

- **Multimodal Formats.** When possible, technology-based interventions should include a variety of teaching/modeling tools, take into consideration the “different reading/literacy capabilities of youth, even within grade levels,” and include print versions “for those who do not have computers.”
- **Shorter Length/Duration.** Participants noted that some technology-based interventions took an hour or more to complete or required youth to return to the clinic multiple times, and were concerned about student retention. On the whole, intervention activities should not require multiple clinic visits, and should be conscientious of possible “attention span issues.”
- **Cost.** The only cost concerns voiced by participants were in relation to text messaging interventions, which they thought might be problematic for some youth (depending on individual calling plans).
- **Maintaining Youths’ Interest and Attention.** Participants also noted that “there are a lot of interesting sites on the Internet that teens frequent already.” Online interventions will have to be “as good as the technologies that teens are already using, or teens may not use them.”

(It should be noted that a mix of teachers, parents, and health educators participated in these meetings; their comments were not collected in such a way that they could be stratified by informant type.)

When asked about the potential utility of various intervention strategies, particularly in relation to their own communities’ programs, resources, and needs, tribal partners used an anonymous automated response system to indicate that computer- or Internet-based skill-building tools would be most useful (91%) for their community, followed by informational Web sites or social networking sites (82%), electronic assessment or diagnostic tools (81%), services that would allow teens and young adults to order STD test kits or condoms online (81%), and programs that offered youth live instant message or text counseling with an expert (74%). Participants indicated that they would prefer interventions that could be administered by someone at the regional level, by a local health educator, or, if appropriate, by the youth themselves. Few felt that it would be highly problematic for them or their tribe to deliver a computer-based intervention (13%), an Internet-based intervention (17%), or an intervention requiring a TV/DVD (13%). More people expressed concern, however, about delivering interventions via cell phone (36%).

DISCUSSION

While data from the *Native Youth Media Survey* offered insight into which technologies were most often used by AI/AN youth, the literature review and additional CBPR activities provided critical information needed to select strategies that aligned to the priorities and organizational capacities of the Northwest tribes (Craig Rushing, 2010). The literature review provided partners with a better understanding of the types of technology-based interventions that were possible, and the skills and resources that would be needed to implement them. Partners discussed the effectiveness of various approaches, and design features that have been shown to maximize behavioral impacts.

CBPR processes also took into consideration other factors that have been shown to affect intervention effectiveness and sustainability, including the availability of staff with appropriate skills and training, the availability of requisite space and equipment, the perceived merits and drawbacks of available intervention modalities and settings, and the availability of current and recurring funds to implement selected interventions, as well as more nuanced Indigenous knowledge about Northwest AI/AN communities (Center for Substance Abuse Prevention, 2009). CBPR activities substantially improved the intervention alignment process by giving insight to tribal values and priorities, and potential capacities and constraints affecting participating tribes.

CBPR activities also enhanced the interpretation of qualitative and quantitative data collected by the project, employing both Western and cultural lenses. For example, while cell phones were the media technology most frequently used by Northwest Native youth (according to survey results), youth, parents, and health educators expressed much less interest in phone-based interventions than they did in Internet- or video-based approaches. This apparent divide between youths' current technology use and reported intervention priorities may stem from the strong preference (expressed by both survey respondents and CBPR partners), that youth receive sexual health information from a trusted adult. Role modeling, experiential learning, and storytelling are teaching tools traditionally valued by AI/AN communities, and are highly dependent upon human interaction (Cajete, 2008; Goodluck, 2002). Compared to the other strategies offered and discussed, rote text messaging services (that often lack modeling, interaction, and visual cues) may have felt less congruent with traditional teaching modalities.

CBPR participants were particularly concerned that some technology-based interventions might unintentionally reduce communication or fail to support needed follow-up with youth. This concern highlights the importance of using technology-based interventions to enhance, rather than replace, traditional sources of health information, including health professionals and family members (Fox & Jones, 2009). Other critical insights gained through CBPR included the importance of empowering Native youth to get involved in their own health and well-being, while also addressing the deeper social and emotional conditions that contribute to their disproportionate risk-taking.

CBPR strategies increased our understanding of the ethnographic culture of AI/AN youth, and the social and environmental contexts in which they live. Participants pointed out that Native youth “culture” is not solely defined by race/ethnicity. Like other teens and young adults, Native youth identify with and reflect multiple identities (e.g., athletes, skaters, nerds, gangsters, straight/two-spirit/lesbian/gay/bisexual/transgender/questioning, etc.). Northwest Native youth did express a greater preference for accessing sexual health information on Web sites containing Native-specific content than on sites targeting all U.S. youth, but to reflect their full lived experience, interventions targeting AI/AN youth should portray a range of adolescent and cultural identities.

Like all research, this study had several strengths and limitations worth noting. These findings represent data from the Pacific Northwest and cannot be generalized to other regions or individual tribes. Many of the youth who participated in CBPR feedback sessions were involved in tribe- or school-sponsored health and wellness activities, and may have reported higher levels of interest than typical youth. The continuity of our coalition membership was hampered by our inclusion of participants from a geographically disbursed three-state region. This challenge was met by rotating meetings throughout the Northwest, covering travel expenses for tribal participants, and by iteratively reviewing project data and refining recommendations at each subsequent meeting. Fortunately, the project was strengthened by the support of the Northwest tribes, who repeatedly expressed interest in the research subject and its findings. Collecting data and feedback from multiple tribes helped ensure that resulting recommendations and priorities reflected a wide spectrum of perspectives and experiential realities. Guided by CBPR values, this process took active steps to address potential validity threats associated with analyzing data using only a Western interpretive lens.

CONCLUSION

Like all behavioral interventions, to be truly effective, technology-based sexual health interventions must address the core risk and protective factors associated with teen pregnancy and STDs, cultivate individual skills, and foster frequent and repeated use. If designed properly, youth-driven multimedia technologies could achieve these goals, while reflecting traditional and contemporary AI/AN culture, values, teachings, and experiences. To meet everyone’s needs, age- and gender-appropriate sexual health information should be made available in a variety of formats, through a variety of channels. This CBPR study suggests that integrated, multimedia approaches offer the best opportunity to reach the greatest number of Native youth in the Pacific Northwest. The NPAIHB and Northwest tribes are now using this data to inform the development of several technology-based interventions targeting AI/AN teens and young adults.

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FOOTNOTE

¹ Hypertext: text displayed on an electronic device with links to other text, tables, or images that can be accessed immediately.

ACKNOWLEDGEMENTS

We would like to thank the tribes of Idaho, Oregon, and Washington for their public health leadership, and their ongoing support of Project Red Talon. All credit in this undertaking should be given to our tribal partners, whose impassioned commitment to AI/AN health has made this project a success. We also thank John Spence and members of the Portland Area IHS IRB for their constructive reviews of this article.