student handouts to provide space for students to print or write answers; and, (e) creation of color transparencies.

THE FINAL PRODUCT

The final product consists of two 12-lesson versions *of keepin' it REAL*, accompanied by 5 videos developmentally, cognitively, socially, and academically appropriate for implementation in 5th grade classrooms. The Multicultural version emphasizes transition from childhood to pre-adolescence and talking with/listening to parents. The Acculturation Enhanced version focuses on the value of being bicultural and living in a multicultural world. Both versions focus on teaching students the core resistance strategies of refuse, explain, avoid, and leave.

PRELIMINARY OUTCOMES

The longitudinal randomized controlled trial to determine program effectiveness continues. In the meantime, preliminary analyses have been prepared for all participating schools to provide timely feedback about how students responded to the adapted curriculum. The reports, individualized by school, provided important needs assessment data for required state and federal reports related to Safe and Drug-free Schools funding. At this time, comparisons across sample conditions have not been completed. Thus, current emphasis focuses on student feedback regarding curriculum content, classroom-based learning activities, videos, and homework.

Similarities among students emerged across the sample. For example, preliminary analysis revealed that the majority of the 5th grade students had never tried alcohol, cigarettes, marijuana, or other drugs, although the rates of recent alcohol, cigarette, and inhalant use increased slightly over the school year. Preliminary analyses showed increased use of the strategies from pre- to post-test (see Figure 1) and 5th graders reported using the *keepin' it REAL* resistance strategies (i.e., refuse, explain, avoid, or leave) when they experienced substance use offers. Students in implementation schools reported positive responses to individual components of the program. Overall, 5th graders evaluated *keepin' it REAL* highly, with a large majority indicating that they *liked* or *loved the* program, a rating well over 90%, at all sites.

Since the videos were created in 1998, the research team was concerned that students might perceive the messages and situations portrayed as outdated. Fortunately, these 5th grade students said they related to the video characters who were illustrating the REAL strategies (see Figure 2). In-class activities, discussions, and even homework received high student approval.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

While incorporating adaptation methodology was a new element for the research team, CBPR had been used successfully for earlier curriculum and booster development. The CBPR process worked smoothly and the team concentrated on adaptation methodology to assure a coherent and theoretically grounded product. Inclusion of combined methods proved to expand the steps necessary to accomplish the goal and thereby extended the timeline beyond what was originally proposed. The team discovered that teachers did not come to the project with an in-depth

knowledge of curriculum design, principles of learning, or direct experience with prevention curricula of any type. They were accustomed to outside agencies (e.g., school resource officers, prevention specialists) coming to the classroom to deliver prevention programs. As a result, focus group sessions became more knowledge-driven than was anticipated, and facilitators needed to insert direct instruction as part of the process.

The team also discovered that teachers were exhausted at the end of their working days. Although we compensated teachers using monetary and professional development certification incentives, time constraints forced evening sessions. A Saturday schedule might have resulted in more energetic participants and more efficient use of time and talents.

IMPLICATIONS FOR PRACTICE AND RESEARCH

The curriculum adaptation process afforded community participants and researchers opportunities to engage in challenging substantive discussions and decision-making. Participant-centered methodology and adaptation structure added to the complex dimensions of the project while enriching perspectives that participants brought to the project. Throughout the collaboration, consistent emphasis on culture, importance of expert informants, and adherence to theory proved imperative to successful outcomes, forming implications for practice and research.

Community-based participatory research methodology proved essential to success. The decision to integrate CBPR allowed expansion of data collection, participant involvement, and acknowledgement of community-based experts. This approach emphasized the collaborative nature of the process, clearly defining roles of community-based participants and university researchers. Community-based participants provided practitioner knowledge key to the development of materials that were desirable and appropriate for school settings, while university researchers provided scientific guidance to ensure adherence to theory. For prevention practitioners, implications may be parallel. While practitioners bring content and implementation expertise, clients bring cultural expertise. Even an evidence-based program does not favorably compare to a significantly different cultural setting, and only a conscious effort to explore that arena first, before implementing, will serve to increase the likelihood of success.

CBPR served to ensure that adapted materials reflected the cultures of students and their families, leading to a strong culturally grounded approach to prevention messages. The collaboration process ensured a deep structure adaptation (Castro et al, 2004) rather than a superficial or glossed over approach to content alteration and modification. The approach embraced the school as part of student culture and included teacher perspectives on schooling and academic requirements faced by students as well as insider information essential to embedding student and family cultural aspects into content, activities, and assignments.

Many times, prevention practitioners are not full-time members of a school staff and, indeed, may only appear on campus to implement their programs. Our experience indicates that the classroom teacher would be more effective than a part-time practitioner because the teacher is able to reinforce student use of skills and concepts in a variety of contexts throughout the school day, and across academic subjects. Not only do teachers have built-in credibility that emanates from stability and consistency, they also possesses an intimate understanding of school and community cultures, all essential components in effective program delivery.

Careful structuring of the adaptation process, including clear definition of roles and responsibilities for all team members, led to clear pathways for knowledge building and development of adaptation competence. A timeline that included all points of the collaborative process was designed and reviewed by all participants as one of the first steps. Essential to the

success of this structuring process was acknowledgement of expertise among all participants based upon the adaptation objectives to be met; and, the success of collaborative efforts is based upon the degree of importance assigned to the expertise of each participant.

Through pilot feedback, students and teachers reinforced their importance as the experts on culture within the community and classrooms. Pilot teachers emphasized that materials and learning objectives had to reflect academic/institutional requirements for their students. They offered concise corrections, additions, and changes to materials, offering a balance of independent observation and subjective feedback to inform final decisions about lesson validity.

Once again, the team learned that providing a good program was not enough. The fact that all learning objectives aligned with state and national academic standards was of utmost importance in all discussions with school leaders and teachers. In this era of high-stakes testing and the accompanying media coverage, these responses would indicate that practitioners or research teams wishing to implement a school-based program during regular school hours would first have to prove its value by justifying instructional time allocation before other benefits might enter the conversation. To request a significant piece of the very short instructional day allotted for student learning, this team had to prove that the curriculum would easily integrate into the rigorous demands of the tested curriculum.

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References

- Ashery, RS.; Robertson, EB.; Kumpfer, KL., editors. NIDA Research Monograph No. 177. Washington, DC: U.S. Government Printing Office; 1998. Drug Abuse Prevention Through Family Interventions.
- Anselmi, W.; Gouliamos, K. Essay Series. Vol. 29. Toronto: Guernica; 1998. Elusive margins: consuming media, ethnicity, and culture.
- Alberts JK, Hecht ML, Miller-Rassulo M, Krizek RL. The communicative process of drug resistance among high school students. Adolescence 1992;27(105):203–226. [PubMed: 1539497]
- Bell GS, Newcomer SF, Bachrach C, Borawski E, Jemmott JB, Morrison D, Stanton B, Tortolero S, Zimmerman R. Challenges in replicating interventions. Journal of Adolescent Health 2007;50:514–520. [PubMed: 17531757]
- Castro FG, Alarcon EH. Integrating cultural variables into drug abuse prevention and treatment with racial/ethnic minorities. Journal of Drug Issues 2002;32:783–810.
- Castro FG, Barrera M, Martinez CR. The cultural adaptation of prevention interventions: Resolving tensions between fidelity and fit. Prevention Science 2004 March;5(1):41–45. [PubMed: 15058911]
- Castro FG, Garfinkle J. Critical issues in the development of culturally relevant substance abuse treatments for specific minority groups. Alcoholism: Clinical and Experimental Research 2003;27:1381–1388.
- Christensen PN, Rothgerber H, Wood W, Matz DC. Social norms and identity relevance: a motivational approach to normative behavior. Personality & Social Psychology Bulletin 2004;30(10):1295–1309. [PubMed: 15466602]

Cialdini R, Reno R, Kallgren C. A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. Journal of Personality and Social Psychology 1990;58:1015–1026.

- Clandinin, DJ., editor. Handbook of Narritive Inquiry: Maping a Methodology. Thousand Oaks, CA: Sage Publishers; 2007.
- Collier MJ, Ribeau SA, Hecht ML. Intracultural communication rules and outcomes within three domestic cultural groups. International Journal of Intercultural Relations 1986;10:439–457.
- Cortés C. A Long Way to Go: Minorities and the Media. Media & Values 38, npn. 1987 Winter;
- Devieux JG, Malow RM, Rosenberg R, Dyer JG. Context and common ground: Cultural adaptation of an intervention for minority HIV individuals. Journal of Culture of Cultural Diversity 2004;11:49–57.
- Elek E, Miller-Day M, Hecht M. Influences of personal, injunctive, and descriptive norms on early adolescent substance use. Journal of Drug Issues 2006;36(1):147–171.
- Fisher WR. Narration as a human communication paradigm: The case of public moral argument. Communication Monographs 1984;51:1–22.
- Gardner M, Steinberg L. Peer influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: An experimental study. Developmental psychology 2005;41(4):625–635. [PubMed: 16060809]
- Garmezy, N. Reflections and commentary on risk, resilience, and development. In: Haggarty, RJ.; Sherrod, LR.; Garmezy, N.; Rutter, M., editors. Stress, risk, and resilience in children and adolescents: Processes, mechanisms, and interventions. Cambridge, UK: Cambridge University Press; 1994. p. 1-18.
- Gosin M, Marsiglia FF, Hecht ML. keepin' it REAL: A drug resistance curriculum tailored to the strengths and needs of preadolescents of the Southwest. Journal of Drug Education 2003;33(2):119–142. [PubMed: 12929705]
- Harthun ML, Drapeau AE, Dustman PA, Marsiglia FF. Implementing a prevention curriculum: An effective researcher-teacher partnership. Education and Urban Society 2002;34(3):353–364.
- Hawkins JD, Catalano RF, Kosterman R, Abbott R, Hill KG. Preventing adolescent health-risk behaviors by strengthening protection during childhood. Archives of Pediatric and Adolescent Medicine 1999;153:226–234.
- Hecht, Corman, Miller-Rassulo. An evaluation of the drug resistance project: A comparison of film versus live performance. Health Communication 1993;5:75–88.
- Hecht, ML.; Marsiglia, FF.; Elek-Fisk, E.; Graham, JW.; Kulis, S.; Dustman, P. Evaluation of the drug resistance strategies intervention: A test of cultural appropriateness in program content. Symposium conducted at the ninth annual meeting of the Society for Prevention Research; Washington, DC. 2001 Jun.
- Hecht ML, Marsiglia FF, Elek-Fisk E, Wagstaff DA, Kulis S, Dustman P, Miller-Day M. Culturally-grounded substance use prevention: An evaluation of the keepin' it R.E.A.L. curriculum. Prevention Science 2003;4:233–248. [PubMed: 14598996]
- Hecht, ML.; Miller-Day, M. The Drug Resistance Strategies Project: A communication approach to preventing adolescent drug use. In: Frey, L.; Cissna, K., editors. Handbook of Applied Communication. Philadelphia, PA: Lawrence Erlbaum Associates, Inc; in press
- Hecht ML, Warren JW, Wagstaff DA, Elek E. Substance Use, Resistance Skills, Decision Making, and Refusal Efficacy among Mexican and Mexican American Preadolescents. Health Communication. in press.
- Holland TP, Kilpatrick AC. Using narrative techniques to enhance multicultural practice. Journal of Social Work Education 1993;29:302–308.
- Holleran L, Reeves L, Dustman P, Marsiglia FF. Creating culturally grounded videos for substance abuse prevention: A dual perspective on progress. Journal of Social Work Practice in the Addictions 2002;2 (1):55–78.
- Kallgren RR, Cialdini RB. A Focus Theory of Normative Conduct: When Norms Do and Do Not Affect Behavior. Personality and Social Psychology Bulletin 2000;26(8):1002–1012.
- Klopfer E, Yoon S, Um T. Teaching complex dynamic systems to young students with StarLogo. Journal of Mathematics and Science Teaching 2005;24:157–178.

Komro KA, Perry CL, Veblen-Mortenson S, Bosma LM, Dudovitz BS, Williams CL, Jones-Webb R, Toomey TL. Brief report: The adaptation of Project Northland for urban youth. Journal of Pediatric Psychology 2004;29:457–466. [PubMed: 15277588]

- Kreuter MW, Lukwago SN, Bucholtz DC, Clark EM, Sanders-Thompson V. Achieving Cultural Appropriateness in Health Promotion Programs: Targeted and Tailored Approaches. Health Education & Behavior 2003;30(2):133–146. [PubMed: 12693519]
- Lang A, Schwartz N, Chang Y, Lee S. Processing substance abuse messages: Production pacing, arousing content, and age. Journal of Broadcasting & Electronic Media 2004;48(1):61–89.
- Leinhardt G. What Research on Learning Tells Us About Teaching. Educational Leadership 1992 April; 49(7):20–25.
- Lewis MA, Neighbors C. Social Norms Approaches Using Descriptive Drinking Norms Education: A Review of the Research on Personalized Normative Feedback. Journal of American College Health 2006;54(4):213–218. [PubMed: 16450845]
- Miller, MA.; Alberts, JK.; Hecht, ML.; Krizek, RL.; Trost, M. Adolescent relationships and drug abuse. NY: Erlbaum Publications; 2000.
- Miller-Day M, Barnett J. "I'm Not a Druggie": Adolescents' Ethnicity and (Erroneous) Beliefs About Drug Use Norms. Health Communication 2004;16(2):209–228. [PubMed: 15090286]
- Miller-Day M, Dodd A. Toward a Descriptive Model of Parent–Offspring Communication about Alcohol and Other Drugs. Journal of Social and Personal Relationships 2004;21(1):69–91.
- Monaghan, LF.; Goodman, JE. Communication and culture. In: Monaghan, LF.; Goodman, JE., editors. A cultural approach to interpersonal communication: essential readings. (Forward). Malden, MA: Blackwell; 2007.
- National Institute for Drug Abuse (NIDA). National Clearinghouse for Alcohol Information (NCAI). Communication With Youth About Alcohol. 1986
- Oetting, ER.; Lynch, RS. Peers and the prevention of adolescent drug use. In: Sloboda, Z.; Bukowski, WJ., editors. Handbook of Drug Abuse and Prevention. NY: Kluwer Academic/Plenum Publishers; 2003. p. 101-119.
- Office of Applied Studies. Results from the 2003 National Survey on Drug Use and Health: National findings (DHHS Publication No. SMA 04–3964, NSDUH Series H–25). Rockville, MD: Substance Abuse and Mental Health Services Administration; 2004.
- Palinkas, LA.; Atkins, CJ.; Jerreira, D.; Miller, C. Effectiveness of social skills training for primary and secondary prevention of drug use in high-risk female adolescents. Paper presented at the meeting of the Society for Prevention Research; Scottsdale, AZ. 1995 Jun.
- Reeves L, Dustman P, Holleran L, Marsiglia F. Creating culturally-grounded prevention videos: Defining moments in the journey to collaboration. Journal of Social Work Practice in the Addictions 2008;8 (1/2):1–30
- Scheier LM, Newcomb MD, Skager R. Risk, protection and vulnerability to adolescent drug use latent variable models of three age groups. Journal of Drug Education 1994;24(1):49–82. [PubMed: 8046550]
- Sloboda, Z.; Bukowski, WJ. Handbook of Drug Abuse Prevention. NY: Kulwer Academic/Plenum Publishers; 2003. Preface.
- Solomon J, Card JJ. Adapting efficacious interventions: Advancing translational research in HIV prevention. Evaluation and the Health Professions 2006;29:162–194.
- Spitzberg BH, Hecht ML. A component model of relational competence. Human Communication Research 1984;10:575–599.
- Stanton B, Guo J, Cottrell L, Galbraith J, Li X, Gibson C, Pack R, Cole M, Marshall S, Harris C. The complex business of adapting effective interventions to new populations: An urban to rural transfer. Journal of Adolescent Health 2005;37:163.e17–163.e26. [PubMed: 16026728]
- Stanton B, Harris C, Cottrell, Li X, Gibson C, Guo J, Pack R, Galbraith J, Pendleton S, Wu Y, Burns J, Cole M, Marshall S. Trial of an urban adolescent sexual risk-reduction intervention for rural youth: A promising but imperfect fit. Journal of Adolescent Health 2006;38:55e.25–55e.36. [PubMed: 16387250]

Stefanich CA, Witmer JM, Young BD, Benson LE, Penn CA, Ammerman AS, Garcia BA, Jilcott SB, Etzel RA. Development, adaptation and implementation of a cardiovascular health program for Alaska Native women. Health Promotion Practice 2006;6:472–481. [PubMed: 16210690]

- Tortolero SR, Markham CM, Parcel GS, Peters RJ, Escobar-Chaves SL, Basen-Engquist K, Lewis HL. Using intervention mapping to adapt an effective HIV, sexually transmitted disease, and pregnancy prevention program for high-risk minority youth. Health Promotion Practice 2005;6:286–298. [PubMed: 16020623]
- Trimble, JE. Toward an understanding of ethnicity and ethnic identity, and their relationship with drug use research. In: Botvin, GJ.; Schinke, S.; Orlandi, MA., editors. Drug Abuse Prevention With Multiethnic Youth. Thousand Oaks, CA: Sage; 1995. p. 3-27.
- Tsarouk T, Thompson EA, Herting JR, Walsh E, Randelol B. Culturally specific adaptation of a prevention intervention: An international collaborative research project. Addictive Behaviors 2007;32:1565–1581. [PubMed: 17197107]
- Vega, WA.; Gil, AG. Drug use and ethnicity in early adolescence. NY: Plenum Press; 1998.
- Wall JA, Power TG, Arbona C. Susceptibility to antisocial peer pressure and its relation to acculturation in Mexican-American adolescents. Journal of Adolescent Research 1993;8:403–418.
- Wall, CM.; Trost, MR. Psychosocial approaches to drug prevention: The social norms element. Paper presented at the conference of the Western States Communication Association; Pasadena, CA. 1996.
- Webb JA, Getz JG, Baer PE, McKelvey RS. Intentions to use alcohol among fifth and sixth graders: The roles of social and stress/coping motives. American Journal of Orthopsychiatry 1999;69:541–547. [PubMed: 10553465]
- Wills TA, Vaccaro D, McNamara G. The role of life events, family support, and competence in adolescent substance use: A test of vulnerability and protective factors. American Journal of Community Psychology 1992 June;20(3):349–374. [PubMed: 1415032]

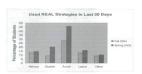


Figure 1. Use of REAL in past 30 days

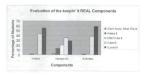


Figure 2. Student evaluation of the curriculum components

TABLE 1Developmentally Appropriate Instruction Guidelines

Category	5 th Grade	7 th Grade
Planning for Instruction Connected to Q#1, Q#5 and Q#6	More visual display that can remain over time; Emphasize links to prior knowledge; Pre-matched pairs/triads to involve students in interactions with all students in class	Visuals may change by day/week; Links to prior knowledge important; can be broader than personal experiences; Students are used to being regrouped; emphasis on concepts/skills/processes of curriculum
Age Appropriate Scenarios Connected to Q#1, Q#3, and Q#4	More ego-centered than other-person perspective; 5 th grader reports on how situation affects them; conflicts between friends/family	Scenarios are "other person" focused beyond self; more "external influences"; socialization outside home – more important
Age Appropriate Language Connected to Q#1, Q#2 and Q#6	Determine based on setting; Sophisticated language &/or street language may/may not work	7th grade students created and approved the language for all keepin' it REAL lessons
Independent Work Connected to Q#1, Q#5 and Q#6	More direct instruction & guided practice needed; Student work groups - specific tasks & guideposts; Connections between prior knowledge-new learning must be made for students	Students use work groups to resolve questions about assignments/tasks; Students brainstorm without extensive guided practice; Students make connections between prior knowledge & new learning when prompted
Risky Situations Connected to Q#1, Q#3, Q#4 and Q#5	Restricted world of 5th grade less mobility less freedom fewer consumable resources Look to parents for answers; Family – safe haven; Outside family circle & neighborhood– "risky" territory	More mobile go to malls & video game rooms go to movies with friends more freedom of movement on campus; Expected to answer questions posed by adults without parent coaching
Reliance on Family Connected to Q#2, Q#3, Q#4, Q#5	Resiliency centers on family life (whatever family looks like); Students rely on adult family members for the "truth" & to keep/get them out of risky situations; Decisions are couched in family; Boundaries are family oriented	More peer oriented, although family is important; Emphasis in classroom instruction; developing independent decision-making skills; learn strategies to use without seeking others' advice; Consideration of others when making decisions

TABLE 2

Sample Comparison of Student and Teacher Responses

Category	Teachers thought	5th Graders reported
What movies do your students watch?	Matrix, American Pie, Lizzie MaGuire	Tarzan, Terminator, Scary Movies 1, 2, 3, The Hulk, Holes
What do your students like to read?	Captain Underpants, animal stories, Goosebumps, Magic Treehouse, Junie B. Jones Don't like: Harry Potter Holes	Harry Potter series. Holes

TABLE 3

Sample Teacher Comments about Lesson Components

Lesson 1: Options & Choices	Modifications/Revisions
Key Terms • Level of language Focus on "choice."	Simplify vocabulary. For example. "preferences" is defined as "favorable/unfavorable." Use "good/bad" = "what you like" Use "consequence" instead of "outcome." "Simple preference" = little decision; "Wise choice" = big decision
In-Class Activities Level of language Complexity of concepts Age appropriateness	Leave out boyfriend/girlfriend activities.
Examples, Scenarios, Vignettes • Level of language • Complexity of concepts • Age appropriateness	Change the example in the activity where the middle schooler is at a store buying a present for a friend by him/herself because 5 th graders don't have that kind of freedom.
Homework Assignment Level of language Complexity of concepts Age appropriateness	Ask students to do homework and be ready to discuss it the next day, not the next week (as a review to Lesson 2). There's too much time between lessons for them to remember to turn in their work. For all activities, including this one, make a teacher model.