Published in final edited form as:

J Behav Health Serv Res. 2014 January ; 41(1): . doi:10.1007/s11414-012-9304-0.

Developing Empirically Based, Culturally Grounded Drug Prevention Interventions for Indigenous Youth Populations

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Abstract

This article describes the relevance of a culturally grounded approach toward drug prevention development for indigenous youth populations. This approach builds drug prevention from the “ground up” (ie, from the values, beliefs, and worldviews of the youth that are the intended consumers of the program), and is contrasted with efforts that focus on adapting existing drug prevention interventions to fit the norms of different youth ethnocultural groups. The development of an empirically based drug prevention program focused on rural Native Hawaiian youth is described as a case example of culturally grounded drug prevention development for indigenous youth, and the impact of this effort on the validity of the intervention and on community engagement and investment in the development of the program are discussed. Finally, implications of this approach for behavioral health services and the development of an indigenous prevention science are discussed.

Keywords

indigenous; Native Hawaiian; drug; prevention; health disparities

Compared with other youth ethnocultural populations, research has shown that Indigenous youth populations (eg, American Indian, Alaskan Native, and Native Hawaiian youth) have some of the highest rates and earliest initiation of substance use.^{1–8} For example, recent national epidemiological data has shown that 26.7 percent of American Indian youth have tried marijuana before age 13 (compared with 8.1 percent of the overall youth population).¹ Further, these rates have been shown to increase more steeply over time for indigenous youth, compared with other youth ethnocultural groups.⁷ Despite these alarming statistics, there has been a lack of rigorously evaluated, empirically based drug prevention programs for indigenous youth.^{4,9–11} This has become an issue of scientific concern, as demonstrated by the growing interest of federal agencies in developing indigenous-focused interventions to address adverse health outcomes, such as substance abuse.¹²

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Conflict of Interest Statement

The author(s) declared no conflicts of interest with respect to the authorship and/or publication of this article.

The purpose of this article is to describe the relevance of a culturally grounded approach to drug prevention development for indigenous youth populations. Culturally grounded drug prevention focuses on the development of prevention interventions for specific ethnocultural groups from the “ground up” (ie, from the values, beliefs, behaviors, and worldviews of youth that are intended to receive the intervention).¹³ Despite some pragmatic limitations of this approach, a central premise of this article is that culturally grounded prevention development for indigenous youth is necessary to establish a foundation for an indigenous prevention science that is rooted in culture and region. A case example of the development of a novel drug prevention program for rural Native Hawaiian youth is used to describe one approach toward culturally grounded prevention development.

Literature Review

Culturally Grounded Versus Culturally Adapted Prevention Programs

A growing body of research has indicated that social/behavioral interventions aligned to the norms and values of specific cultural groups are more effective for those groups compared with the interventions delivered to those groups in their original form.^{14,15} However, in the field of drug prevention with minority youth populations, there has been a debate related to the best approach to align these interventions to specific cultural groups. Specifically, some have argued for the need for prevention programs to be culturally “grounded” (that is, developed from the cultural values and beliefs specific to each culture), while others have argued that these interventions need to be culturally “adapted” (that is, modified from existing prevention programs originally developed for youth populations that are culturally and regionally distinct from the target population). In the literature, there have been far more examples of the latter type of program, such as cultural adaptations of Life Skills Training,^{16,17} The Strengthening Families Program,¹⁸ and Protecting You/Protecting Me.¹⁹ These studies have reported mixed findings, and have prompted the examination of issues of fidelity versus “fit” of adapted prevention programs.²⁰

In contrast to culturally adapted approaches, culturally grounded approaches place the culture of the participant at the center of the intervention. Interventions are designed based on the cultural and social contexts of the targeted population.²¹ Culturally grounded programs build on values, beliefs, practices, and socio-historical perspectives of the targeted population, which form the core of the intervention strategies.²² Two rigorously evaluated, culturally grounded drug prevention programs have been developed in recent years—keepin’ it REAL,^{13,23,24} and The Strong African American Families Program (SAAF).^{25,26} These programs have focused on Mexican/Mexican American youth, and African American youth, respectively. To date, however, there are very few evidence-based, culturally grounded prevention programs specific to indigenous youth. A review of the National Registry of Evidence-Based Programs and Practices (NREPP) found only one intervention fitting this categorization (Project Venture), with only one preliminary published research study demonstrating the efficacy of the program.²⁷

Holleran Steiker et al²⁸ and Okamoto²⁹ described the strengths and limitations of both culturally grounded and adapted prevention interventions. The benefit of cultural adaptations are that they are quicker to develop and implement to “scale”, and therefore could be more cost-effective than culturally grounded approaches. Due to the severity of indigenous health disparities, this becomes an important consideration. These interventions may have the potential to positively impact the health of Native populations more quickly, thereby mitigating the overall severity of health-related phenomena (eg, substance abuse, HIV, etc.) by interrupting their developmental progression earlier. However, the problem with cultural adaptations is that there is a lack of information in the extant literature that can be used to guide the adaptational process of interventions for minority youth populations.³⁰ While

several models have been recently developed to describe the process of cultural adaptation of interventions,^{31,32} or the extent to which empirically supported interventions need adaptation to specific cultural groups,³⁰ these adaptational models are based upon established psychotherapeutic interventions (e.g., cognitive behavioral therapy) for clients with severe socio-behavioral symptomatology (e.g., clinical depression). Models used to guide cultural adaptations in community-based prevention interventions with non-clinical samples are less prevalent in the scientific literature. This issue is particularly problematic for cultural adaptations of prevention interventions with indigenous populations, as there is also a lack of a broader body of research focused on indigenous prevention science. Without established core prevention programs, principles, or “ingredients” for indigenous prevention, it is difficult to adapt any existing prevention intervention to a specific indigenous group beyond the “surface” structure of the program.

In contrast to culturally adapted programs, culturally grounded programs take much longer to develop and are quite expensive. For example, the “pre-prevention” phase in the development of a culturally grounded drug prevention program for rural Hawaiian youth spanned over four years.³³ The length of time to develop these interventions may not be acceptable for some indigenous populations that are struggling with intensive or widespread health problems which require immediate attention. However, the benefit of this approach is that it addresses the issue of intervention “fit” —that is, the extent to which the program accommodates the needs and reflects the worldviews of the consumer population.²⁰ Equally as important, it also promotes community engagement and investment, as the community is typically involved in several stages in the process of intervention development.³⁴

Why Culturally Grounded Programs for Indigenous Youth?

Holleran Steiker et al²⁸ note that it is not possible or feasible to develop culturally grounded drug prevention interventions for every specific ethnocultural population. However, two primary issues highlight the relevance and importance of a culturally grounded approach to be used with prevention intervention development for indigenous youth—(1) The cultural “uniqueness” of indigenous youth populations, and (2) the importance of community investment and engagement with indigenous communities.

Cultural “Uniqueness”—Despite the specific ethnocultural focus of culturally grounded prevention interventions, research has shown that these programs have had some generalizability across other ethnic groups, particularly within the same region or location. For example, despite its focus on Mexican/Mexican American youth, keepin’ it REAL has also been shown to be effective in slowing the rate of substance use for African American and Euro American youth in the Southwest U.S.¹³ However, one study has challenged the generalizability of these programs for indigenous youth. Using growth curve modeling, Dixon et al³⁵ found that keepin’ it REAL demonstrated negative (iatrogenic) effects on substance use behavior for a large sub-sample of American Indian youth in the Southwest U.S. While these findings could have been the result of the content and/or delivery of the program, they suggest that prevention interventions need to be tailored to the cultural “uniqueness” of indigenous youth populations. Specifically, programs may need to address unique experiences, values, and worldviews of indigenous youth, such as colonization,³⁶ and perceived discrimination.³⁷

Additionally, there are unique indigenous-based phenomena that do not have any parallels to majority Western culture, making adaptation of existing prevention interventions difficult. For example, the concept of place (‘ina) is significant in Native Hawaiian culture, and does not have any parallel in majority Western culture. Mokuau³⁸ described how ‘ina has historical and religious significance for Native Hawaiians, and is related to their overall

well-being. Several studies have described the importance of this concept in the efficacy of social/behavioral interventions for Native Hawaiians.^{38–40} Similarly, the concept of the canoe reflects an important traditional aspect of coastal Native life for indigenous populations in the Northwestern U.S.⁴¹ A parallel concept reflecting the significance of the canoe would most likely be absent from interventions developed for other cultural groups outside of this region, complicating the adaptation of existing drug prevention interventions to indigenous populations of the Northwest. The only method to ensure that indigenous-based phenomena are accurately and appropriately integrated into prevention interventions is to utilize a culturally grounded approach toward prevention intervention development.

Community Engagement and Investment—The process of culturally grounded drug prevention development not only influences the validity of prevention interventions for indigenous youth, but also influences community engagement and investment in the intervention.^{34,42} Gosin et al.,³⁴ for example, describe how teachers and students were involved at all levels in the creation and implementation of the keepin' it REAL program, which had the effect of “fostering active participation” and “a definitive sense of ownership” of the program.^(p. 376) Culturally grounding drug prevention efforts is particularly important for indigenous populations, because it ensures that tribal or communal norms and values are reflected,^{41,42} thereby promoting overall community engagement and investment. Engaging indigenous communities in the process of drug prevention development is critical, because community engagement has been shown to impact the implementation and long-term adoption of interventions.^{43–44} Establishing the permanency of efficacious interventions within the community has recently become a federal priority,⁵ and is one of the best methods to ensure that the intervention makes a lasting public health impact.

Relevance of the Study

This study is both timely and relevant for several reasons. At the intervention level, the National Institutes of Health (NIH) have long debated the need to develop culturally grounded prevention interventions, versus culturally adapting existing interventions (K. Etz, PhD, oral communication, March 2012). However, because contemporary prevention science has largely adhered to an adaptational model for interventions with minority youth populations,^{30,46} there is a lack of information related to empirically driven, culturally grounded drug prevention development for these youth. This study fills this gap in the prevention intervention literature, and also attempts to move the existing prevention paradigm for minority youth populations beyond the sole focus on cultural adaptation. These goals are achieved through the description of the process of culturally grounded drug prevention development, including the necessary steps to design and pilot an efficacious intervention.

Further, while there is some research which suggests that existing drug prevention interventions are limited in addressing the behavioral health issues of indigenous youth,³⁵ there is a lack of information related to effective drug prevention principles or practices for these youth. Because of this, NIH has prioritized intervention research focused on indigenous populations, as evidenced by recent program announcements (e.g., PAR-11-346, entitled “Interventions for Health Promotion and Disease Prevention in Native American Populations”). This study directly addresses the lack of intervention research focused on indigenous populations, by providing a detailed case example of the process of culturally grounded prevention intervention development for one of these populations (Native Hawaiian youth). This study outlines one example of a collaborative community-university partnership, which is focused not only on prevention effectiveness, but also community engagement and sustained implementation. Arguably, the cost and time investments of developing a culturally grounded prevention intervention for these youth are justified,

because the resulting intervention has the potential to contribute to the development of an indigenous prevention science. This science would include core culturally specific intervention principles or practices that could be adapted to related indigenous and/or Pacific Islander youth populations.

PSCR: A Case Example of Culturally Grounded Drug Prevention Development

Promoting Social Competence and Resilience of Native Hawaiian Youth (PSCR) was a multi-year, interdisciplinary (ie, social work, psychology, sociology, and computer sciences), pre-prevention study funded by the National Institute on Drug Abuse (NIDA) which examined the social and cultural contexts of substance use for rural Native Hawaiian youth. Using mixed methods, the study identified and operationalized the social situations related to substance use specific to rural Hawaiian youth, as well as the types of resistance strategies that Hawaiian youth and adult community stakeholders endorsed in these situations. Based on this youth- and community-generated information, a novel drug prevention intervention is currently in the process of development and evaluation.

Method

Participants and Procedures—All research procedures for all years of the study were approved by the Institutional Review Boards at Hawai'i Pacific University and the University of Hawai'i at Mānoa. Further, in Years 1–3, research procedures were approved by the research and evaluation division of the State of Hawai'i Department of Education. The overall study employed a sequential mixed methods design, in which data from each year of the study informed the research design of the subsequent year (see Figure 1). This article primarily focuses on the methods and findings from Studies 1–4 of the PSCR pre-prevention study. Study 5 (Intervention Development) focuses on translating the research findings from the PSCR study into a culturally grounded drug prevention program for rural Hawaiian youth, and is currently under development.

In Study 1, a series of youth focus groups were conducted in order to identify and elucidate the environmental demands for substance use of rural Native Hawaiian youth. Five rural middle or intermediate schools across two islands participated in this phase of the study ($N = 47$). Youth were asked to elaborate on “problematic” situations related to substance use, paying specific attention to describing who offered substances (ie, the drug offerer), when and where these drug offers occurred (eg, after school, behind the auditorium), and under what conditions these offers occurred (eg, during a family party, hanging out with friends). Based on this qualitative data, an instrument was developed for Study 2 (The Hawaiian Youth Drug Offers Survey, or HYDOS⁴⁷), which operationalized drug-related problem situations related to drug use for rural Hawaiian youth (see Table 1 for sample items). These items were then assessed for social validity with a sample of rural Hawaiian and non-Hawaiian youth ($N = 249$). Sixty-two items focused on drug offer situations were included in the final version of the survey, which were subjected to test development and validation procedures. In Study 3, group activities and focus groups with middle or intermediate school youth ($N = 64$) were used to enumerate drug resistance strategies for a subset of drug offer situations included in the HYDOS. Youth participated in three distinct, interrelated activities —(1) an elicitation activity, in which youth were asked to generate as many types of responses as possible to selected drug-related problem situations on the HYDOS; (2) a rank ordering activity, in which youth were asked to order the elicited responses based on their social competence and effectiveness; and (3) a focus group discussion, in which youth were asked to justify the order of the responses established in the rank ordering activity. In the final year of the overall study (Study 4), community stakeholders (ie, older youth, social service agency providers, and educational staff; $N = 138$) completed an online survey, in order to validate selected drug offer situations and their matched set of refusal strategies (N

= 413). Stakeholders were asked to select the five best and worst responses to selected HYDOS drug offer situations developed by youth in Study 3.

Qualitative Analysis (Studies 1 and 3)—Qualitative data analysis followed a similar procedure in Studies 1 and 3. Focus group data were transcribed verbatim in both studies, and were systematically checked by at least two members of the research team to ensure data quality. Consistent with grounded theory procedures,⁴⁸ a series of open codes were established by the Principal and Co-Principal Investigators, and were entered into a qualitative research data analysis program (NVivo) to facilitate analyses. Inter-coder reliability and validity were established through use of coding “teams”, in which at least two members of the research team independently coded the same transcript. Discrepancies in the coding of narrative content were discussed, and narrative units in question were justified for inclusion or exclusion in the data set. Upon completion of data entry, conceptually complex codes were again examined and validated by the research team. Specific interrelationships between codes were examined within each study.

Quantitative Analysis (Studies 2–4)—In Study 2, exploratory factor analytic procedures were used to establish subscales on the HYDOS, and multivariate analyses were conducted to examine the influence of HYDOS subscales on drug use of Hawaiian youth. In Study 3, enumerated drug resistance strategies to selected HYDOS items were categorized by type of response (eg, “refuse”, “explain”), and descriptive statistics (eg, percentages) were calculated and examined based on the overall frequency and rank order of each response type identified by the youth. In Study 4, stakeholders’ mean scores were calculated and examined based on their rank ordering of the responses that were developed by the youth in Study 3. In addition, repeated measures analysis of variance was used to examine the variations in the endorsement of different strategies based on the drug offerers described in each of the selected HYDOS scenarios.

Results

In Study 1, youth described a broad typology of drug offer situations (direct versus indirect situations)⁴⁹ and drug offer responses (overt/confrontational versus covert/nonconfrontational approaches).⁵⁰ Data also highlighted the unique, complex relationships within rural Hawaiian communities, and how they intensified both risk and protection for youth substance use,⁵¹ and specific cultural factors which functioned as protection against substance use.⁵² In Study 2, exploratory factor analytic procedures indicated three distinct subscales—(1) Peer Pressure (9 items); (2) Family Drug Offers and Context (9 items); and (3) Unanticipated/Unexpected Drug Offers (6 items). Exposure to items on these subscales predicted increased use of substances for rural Hawaiian youth.⁵³ Secondary analyses further indicated that female Hawaiian youth were offered substances more frequently and found it more difficult to refuse substances compared with their male counterparts.⁵⁴ In Study 3, youth identified three main strategies used by rural Hawaiian youth in drug-related problem situations—“Refuse” (saying “no”), “explain” (providing real or fabricated rationales for refusal), and “angry refusal” (providing verbally aggressive responses for refusal).⁵⁵ “Refuse” and “Explain” were endorsed as the “best” strategies to use, while “angry refusal” was endorsed as the “worst” strategy to use in these situations. Explanations for refusal were particularly important in drug refusal, and the function of these explanations varied based on the type of drug offerer described within each of the situations discussed in the focus groups.⁵⁶ Similar to the youth participants in Study 3, the stakeholders in Study 4 endorsed “refuse” and/or “explain” as the “best” resistance strategies, and “angry” or “aggressive” refusal strategies as the “worst” strategies.⁵⁷ Stakeholders also differentiated their endorsement of resistance strategies for rural Hawaiian youth based on the drug offerer described in each situation. While “refuse” was endorsed as the most effective strategy in

situations involving drug offers from peers and cousins, “leave” (leaving the situation where drug use is occurring) was endorsed the most for situations involving drug offers from parents.³³

Discussion

This article describes the relevance of a culturally grounded approach toward developing substance abuse prevention for indigenous youth populations, and provides a case example of a multi-year project funded by the National Institute on Drug Abuse as the foundation for the development of this type of program. Similar to recently developed models of cultural adaptations of psychotherapeutic interventions,^{31,32} the culturally grounded approach presented in this article relied heavily upon community stakeholder input in the development of the pre-prevention content. However, because the prevention intervention to be developed for Hawaiian youth is based upon a less established body of literature compared to many adapted psychotherapeutic interventions, the process has involved significantly more time and resources, in order to both create drug prevention components and ground them in the social and cultural realities of indigenous youth.

Based on the findings from the PSCR study, NIDA-funded pilot/feasibility drug prevention research with rural Hawaiian youth is currently underway. Specifically, video-based components of a culturally grounded drug prevention intervention have been co-created with youth and adult stakeholders on Hawai‘i Island. Narrative scripts based on drug offer situations and resistance strategies described in the PSCR study have been developed, and these scripts have been adapted and validated by middle- and high-school aged rural Hawaiian youth ($N=74$).⁵⁸ The overall curriculum (ie, videos and associated prevention curricular components) have been aligned with the health components of the national common core standards in public education, and focus on the use of culturally relevant drug resistance skills. Resistance skills training has been found to be one of the more effective approaches toward youth drug prevention, particularly when conducted within a social influence model of prevention.^{59,60} Video components of the program reflect the complex ways in which Hawaiian youth utilize non-verbal behaviors and avoidant strategies (eg, “leaving”) to manage drug offers from parents, as well as appropriately assertive (rather than “angry” or “aggressive”) resistance strategies to deal with drug offers from other youth. The prevention curricular components (eg, interactive activities and exercises, and facilitated discussion questions) have been developed to promote critical thinking and decision-making around common and difficult drug related problems situations such as those depicted in the videos. Resistance strategies similar to those depicted in the program have been recently described for other indigenous youth populations,^{61,62} although these strategies have been prioritized differently compared with Native Hawaiian youth. In sum, the overall intervention features the video components as the core of the program, and activities and discussion questions have been created to complement the video components. The goal of the program is to facilitate effective and culturally appropriate skill building related to youth drug resistance in rural Hawaiian communities.

Community engagement and investment were promoted through PSCR collaborations and partnerships. Serendipitously, community leaders in rural Hawai‘i were motivated to find evidence-based interventions for youth substance use at the same time as the start of the PSCR study. This alignment of priorities set the stage for collaboration with several state- and county-level agencies, and these agencies eventually became actively involved in research activities and local and national dissemination efforts (eg, conferences, publications). Long-term relationships with key agency stakeholders not only promoted the validity and interpretation of PSCR research findings from year to year, but also assisted the university-based researchers in gaining access to important resources necessary to develop

the culturally grounded prevention videos. Overall, the university/community collaboration helped to clarify and mobilize the efforts toward drug prevention intervention development in rural Hawai'i.

Pre-prevention research related to culturally grounded drug prevention development for indigenous youth populations is an important component of an indigenous prevention science rooted in culture and region. Nonetheless, arguments related to the costs and time necessary to conduct this approach reflect important and valid considerations.²⁸ Part of the decision-making framework related to investing in the cost and time of developing culturally grounded drug prevention interventions (rather than adapting existing prevention programs) for specific youth populations should be based on the extent to which culturally grounded interventions have been developed with related youth populations within a specific culture and region. The PSCR study, for example, not only provided the foundation for drug prevention for an underresearched, high-risk youth population (Hawaiian youth), but it also has the potential to conceptually “anchor” culturally grounded drug prevention throughout the Pacific region. Subsequently, the adaptation of values, beliefs, and worldviews to other Pacific Islander populations and/or indigenous populations throughout the Pacific would be conceptually “closer” than adaptations from prevention programs built on Mainland U.S. ethnocultural groups. In the case of indigenous youth populations, there is an overall lack of evidence-based interventions that focus on their unique worldviews or experiences, necessitating more efforts in grounding versus adapting prevention programs until there are enough culturally grounded programs to form a foundation for an indigenous prevention science. At this point, core intervention components could be isolated and evaluated within flexible intervention frameworks.

Implications for Behavioral Health

Culturally grounded prevention interventions for indigenous youth populations have implications for applied behavioral health services in the schools and community. These interventions have been shown to be effective in reducing substance use in the schools,^{13,23} and have also been effectively adapted to community-based settings with high-risk youth.^{63,64} The impact of these interventions is particularly important for rural indigenous communities in Hawai'i, as these communities reside in areas that have been found to have service delivery problems and a lack of services related to substance abuse prevention or treatment.^{65,66} In the case of the PSCR study, the process of grounding prevention interventions in rural Hawaiian communities was participatory and collaborative. As a result these communities have had more control and input throughout the development of the program, compared with the option of selecting and adapting an existing drug prevention program. As such, implementation and adoption of the future program have been promoted throughout various stages of the pre-prevention process.

Conclusions

The focus of prevention science has largely been in the area of cultural adaptation of prevention interventions.^{20,46} While cultural adaptations are important to ameliorate ethnocultural health disparities and for the advancement of prevention science, the current lack of evidence-based prevention interventions for indigenous youth coupled with the cultural “uniqueness” of these youth suggest that a culturally grounded approach may be more appropriate to address their needs at this time. Future prevention research should focus on developing a collection of evidence-based, culturally grounded interventions for indigenous youth populations, which may provide the foundation for an indigenous prevention science. This body of prevention research could lend itself toward future, relevant cultural adaptations to related youth populations. However, until the development

of this body of research, culturally adapting existing prevention interventions for indigenous populations might be premature and/or contraindicated.

Acknowledgments

The research featured in this article was funded by the National Institutes of Health/National Institute on Drug Abuse (K01 DA019884; P.I.-Okamoto) and the Trustees' Scholarly Endeavors Program, Hawai'i Pacific University. Resources used for preparation of this article were funded by the National Institutes of Health/National Institute on Drug Abuse (R34 DA031306; P.I.-Okamoto).

References

1. Center for Disease Control and Prevention. Youth Risk Behavior Surveillance System (YRBSS)—2011 Data [Web page]. Center for Disease Control and Prevention; Web site. <http://www.cdc.gov/healthyyouth/yrbs/index.htm> [Accessed June 8, 2012]
2. Glanz K, Maskarinec G, Carlin L. Ethnicity, sense of coherence, and tobacco use among adolescents. *Annals of Behavioral Medicine*. 2005; 29(3):192–199. [PubMed: 15946113]
3. Glanz K, Mau M, Steffen A, et al. Tobacco use among Native Hawaiian middle school students: Its prevalence, correlates and implications. *Ethnicity & Health*. 2007; 12(3):227–244. [PubMed: 17454098]
4. Hawkins, EH.; Cummins, LH.; Marlatt, GA. Preventing substance abuse in American Indian and Alaska Native youth: Promising strategies for healthier communities. In: Marlatt, GA.; Witkiewitz, K., editors. *Addictive behaviors: New readings on etiology, prevention, and treatment*. Washington DC: American Psychological Association; 2008. p. 575–621.
5. Huang, LN.; Chapa, T.; Moy, E. Behavioral health disparities: Special federal initiatives and directives. Plenary presented at: The From Disparities Research to Disparities Interventions: Lessons Learned and Opportunities for the Future of Behavioral Health Services Conference; April 5–8, 2011; Arlington, VA.
6. Kim SS, Ziedonis D, Chen K. Tobacco use and dependence in Asian American and Pacific Islander adolescents: A review of the literature. *Journal of Ethnicity in Substance Abuse*. 2007; 6(3/4):113–142. [PubMed: 19842309]
7. Wallace JM, Bachman JG, O'Malley PM, et al. Gender and ethnic differences in smoking, drinking and illicit drug use among American 8th, 10th and 12th grade students, 1976–2000. *Addiction*. 2003; 98:225–234. [PubMed: 12534428]
8. Wong MM, Klinge RS, Price RK. Alcohol, tobacco, and other drug use among Asian American and Pacific Islander Adolescents in California and Hawaii. *Addictive Behaviors*. 2004; 29(1):127–141. [PubMed: 14667425]
9. Beauvais, F.; Trimble, JE. The effectiveness of alcohol and drug abuse prevention among American-Indian youth. In: Sloboda, Z.; Bukoski, WJ., editors. *Handbook of drug abuse prevention: Theory, science, & practice*. New York: Kluwer; 2003. p. 393–410.
10. Edwards C, Giroux D, Okamoto SK. A review of the literature on Native Hawaiian youth and drug use: Implications for research and practice. *Journal of Ethnicity in Substance Abuse*. 2010; 9(3): 153–172. [PubMed: 20737343]
11. Rehuher D, Hiramatsu T, Helm S. Evidence-based youth drug prevention: A critique with implications for practice-based contextually relevant prevention in Hawai'i. *Hawai'i Journal of Public Health*. 2008; 1(1):52–61.
12. National Institutes of Health. Interventions for health promotion and disease prevention in Native American populations. Webinar presented at the National Institutes of Health; December 8, 2011; Bethesda, MD.
13. Hecht ML, Marsiglia FF, Elek E, et al. Culturally grounded substance use prevention: An evaluation of the *keepin' it R.E.A.L.* curriculum. *Prevention Science*. 2003; 4(4):233–248. [PubMed: 14598996]
14. Bernal G, Jimenez-Chafey MI, Rodriguez MMD. Cultural adaptation of treatments: A resource for considering culture in evidence-based practice. *Professional Psychology: Research and Practice*. 2009; 40(4):361–368.

15. Smith TB, Rodriguez MD, Bernal G. Culture. *Journal of Clinical Psychology*. 2011; 67(2):166–175. [PubMed: 21105069]
16. Botvin GJ, Schinke SP, Epstein JA, et al. Effectiveness of culturally focused and generic skills training approaches to alcohol and drug abuse prevention among minority youths. *Psychology of Addictive Behaviors*. 1994; 8(2):116–127.
17. Botvin GJ, Schinke SP, Epstein JA, et al. Effectiveness of culturally focused and generic skills training approaches to alcohol and drug abuse prevention among minority adolescents: Two-year follow-up results. *Psychology of Addictive Behaviors*. 1995; 9(3):183–194.
18. Kumpfer KL, Alvarado R, Smith P, et al. Cultural sensitivity and adaptation in family-based prevention interventions. *Prevention Science*. 2002; 3(1):241–246. [PubMed: 12387558]
19. Ringwalt C, Bliss K. The cultural tailoring of a substance use prevention curriculum for American Indian youth. *Journal of Drug Education*. 2006; 36(2):159–177. [PubMed: 17153515]
20. Castro FG, Barrera M, Martinez CR. The cultural adaptation of prevention interventions: Resolving tensions between fidelity and fit. *Prevention Science*. 2004; 5(1):41–45. [PubMed: 15058911]
21. Marsiglia, FF.; Kulis, S. Diversity, oppression, and change: Culturally grounded social work. Chicago, IL: Lyceum Books; 2009.
22. Resnicow K, Braithwaite R, Ahluwalia J, et al. Cultural sensitivity in public health: Defined and demystified. *Ethnicity & Disease*. 1999; 9(1):10–12. [PubMed: 10355471]
23. Kulis S, Marsiglia FF, Elek E, et al. Mexican/Mexican American adolescents and *keepin' it REAL*: An evidence-based substance use prevention program. *Children & Schools*. 2005; 27(3):133–145. [PubMed: 21359122]
24. Marsiglia, FF.; Hecht, ML. *keepin' it REAL: An evidence-based program*. Santa Cruz, CA: ETR Associates; 2005.
25. Brody GH, Murry VM, Chen Y, et al. Effects of family risk factors on dosage and efficacy of a family-centered preventive intervention for rural African Americans. *Prevention Science*. 2006; 7(3):281–291. [PubMed: 16718542]
26. Brody GH, Murry VM, Gerrard M, et al. The Strong African American Families Program: Prevention of youths' high-risk behavior and a test of a model of change. *Journal of Family Psychology*. 2006; 20(1):1–11. [PubMed: 16569084]
27. Carter S, Straits KJE, Hall M. Project Venture: Evaluation of an experiential, culturally based approach to substance abuse prevention with American Indian youth. *Journal of Experiential Education*. 2007; 29(3):397–400.
28. Holleran Steiker LK, Castro FG, Kumpfer K, et al. A dialogue regarding cultural adaptation of interventions. *Journal of Social Work Practice in the Addictions*. 2008; 8(1):154–162.
29. Okamoto, SK. Culturally grounded drug prevention for Native Hawaiian youth: Next steps for the Promoting Social Competence and Resilience Project. Grand rounds lecture presented at the John A. Burns School of Medicine, University of Hawai'i at M noa; November 19, 2010; Honolulu, HI.
30. Lau AS. Making the case for selective and directed cultural adaptations of evidence-based treatments: Examples from parent training. *Clinical Psychology: Research and Practice*. 2006; 13:295–310.
31. Hwang W-C. The formative method for adapting psychotherapy (FMAP): A community-based developmental approach to culturally adapting therapy. *Professional Psychology: Research and Practice*. 2009; 40(4):369–377.
32. Nicholas G, Arntz DL, Hirsch B, et al. Cultural adaptation of a group treatment for Haitian American adolescents. *Professional Psychology: Research and Practice*. 2009; 40(4):378–384.
33. Okamoto S, Helm S, Kulis S, et al. Drug resistance strategies of rural Hawaiian youth as a function of drug offerers and substances: A community stakeholder analysis. *Journal of Health Care for the Poor and Underserved*. 2012; 23(3):1240–1253.
34. Gosin MN, Dustman PA, Drapeau AE, et al. Participatory action research: Creating an effective prevention curriculum for adolescents in the Southwestern US. *Health Education Research: Theory & Practice*. 2003; 18(3):363–379.

35. Dixon AL, Yabiku ST, Okamoto SK, et al. The efficacy of a multicultural prevention intervention among urban American Indian youth in the southwest U.S. *The Journal of Primary Prevention*. 2007; 28(6):547–568. [PubMed: 18058235]
36. Walters KL, Simoni JM, Evans-Campbell T. Substance use among American Indians and Alaska Natives: Incorporating culture in an “Indigenist” stress-coping paradigm. *Public Health Reports*. 2002; 117(1):S104–S117. [PubMed: 12435834]
37. Whitbeck LB, Hoyt DR, McMorris BJ, et al. Perceived discrimination and early substance abuse among American Indian children. *Journal of Health and Social Behavior*. 2001; 42(4):405–424. [PubMed: 11831140]
38. Mokuau N. Culturally based solutions to preserve the health of Native Hawaiians. *Journal of Ethnic & Cultural Diversity in Social Work*. 2011; 20(2):98–113.
39. Hishinuma ES, Chang JY, Sy A, et al. Hui M lama O Ke Kai: A positive prevention-based youth development program based on native Hawaiian values and activities. *Journal of Community Psychology*. 2009; 37(8):987–1007.
40. Morelli PT, Mataira PJ. Indigenizing evaluation research: A long-awaited paradigm shift. *Journal of Indigenous Voices in Social Work*. 2010; 1(2):1–12.
41. Thomas LR, Donovan DM, Sigo RLW, et al. The community pulling together: A tribal community-university partnership project to reduce substance abuse and promote good health in a reservation tribal community. *Journal of Ethnicity in Substance Abuse*. 2009; 8(3):282–300.
42. Okamoto SK, LeCroy CW, Tann SS, et al. The implications of ecologically based assessment for primary prevention with indigenous youth populations. *The Journal of Primary Prevention*. 2006; 27(2):155–170. [PubMed: 16534658]
43. Altman DG. Sustaining interventions in community systems: On the relationship between researchers and communities. *Health Psychology*. 1995; 14(6):526–536. [PubMed: 8565927]
44. Mayer, JP.; Davidson, WS. Dissemination of innovation as social change. In: Rappaport, J.; Seidman, E., editors. *Handbook of community psychology*. New York: Kluwer; 2000. p. 421–438.
45. Wandersman A. Community science: Bridging the gap between science and practice with community centered models. *American Journal of Community Psychology*. 2003; 31(3/4):227–242. [PubMed: 12866681]
46. Castro FG, Barrera M, Steiker LKH. Issues and challenges in the design of culturally adapted evidence-based interventions. *Annual Review of Clinical Psychology*. 2010; 6:213–239.
47. Okamoto SK, Helm S, Giroux D, et al. The development and initial validation of the Hawaiian Youth Drug Offers Survey (HYDOS). *Ethnicity & Health*. 2010; 15(1):73–92. [PubMed: 20013440]
48. Strauss, A.; Corbin, J. *Basics of Qualitative Research*. Newbury Park, CA: Sage; 1990.
49. Helm S, Okamoto SK, Medeiros H, et al. Participatory drug prevention research in rural Hawai’i with Native Hawaiian middle school students. *Progress in Community Health Partnerships: Research, Education, and Action*. 2008; 2(4):307–313.
50. Okamoto SK, Po’a-Kekuawela K, Chin CIH, et al. Exploring culturally specific drug resistance strategies of Hawaiian youth in rural communities. *Journal of Alcohol and Drug Education*. 2010; 54(1):56–75. [PubMed: 20730023]
51. Okamoto SK, Helm S, Po’a-Kekuawela K, et al. Community risk and resiliency factors related to drug use of rural Native Hawaiian youth: An exploratory study. *Journal of Ethnicity in Substance Abuse*. 2009; 8(2):163–177. [PubMed: 19459123]
52. Po’a-Kekuawela K, Okamoto SK, Nebre LRH, et al. ‘A’ole Drugs! Cultural practices and drug resistance of rural Hawaiian youths. *Journal of Ethnic & Cultural Diversity in Social Work*. 2009; 18(3):242–258. [PubMed: 20352019]
53. Okamoto SK, Kulis S, Helm S, et al. The social contexts of drug offers and their relationship to drug use of rural Hawaiian youth [in press]. *Journal of Child & Adolescent Substance Abuse*.
54. Okamoto SK, Kulis S, Helm S, et al. Gender differences in drug offers of rural Hawaiian Youths: A mixed-methods analysis. *Affilia: Journal of Women and Social Work*. 2010; 25(3):291–306. [PubMed: 20711491]

55. Okamoto SK, Helm S, Giroux D, et al. A typology and analysis of drug resistance strategies of rural Native Hawaiian youth. *The Journal of Primary Prevention*. 2010; 31(5–6):311–319. [PubMed: 20640939]
56. Okamoto SK, Helm S, Giroux D, et al. “I no like get caught using drugs”: Explanations for refusal as a drug-resistance strategy for rural Native Hawaiian youths. *Journal of Ethnic & Cultural Diversity in Social Work*. 2011; 20(2):150–166. [PubMed: 21625339]
57. Okamoto SK, Helm S, Delp JA, et al. A community stakeholder analysis of drug resistance strategies of rural Native Hawaiian youth. *The Journal of Primary Prevention*. 2011; 32(3–4):185–193. [PubMed: 21809110]
58. Okamoto SK, Helm S, McClain LL, et al. The development of videos in culturally grounded drug prevention for rural Native Hawaiian youth [in press]. *The Journal of Primary Prevention*.
59. McBride N. A systematic review of school drug education. *Health Education Research*. 2003; 18:729–742. [PubMed: 14654505]
60. Skiba D, Monroe J, Wodarski JS. Adolescent substance use: Reviewing the effectiveness of prevention strategies. *Social Work*. 2004; 49:343–353. [PubMed: 15281689]
61. Kulis S, Brown EF. Preferred drug resistance strategies of urban American Indian youth of the southwest. *Journal of Drug Education*. 2011; 41(2):203–235. [PubMed: 21888001]
62. Kulis S, Reeves LJ, Dustman PA, et al. Strategies to resist drug offers among urban American Indian youth of the southwest: An enumeration, classification, and analysis by substance and offeror. *Substance Use & Misuse*. 2011; 46(11):1395–1409. [PubMed: 21810074]
63. Goldbach JT, Holleran Steiker LK. An examination of cultural adaptations performed by LGBT-identified youths to a culturally grounded, evidence-based substance abuse intervention. *Journal of Gay & Lesbian Social Services*. 2011; 23(2):188–203.
64. Holleran Steiker LK, Goldbach J, Hopson LM, et al. The value of cultural adaptation processes: Older youth participants as substance abuse preventionists. *Child & Adolescent Social Work Journal*. 2011; 28(6):495–509.
65. Oliveria JM, Austin AA, Miyamoto RES, et al. The rural Hawai’i behavioral health program: increasing access to primary care behavioral health for Native Hawaiians in rural settings. *Professional Psychology: Research and Practice*. 2006; 37(2):174–182.
66. Weitzfelder BE, Engel CC, Gilbert FI. Substance abuse in Hawaii: Perspectives of key local human service organizations. *Substance Abuse*. 1998; 19(1):7–22. [PubMed: 12511803]

PSCR Research Design

Figure 1.

Table 1Representative Drug-Related Problem Situations from the HYDOS⁴⁷

Situation 4	Your older brother enters your bedroom, closes the door, and asks you if you'd like to smoke some weed.
Situation 9	On the nights that there is a full moon lots of the older kids like to go out at night because they can <i>kanikapila</i> and smoke marijuana and drink beer outside. Your older cousin invites you to come along.
Situation 14	Your dad, uncles, papa, and dad's friends are making pulehu in the yard, and you are with them. Your mom is inside the house. They are drinking a lot of beer, probably already drunk. Your dad offers you a beer.
Situation 22	One of your classmates always hangs around with this group of older kids and they smoke weed everyday. One day, your classmate asks you if you'd like to eat lunch with them.
Situation 29	You see some of your friends at the fair, so you go cruise with them for the night. Your friend has weed with her and wants to smoke. She offers you some.