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We would like to extend special thanks to all the peer reviewers who read drafts of the following articles! Your thoughtful comments and recommendations were invaluable, and this special issue would not have been possible without you.

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NOTE ABOUT NAMING CONVENTIONS USED IN THIS ISSUE

The many authors and organizations represented in this issue use a variety of terms and naming conventions in their work (e.g., Tribal and tribal; Indigenous and indigenous; STD and STI). The journal staff has tried to accommodate these preferences as much as possible, which accounts for the minor differences in terminology between some articles. Terms that may not be familiar to all readers are written out the first time they are used in each article, and are abbreviated thereafter.
WE WILL BE KNOWN FOREVER BY THE TRACKS WE LEAVE: RISING UP TO MEET THE REPRODUCTIVE HEALTH NEEDS OF AMERICAN INDIAN/ALASKA NATIVE YOUTH

Lori de Ravello, MPH, Scott Tulloch, BS, and Melanie Taylor, MD, MPH

BACKGROUND

Many U.S. adolescents of all races/ethnicities engage in multiple behaviors that increase their risk for poor reproductive health outcomes (Eaton, 2010; Everett Jones, Anderson, Lowry, & Conner, 2011; Ramisetty-Mikler & Ebama, 2011; Rutman, Park, Castor, Taulii, & Forquera, 2008). American Indian and Alaska Native (AI/AN) youth are disproportionately affected by poor reproductive health outcomes, including high rates of sexually transmitted diseases (STDs) and teen pregnancy. Peer-reviewed literature on AI/AN reproductive health issues is sparse and often not generalizable to all AI/AN because of small and geographically specific study populations. In the limited studies that have been conducted, some have shown high rates of STDs and teen pregnancy among AI/AN adolescents may result from a lack of familial support, a history of sexual and physical abuse, and early sexual debut (Palacios & Kennedy, 2010); alcohol and substance use and low and inconsistent condom use (Kaufman, 2006); and multiple sex partners (Marsiglia, Nieri, & Stiffman, 2006).

The Journal of American Indian and Alaska Native Mental Health Research disseminated the call for submissions for this special issue through its extensive formal and informal networks. The journal received 11 submissions; 9 of those are included in this special issue of the journal and 2 will appear in a later issue. No submission was rejected. Authors were instructed to attain necessary approvals prior to submission. Every author was assigned a mentor to help polish and finalize the manuscripts; the articles were reviewed by two external reviewers with expertise in the manuscripts’ subject areas.

We hope that this special journal issue on sexual risk behaviors and assets among AI/AN youth will lead to increased attention and efforts to meet the health care needs of Native youth and that the tracks that we leave will lead to the elimination of health disparities.

**STD rates among AI/AN youth are among the highest in the country.** In 2009, non-Hispanic AI/ANs had the second highest rates of STDs in the U.S.; compared to non-Hispanic White (NHW) youth, they were 4.5 times as likely to be diagnosed with chlamydia, more than three times as likely to be diagnosed with gonorrhea, and twice as likely to be diagnosed with primary or secondary
Between 2000 and 2004, young people (15 to 24 years old) accounted for 68% of AI/AN chlamydia cases and 60% of AI/AN gonorrhea cases (Kaufman, 2007). For all U.S. races/ethnicities, female chlamydia rates are higher than those of males; the higher rate among females is mostly due to the far greater number of females screened for chlamydia (CDC, 2010). In 2009, chlamydia rates for NHW females were 3.2 times higher than the rates for NHW males; chlamydia rates for non-Hispanic AI/AN females were 3.8 times the rates for non-Hispanic AI/AN males (CDC, 2010). There are striking geographic differences in STD rates among AI/AN, which are especially pronounced among AI/AN adolescent females (see Figure 1).
HIV cases among AI/ANs are undercounted because of low levels of HIV screening. AI/ANs—especially those living in rural areas—may be less likely than people of other races/ethnicities and urban AI/ANs to seek HIV testing because of concerns about confidentiality in small, close-knit communities, where someone seeking HIV testing may encounter a relative or an acquaintance at the local health clinic (CDC, 2007). Furthermore, there are considerable data limitations concerning HIV/AIDS among AI/ANs. For example, several states with large AI/AN populations have not consistently conducted or reported HIV surveillance data to the Centers for Disease Control and Prevention, and AI/ANs in some states are often racially misclassified (CDC, 2007). Although HIV/AIDS data for AI/ANs are sparse, in 2007, non-Hispanic AI/AN youth younger than 25 years accounted for 19% of new HIV/AIDS diagnoses among AI/ANs, compared to 14% nationwide (CDC, 2011). Because of late diagnosis and poor access to specialized care, AI/ANs have one of the lowest HIV/AIDS survival rates of any racial/ethnic group, with just one in four living more than three years after diagnosis (CDC, 2007).

The teen birth rate among AI/ANs is on the rise. After more than a decade of decline, the teen birth rate increased 12% among AI/ANs between 2005 and 2007—more than for any other race/ethnicity (Hamilton, 2010). Today, one fifth of non-Hispanic AI/AN girls give birth before their 20th birthday (Hamilton, 2010). As with STDs, there is considerable geographic variation in AI/AN teen pregnancy rates (Wingo, 2011; Figure 2.) Furthermore, many Native teens and women enter prenatal care late in pregnancy. In 2007, among those who delivered live births, 30.1% of Native mothers versus 16.2% of all mothers entered prenatal care late or had no prenatal care (Kaiser Family Foundation, 2007). In addition, Native mothers experience higher rates of low birth weight, preterm birth, and post-neonatal and infant mortality (including sudden infant death syndrome, or SIDS) than other mothers of other races/ethnicities (Alexander, Wingate, & Boulet, 2008; IHS, 2009).
AI/AN sexual minorities experience more physical and sexual abuse. Very few studies have been published on the health status of Native gay, lesbian, bisexual, transgender, and questioning youth (Barney, 2003). In one study, AI/AN boys who self-identified as gay/bisexual were significantly more likely than boys who self-identified as heterosexual to report sexual abuse (17.8% vs. 3.4%, \( p < .001 \)), physical abuse (26.7% vs. 9.6%, \( p < .001 \)), and running away (23.3% vs. 13.4%, \( p < .001 \); Saewyc, Bearinger, Blum, & Resnick, 1998). In that same study, girls who self-identified as lesbian/bisexual were significantly more likely than self-reported heterosexual girls to report running away (32.0% vs. 21.4%, \( p < .05 \)), and more often reported sexual abuse (42.4% vs. 31.1%, not significant [NS]) and physical abuse (51.5% vs. 33.6%, NS). Although some of the differences from the latter study were not significant, the proportion of AI/AN girls reporting sexual and physical abuse is striking (Saewyc et al., 1998). In a different study of 5,600 AI/AN male adolescents conducted in Minnesota, gay males were more likely than heterosexual males to report having been physically abused (17.2% vs. 7.5%, \( p < .01 \)), sexually abused (13.3% vs. 2.4%, \( p < .001 \)), depressed (35.1% vs. 14.0%, \( p < .001 \)), and having attempted suicide (23.2% vs. 11.1%, \( p < .01 \)); additionally, gay males were less likely to have had a physical examination (71.1% vs. 88.3%, \( p < .001 \); Barney, 2003).
AI/AN youth initiate alcohol and drug use early and use is high. Alcohol use is high among all youth in the U.S.; according to the Youth Risk Behavior Surveillance System (YRBSS), in 2009 74.0% of non-Hispanic AI/AN high school students had ever drunk alcohol, compared to 73.8% of White students, 67.6% of Black students, and 76.6% of Hispanic students (CDC, n.d.). Having ever used marijuana is also similar for youth of all races: 50.8% of non-Hispanic AI/AN students, 35.7% of White students, 41.2% of Black students, and 39.9% of Hispanic students (CDC, n.d.). However, compared to students of other races/ethnicities, non-Hispanic AI/AN students were more likely to initiate alcohol and drug use before age 13 (36.0% of non-Hispanic AI/AN students used alcohol before age 13 compared to 18.1% White students, 24.9% of Black students, and 27.1% of Hispanic students; 18.1% of non-Hispanic AI/AN students used marijuana before age 13 compared to 5.7% of White students, 10.2% of Black students, and 10.3% of Hispanic students; CDC, n.d.).

EFFORTS TO MEET THE NEEDS OF AI/AN YOUTH

Many efforts across the country are building on the assets and strengths of Native culture to improve the reproductive health of these youth; commonly, these efforts are locally or regionally focused. They exhibit a wide range of infrastructure and capacity to evaluate and disseminate successes beyond their respective communities. This special issue highlights some of these innovative interventions and promising research efforts to identify and address sexual risks and assets of Native youth.

The prevention efforts described in this special issue focus on identifying the priority reproductive health needs of Native youth, describing key strategies to develop effective and appropriate prevention interventions to reach this population, and developing messages that are youth-focused and culturally relevant to meet their unique and varied needs.

Identifying the Reproductive Health Needs of Youth

- The Alaska Native Tribal Health Consortium conducted a series of community-based focus groups with Alaska Native youth to better understand the knowledge, attitudes, and beliefs of rural adolescents and communities regarding STD, HIV/AIDS, and unplanned pregnancy and to identify the best methods to educate and facilitate behavior change.
- Sage Associates, Inc. surveyed Native girls from many different Tribes who were attending a residential school and who participated in BLING (BeLieving In Native Girls), a juvenile delinquency and HIV prevention curriculum. Sage found the participants to have considerable mental health and social concerns, including having poor critical
thinking, coping, communication, and relationship skills; high levels of depression; high levels of current sexual activity and early sexual debut; and high rates of alcohol and drug use.

- The Minnesota Indian Women’s Resource Center describes its program for Native girls who have been victims of human trafficking and commercial sexual exploitation. Although data are scarce, several studies strongly suggest that this population is significantly over-represented in the sex trade.

- The Fort Peck Men’s Sexual Health Study is a community-based participatory research (CBPR) project that explores the extent of knowledge, attitudes, and beliefs about sex, intimate relationships, social/emotional health influence, and sexual and reproductive health among young men living on the Fort Peck Indian reservation in northeast Montana.

Designing Creative Strategies to Reach Youth

- Project Red Talon describes CBPR activities used to identify and review technology-based sexual health interventions for youth and the participating Native youths’ recommendations for optimizing these applications.

- The Wyoming Health Council describes its CBPR project for HIV prevention with a Native youth group on the Wind River Indian Reservation in Wyoming.

Developing Messages that Resonate with Youth

- A group of Navajo health educators shares the community-based development process and foundational concepts of the Tools for Iina (Life) curriculum, designed for youth in grades four through six to address their health, relationships, identity, and sense of the future, using core concepts from Diné oral tradition.

- Sacred Beginnings is a CBPR project designed to improve preconception health among Native adolescent women on a Northern Plains reservation. It examines the effectiveness of a culturally appropriate intervention developed by Tribal community members and elders.

- The Circle of Life is an HIV prevention intervention designed for Native youth. The content is based on Native learning theories embodied by the medicine wheel and emphasizes skills development through symbols, stories, and ways of learning familiar to Native youth.
COMMUNITY INVOLVEMENT

One theme woven throughout the articles in this issue is the value of community input and involvement in research efforts. While the level and extent of community involvement varied by project, many used aspects of a community-based participatory research (CBPR) approach. CBPR—or Tribal participatory research (TPR)—approaches are seen as particularly respectful of research partnerships with Tribes; using TPR, research can be responsive to community needs, culturally appropriate, and strengths-based while paying heed to past transgressions against Tribes on the part of researchers (Thomas, Rosa, Forcehimes, & Donovan, 2011). Some important tenants of applying CBPR/TPR approaches in Tribal settings include: acknowledging historical experience with research and researchers, recognizing Tribal sovereignty, differentiating between Tribal and community membership, understanding Tribal diversity and its implications, plan for extended timelines, recognize key gatekeepers, prepare for leadership turnover, interpret data within the cultural context, and utilize Indigenous ways of knowing (LaVeaux & Christopher, 2009).

CONCLUSIONS/RECOMMENDATION

The editors and authors of this special issue are proud to share these innovative efforts to address adolescent reproductive health from across Indian Country. More support, training, technical assistance, and capacity building are needed to engage the community in meaningful ways, develop and implement behavioral interventions, assess the effectiveness of interventions through evaluation, and disseminate the findings to others who may benefit from them.

Other reproductive health interventions and research projects are taking place across the country to address the reproductive health needs of Native youth. Some of these, such as RESPECT, Native Voices, Native Students Together Against Negative Decisions (STAND), and It’s Your Game . . . Keep it Real, are evidence-based interventions that are currently being adapted for AI/AN youth. In the small and close-knit community of researchers and public health practitioners who work with Native youth, there is already a substantial amount of inter-Tribal dissemination, sharing, and informal technical assistance. This form of sharing and exchange is powerful despite being constrained by resources and data. To build a stronger foundation for this work, we need improved data collection and reporting among AI/ANs and greater inclusion of AI/ANs in national, state, and county data collection systems. Establishing an evidence base—and rethinking what evidence means for AI/ANs—is another crucial step toward promoting programs that work for this population. Although AI/ANs make up a small percentage of the U.S. population, they are disproportionately affected by health disparities.
Our hope is that the research and prevention efforts described in this special journal issue will lead to increased attention and efforts to meet the health care needs of Native youth and that the tracks that we leave will lead to the elimination of health disparities.

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REFERENCES


**FOOTNOTE**

1 Race/ethnicity data from the 2009 Youth Risk Behavior Survey are presented only for non-Hispanic Black, non-Hispanic White, and Hispanic students (of any race); the numbers of students from other racial/ethnic groups were too small for meaningful analysis.

**DISCLAIMER**

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
ALASKA NATIVE AND RURAL YOUTH VIEWS OF SEXUAL HEALTH:  
A FOCUS GROUP PROJECT ON SEXUALLY TRANSMITTED DISEASES,  
HIV/AIDS, AND UNPLANNED PREGNANCY

Jessica D. Leston, MPH, Cornelia M. Jessen, MA, and Brenna C. Simons, PhD

Abstract: Background: The disparity in rates of sexually transmitted diseases (STDs), HIV/AIDS, and unplanned pregnancy between Alaska Native (AN) and non-AN populations, particularly among young adults and females, is significant and concerning. Focus groups were conducted to better understand the knowledge, attitudes, and beliefs of rural Alaska youth (both AN and non-AN) and communities regarding STDs, HIV/AIDS, and unplanned pregnancy and to determine the best methods to educate and facilitate behavior change in AN youth regarding these issues. Methods: A convenience sample of AN and rural youth (n = 105) from 5 communities in Alaska, ages 15-24 years, participated in 21 focus groups. Focus group participants were divided by sex and age. We assessed themes related to knowledge, attitudes, and beliefs about STDs, HIV/AIDS, and unplanned pregnancy, as well as perceptions of how youth prefer to learn about sexual health issues. Results: The major themes identified were: (1) sexual health is not viewed only in relation to a physical act; (2) there is a basic understanding of sexual health, but youth have a lot of unanswered questions pertaining to STDs and HIV/AIDS; (3) sexual health messages should be delivered via the Internet and school; (4) youth want to hear messages promoting STD/HIV testing and condom use; (5) easier access to condoms is needed; (6) alcohol and drug use affect sexual behavior and risk taking; and (7) issues of confidentiality and embarrassment affect health care-seeking behaviors for sexual health issues. Conclusions: One of the fundamental principles of public health practice is community participation, which asserts that success in achieving change is enhanced by the active participation of the intended audience in defining their own high-priority solutions. Our findings—driven by youth themselves—are critical in designing and implementing future sexual health interventions and promoting greater community involvement and acceptance.
INTRODUCTION

Young adults, regardless of race, are at a significantly greater risk for sexually transmitted diseases (STDs) compared to the general population due to high incidence of unprotected sex, biological vulnerability to infection, frequent partner changes, and difficulty accessing health care (Centers for Disease Control and Prevention, 2002). Alaska has had the highest or second highest rate of chlamydia in the U.S. since 2000 (Cecere, Senft, & Jones, 2011a) and, in 2010, Alaska had the third highest rate of gonorrhea in the nation (Cecere, Senft, & Jones, 2011b). There are discernible disparities in the rates of STDs between the Alaska Native (AN) population and non-AN populations (Gesink Law, Rink, Mulvad, & Koch, 2008; Kaufman, Shelby, et al, 2007; Wong, Swint, Paisano, & Cheek, 2006). Of the total chlamydia and gonorrhea cases in Alaska in 2010, 47% and 74% were in the AN population, respectively; 68% and 58% were under the age of 25, respectively (among the total AN and non-AN population; Cecere, Senft, & Jones, 2011a, b). In Alaska, the AN teen birth rate (age 15-19) was 82.7 per 1,000 in 2008, compared to a rate of 30 per 1,000 in the non-AN population (Sophie Wenzel, personal communication, May 16, 2011). AN people also are overrepresented in statewide HIV infection incidence (Boyette & Jones, 2011).

The disparity in STD and teenage pregnancy rates, and the continuing risk of HIV infection in the AN population, particularly among young adults, are significant and concerning. However, there are limited published data on the contribution of these factors to sexual health and STD transmission in the AN population. This article reports results from a qualitative research project involving AN and rural youth concerning STDs, HIV/AIDS, and unplanned pregnancy.

A fundamental principle of successful public health practice is community participation, which asserts that success in achieving change is enhanced by the active participation of the intended audience in defining its own high-priority solutions. The objective of this study was to discover what AN and rural youth knew about STDs, HIV/AIDS, and unplanned pregnancy and to determine the best methods to educate and facilitate behavior change in AN and rural youth regarding these issues. The results of this study were critical in the development of appropriate sexual health promotion methods for rural Alaska youth.

METHODS

A convenience sample of AN and rural participants was recruited from 5 rural communities in three distinct geographic areas of Alaska, each served by a regional tribal health organization. The study protocol was approved by the Alaska Area Institutional Review Board, the Alaska Native Tribal Health Consortium Health Research Review Committee, and respective regional tribal
ethics committees. All but one of the communities involved in the study were located off the road system and were accessible only by small aircraft, with seasonal access by snowmobile or boat. Communities ranged in populations from 400 to 8,800.

The research questions were: (1) What do AN and rural youth, community leaders, health care workers, and elders know, believe, and think about STDs, HIV/AIDS, and unplanned pregnancy? (2) Which types of public health programs are most attractive to AN and rural youth, community leaders, health care workers, and elders? (3) Which types of public health programs would encourage participation from AN and rural youth? (4) What key public health program strategies would initiate awareness in AN and rural youth and encourage “readiness” to learn more about STDs, HIV/AIDS, and unplanned pregnancy? (Of note, this paper only reflects the findings from focus groups with youth. Results from in-depth interviews with community stakeholders will be presented elsewhere at a later date.)

Focus group and in-depth interview participants were recruited by flyers posted in schools, clinics, groceries, and laundromats, and by public announcements on shortwave radio. In each community, attempts were made to include focus group participants who met the following criteria: American Indian/AN or otherwise eligible for care at the local tribal health clinic (in many areas non-ANs are eligible for services at tribal clinics because the clinics are the only health care facilities available); between the ages of 15 and 24 years; able to give informed consent; and, if under the age of 18, having a valid consent form signed by a parent/guardian. Community leaders, church leaders, health care workers, teachers and school employees, and elders were recruited to participate in in-depth interviews. Consent was obtained from all participants, and parental/guardian consent was obtained for minors (those under the age of 18). Each participant was reimbursed for their time and/or any travel expenses with a $25 pre-paid credit card.

The research team conducted 21 focus groups in five rural communities. Focus groups took place in schools and senior centers and lasted 75-90 minutes. Moderators facilitated discussion using a guide that was tested prior to use in the study (Appendix A). The guide was tested in pre-study focus groups to ensure ease of use, comfort level, and validity of questions with AN youth. Focus groups were digitally audio-recorded and professionally transcribed. Resulting transcripts were analyzed for themes and content using the qualitative computer software Atlas Ti (www.atlasti.com). Focus groups were conducted separately for males and females and stratified into old (19-24 years) and young cohorts (15-18 years).

Overall, 105 AN and non-AN rural youth ranging in age from 15-24 years participated. Participating youth self-selected and thus might not be representative of all youth in the community. No general differences were found between the older and younger cohorts, except that most participants in the older cohort already had children.
RESULTS

MAJOR THEMES

Overall perception of sexual health: Sexual health does not only relate to the physical

Focus group participants relayed a comprehensive understanding of the term sexual health. Some of the themes surrounding sexual health related to physical sexuality (being sexually active, how sexually active one is), communication with partners, and the feeling of “scary” (because of sex being a taboo subject, something that is not talked about and that can lead to negative consequences). Concepts related to sexual health included being educated, knowing the effects of alcohol/drugs, understanding the possibility of pregnancy, and having an awareness of specific STDs (from crabs, to warts, to gonorrhea, to HIV), as well as being healthy. Questions about sexual health triggered responses regarding relationships, condoms, STD testing, drinking, teenage pregnancy, and STDs in general. Although focus group participants were not specifically asked to define sexual health, they were asked what thoughts or feelings the topic of sexual health brought up.

I think sexual health is just being educated about basically what can happen when you are sexually active, and how to prevent things and just how to be careful.

Embarrassment: Issues of confidentiality and privacy affect health care-seeking behaviors for sexual health issues and condom-seeking behavior

Embarrassment was brought up often as a theme. Being embarrassed was related to clinic visits for STD/HIV checkups and testing, or for obtaining condoms. The reason appears to be concern about confidentiality and privacy when seeking help or care for sexual health issues. Both confidentiality and privacy were related to the fear of people finding out about clinic visits for sexual health care and the belief that people “don’t talk about it (sex).”

Confidentiality and Privacy

And another thing is our clinic is so small that you can hear all the conversations and people knowing what you’re going there for. It kind of makes you feel like you have to be more quiet.

I don’t think anyone would go to the health aides and ask them because they’re maybe scared to come forward and try to ask about that stuff.
Condoms

I’ve had a friend who asked me to get them (condoms) from the clinic because she’s too embarrassed to go.

I don’t know very many teens that want to walk into the store, grab a pack of condoms. You know, go down to the store, grab some condoms, go up to the front desk and go to the check stand...

Preferred methods of receiving information: Sexual health messages should be delivered via the Internet and schools

Overwhelmingly, the Internet, school, and television were cited as the main platforms youth wanted to go to in order to receive information about sexual health. Other potential sources mentioned by focus group participants were experts from outside their community and parents. Village clinics were also mentioned as potential places to go to get sexual health information.

Well, a lot of people are like they don’t want to go and ask somebody. They get embarrassed or something. So I think the Internet’s a good way because not everyone’s knowing what you’re doing. So you could look it up. You could learn this stuff and no one has to know you’re doing this and you don’t get embarrassed. It makes it a lot easier for people who have questions but are too embarrassed to ask people these questions.

To get the awareness out I think they should do a lot more in the schools because teenagers spend most of their time in school...

Preferred intervention messages: Youth want to hear messages promoting STD/HIV testing and condom use

Focus group participants mentioned that STD/HIV testing, condom use, waiting to have sex, abstinence, and having fewer sexual partners are all messages that should be conveyed to youth. They did not want to just hear one message; rather, they wanted a multitude of messages reflecting the various options available that will help them remain healthy.

Tell them to use a condom at all times, tell them to get tested and make sure it (chlamydia) doesn’t stay in our community. Don’t need that stuff around here.
If you tell kids not to do anything, you know they’re going to do it. So just tell them to be safe and promote condom using, and other things to prevent pregnancies or diseases.

Just be safe man: Use a condom every time.

Top thing is use a condom. That’s like the biggest thing, the most important thing.

Knowledge about sexual health: There is a basic understanding of sexual health, but youth have a lot of unanswered questions pertaining to STDs and HIV/AIDS

Focus group participants had many questions and exhibited a desire for increased knowledge, especially about STDs, HIV/AIDS, symptoms, and available treatments. There was a general sense of “Nobody is talking to us.”

Is there a shot or medicine that you can get for you not to get it (chlamydia)?

Can you cure chlamydia with antibiotics?

What does it do to you and like all the symptoms (chlamydia)?

Who brought it to this place? Or who brought it to Alaska (chlamydia)?

I think that especially teenagers should get so much more information than they are getting now about the outcomes of some of the things, like pregnancies and then the long-term diseases like STDs and stuff. I think that it’ll probably change how people think about having unprotected sex. And it might make the girls—if the guy doesn’t—if he wants to have sex, and he doesn’t have a condom, to make the girl stand up and say “no” because she knows that she could be infected or get pregnant.

Alcohol and drugs

Focus group participants also recognized the impact of alcohol and drug use on sexual behavior and risk taking.

Because of drugs, like when you are drinking and stuff, you don’t know what you are doing.
Kids get wasted and then don’t think about a condom, and they wake up the next day, and they’re like, “Oh, she’s pregnant. That sucks. My life’s ruined.”

I think that the most concern is people drinking alcohol and getting too drunk, and don’t even remember that they messed around or something. And it’s just that people should just be careful and try not to drink that much.

Sexual health priorities
Male and female participants’ themes were largely similar throughout the focus groups. Both genders saw the Internet and school as good places for getting sexual health information, recognized the importance of getting tested, understood the direct effects of drinking on sexual behaviors and choices, were concerned about the effect of STDs on the health of unborn children (i.e., about giving a disease to a fetus, general health of mother and baby), and wanted to know about the symptoms of and treatments for STDs. However, female participants were more concerned about teenage pregnancy than their male counterparts. Table 1 breaks down the top themes in focus groups for females and males.

| Sexual health information should be delivered via the Internet | Sexual health information should be delivered via the Internet |
| Sexual health information should be delivered in the schools | Sexual health information should be delivered in the schools |
| We need to hear more messages about getting tested | We need to hear more messages about getting tested |
| Drinking and drugs affect sexual risk taking | Drinking and drugs affect sexual risk taking |
| Unease of getting sexual health information and health care at the local clinic | Unease of getting sexual health information and health care at the local clinic |
| What are the symptoms/treatments for STDs | What are the symptoms for STDs; how do you know you have an STD |
| How do STDs affect your unborn children | How do STDs affect your unborn children |
| There is overall acknowledgement of teenage pregnancy and the potential impact | |

Table 1
Top Themes of Participant Responses
DISCUSSION

The social context of sexual health care in Alaska is impacted in every way by Alaska’s size and the distribution of its people across the state. More than 200 of Alaska’s 336 communities are accessible only by airplane or boat, community health aides and midwives are the primary health care providers, health care provider turnover is high, and limited resources and competing health care priorities often render health care provision and education challenging (Tulloch, de Ravello, & Taylor, 2006). Most Alaska communities are not only remote but very small—fewer than 500 people. In these small communities, the primary health care provider is often a relative or lifelong acquaintance. Such close relationships can make seeking health care for sexual health not only difficult, but sometimes seemingly impossible. The tremendous need for sexual health care is complicated by reduced access and limited resources, especially for treatment of illnesses that may be stigmatizing or embarrassing.

The findings of this focus group project provided an initial understanding of the impact of living in a small rural community on sexual health care and how that worldview can affect knowledge, attitudes, and beliefs about STDs, HIV/AIDS, and unplanned pregnancy. Moreover, focus groups indicated that AN and rural youth might have unique knowledge, attitudes, and beliefs concerning these subjects. Themes regarding privacy, ease of access to sexual health information, and availability of condoms emerged as concerns of AN youth regarding sexual health. Youth also voiced preferences for how and from whom they would like to receive sexual health information. Social and behavioral issues of alcohol and drug use and discomfort surrounding the subject of sexual health within the community were noted to be contributors to unsafe sexual behaviors.

These data provided a background and foundation for action to reduce the burden of STDs among AN and rural youth. The information gathered in the focus groups was used to build a culturally appropriate and community-driven intervention. Based on the focus group results, a sexual health intervention emerged with a Web site for AN and rural youth at its core that offers education and health promotion as well as STD/HIV screening and treatment. *I Know Mine* (www.iknowmine.org) is the major outcome of this focus group project and is intended to give youth the tools necessary to make healthy decisions when it comes to sexual health. Through *I Know Mine*, youth can:

- Order condoms (based on focus group desire to have easier access to condoms);
- Order chlamydia and gonorrhea home testing kits via the Johns Hopkins University *I Want the Kit* program (Gaydos et al., 2006a;b; 2009; based on limited access to health care in small villages, and confidentiality and privacy concerns, focus group participants in one area were asked about the acceptability of home testing kits and were overwhelmingly supportive);
• Ask sexual health questions of Anchorage-based providers and find sexual health information (based on embarrassment about asking sexual health questions) and information on the importance of knowing your STD/HIV status, including testing locations (based on desire to know more about testing); and
• Watch videos and read stories about STDs, HIV/AIDS, and unplanned pregnancy, so that youth know that no question is stupid and no story is unique.

*I Know Mine* is managed and maintained by the HIV/STD Program Services at the Alaska Native Tribal Health Consortium. The Web site was developed by a local marketing company in Anchorage, Alaska using market research to focus on the target audience. Materials uploaded to the Web site are reviewed by a team of doctors, nurses, and public health professionals to ensure accuracy and are reviewed by AN youth to ensure the value of the content. Questions posed and condom orders placed via the Web site receive a response in no more than 2 business days—usually within 24 hours. Many of the stories and videos uploaded to the Web site are created or reviewed by local youth to ensure accuracy and connection to the target population.

Placing sexual health interventions within a cultural context and structuring them within a conceptual framework can give communities a voice and a chance to determine their own health (Gesink Law et al., 2008; Holkup, Tripp-Reimer, Salois, & Weinert, 2004; Kaufman, Desserich, et al., 2007). The findings discussed in this article—driven by the youth themselves—have been critical in designing and implementing future sexual health interventions and will, we hope, promote greater community involvement and acceptance.

A strong sense of autonomy and self-determination is an important aspect and enduring vision of AN communities. The vision for the focus group project was to create an initiative maintained and endorsed by local communities by learning as much as we could from the communities and working in partnership with them, and by linking ideas from the focus groups directly to subsequent intervention objectives. Every community has its own set of interests, values, and viewpoints. By utilizing a community-based and educational approach to focus on STDs, HIV/AIDS, and unplanned pregnancy as population health problems in local AN communities, each community’s unique abilities to help build successful initiatives were realized.
REFERENCES


**ACKNOWLEDGEMENTS**

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Appendix A
Focus Group Questions

1. What are your top three health concerns?
2. What comes to mind when I say "sexual health"?
3. What about sexual health are you most concerned with?
   • What makes you pick that?
   • What have you heard about that?
   • What are ways to avoid that?
   • What thoughts, concerns, feelings come to mind regarding that?
   • Where do you usually get information regarding that?
4. I noticed that you didn't say (pregnancy, gonorrhea, Chlamydia, HIV/AIDS); can you tell me why these issues are not concerns for you? (IF NECESSARY)
5. What comes to your mind when I say "sexually transmitted disease" or "sexually transmitted infection," also know as STDs or STIs?
   • What did you say that?
   • What thoughts, concerns, feelings come to mind regarding that?
   • Where do you usually get information on that?
6. What are some reasons why you would seek out more information on sexual health or STIs?
7. Chlamydia is the most commonly reported sexually transmitted infection in the United States. Every year, it is estimated that 2.8 million Chlamydia infections occur. Alaska has the second highest rate of Chlamydia infections in the U.S. and Alaska Natives suffer from this infection at 4 times the rate of non-Native persons.1,2
   • What questions does this raise for you?
   • What would you want to know about this?
   • What information would you want?
   • How would you like to receive this information?
8. Gonorrhea is caused by a bacterium that grows very well in the reproductive tract in women and urethra in men and women. This bacterium can also grow in the mouth, throat, eyes, and anus.3 It is estimated that in the United States, 700,000 new cases of gonorrhea occur each year.4 Like Chlamydia infections, gonorrhea infections also have a disproportionate burden in the Alaska Native population.5
   • What questions does this raise for you?
   • What would you want to know about this?
   • What information would you want?
   • How would you like to receive this information?

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continued on next page
Appendix A, Continued

Focus Group Questions

9. (For female groups) There is a new way to test for STIs that is used in other areas of the United States. It involves you, and not a doctor, health aide, or nurse, inserting a swab 1 inch into the vagina. This test can detect Chlamydia, gonorrhea, and another infection called trichomoniasis. Would you feel comfortable doing a test like this?6
   • Why/Why not?

10. HIV is passed from one person to another when infected blood, semen, or vaginal secretions come into contact with broken skin or the mucous membranes of an uninfected person. Pregnant women can also pass HIV to their baby during pregnancy or delivery, or through breast-feeding.7 At the end of 2003, it was estimated that there were over one million persons in the U.S. with HIV/AIDS.8 In Alaska, as of 2005, there were 1,048 HIV/AIDS cases reported.8 Add data on cases among Alaska Natives - ?
   • What questions does this raise for you?
   • What would you want to know about this?
   • What information would you want?
   • How would you like to receive this information?

11. Pregnancy is considered to be unplanned when the woman did not want to be pregnant (unwanted) or desired a later pregnancy (mistimed). Women with unplanned pregnancies are more likely to find out that they are pregnant later than women with intentional pregnancies—making intendedness a factor in the newborn's birth outcome. Teenagers are the highest at-risk group for unplanned pregnancy. In Alaska 45.3% of pregnancies are unplanned.9
   • What questions does this raise for you?
   • What would you want to know about this?
   • What information would you want?
   • How would you like to receive this information?

12. One of the end goals of this project is to develop a program and education materials for Alaska Native youth to prevent STI in your community. If you were to develop a program and materials for girls and guys your age in ___, what messages about STI, HIV/AIDS, and unplanned pregnancy would you try to convey?
   Would you....
   • Talk about preventing STIs and pregnancy through abstinence? (why and why not)
   • Talk about preventing STIs and pregnancy by promoting condom use? (why and why not)
   • Talk about preventing STIs and pregnancy by decreasing sexual partners or waiting to have sex? (why and why not)
   • Are there any other ideas of how to prevent STIs in your community

13. If we were to develop a program, based on these messages to reach guys and girls your age to get them interested and wanting to learn more about methods of reducing STI, HIV/AIDS, and unplanned pregnancy, how would we go about doing this?
   • There are certain programs that have had success in other areas in the past. I am going to tell you a little bit about a couple different programs and I want you to tell me what you think of them

14. Remembering everything that we have talked about today, what are the most important things you would include in a program or education campaign for ____?
Appendix A, Continued
Focus Group Questions


Abstract: BeLieving In Native Girls (BLING) is a juvenile delinquency and HIV intervention at a residential boarding school for American Indian/Alaska Native adolescent girls ages 12-20 years. In 2010, 115 participants completed baseline surveys to identify risk and protective factors. Initial findings are discussed regarding a variety of topics, including demographics and general characteristics, academic engagement, home neighborhood characteristics and safety, experience with and perceptions of gang involvement, problem-solving skills, self-esteem, depression, sexual experiences and risk-taking behaviors, substance abuse, and dating violence.

INTRODUCTION

The purpose of this article is to describe the characteristics of 115 American Indian/Alaska Native (AI/AN) adolescent girls ages 12-20 years who participated in BeLieving In Native Girls (BLING), a juvenile delinquency and HIV intervention at an AI/AN residential boarding school.

BACKGROUND

In response to the high levels of HIV and juvenile delinquency among young girls, in 2008-2009 the Office on Women’s Health (OWH) initiated a competitive call for proposals for the HIV/AIDS Prevention Education Services for Female Youth at Greater Risk for Juvenile Delinquency Project. Ten programs, including BLING, were funded. Each of the 10 sites served minority adolescent females and shared common directives, goals, and objectives. Each site provided evidence-based programming across multiple sessions; however, specific program curricula varied, based upon the cultural needs of the respective minority groups. To determine the effectiveness of the programs, OWH contracted an external evaluator, Global Evaluation and Applied Research Solutions (GEARS), Inc., to conduct a national cross-site evaluation using a standard instrument.
The process used to develop the evaluation instrument started with a literature review of 196 articles pertinent to adolescents and access to health services, risk assessments, and topically relevant program assessment. Based on this information, the external evaluator and the OWH Project Officer defined core elements to be used for the national evaluation tool. These included violence, reproductive health, conflict resolution, communication skills, mental health, overall wellness, substance abuse, self-esteem, cultural identity, and gender and societal norms.

With a focus on measuring these core elements, the external evaluator and a team of subject matter experts then identified a set of widely accepted scales used in research within adolescent populations. The survey scales were selected based on their relevance, validity, and reliability, as well as their potential to best determine measurable changes that could be attributable to the intervention. In addition to published scales identified throughout this process, the external evaluator utilized an internally developed scale, which has been used in evaluations with similar populations, to measure problem solving skills (internal consistency = 0.76). Also, a 10-item measure previously developed by the external evaluator for college-aged women attending minority institutions was used to gauge girls’ sexual experience.

All of the instruments and items were presented to and discussed with the national evaluation stakeholders (i.e., OWH and the 10 funded programs). The external evaluator then created a survey from which to gauge how knowledge, attitudes, behaviors, skills, and intents to change behavior might be affected by the different interventions employed. The survey was designed to be administered at pre-assessment, post-test, 6 months post-test, and 12 months post-test. The instrument received Institutional Review Board (IRB) and Office of Management and Budget clearance in Fall, 2010 and was first administered during October 2010. All sites, including the school offering the BLING program, will input evaluation results into a national database, in order to inform the OWH about the efficacy of each program.

The following standardized survey instruments were used to derive questions for the larger risk assessment:

- Neighborhood Environment Scale (Crum, Lillie-Blanton, & Anthony, 1996);
- Exposure to Gangs Survey (Dahlberg, Toal, & Behrens, 1998);
- Problem Solving (Developed by GEARS for this project);
- Adolescent Femininity Ideology Scales (Tolman & Proche, 2000);
- Rosenberg Self-Esteem Scale (Rosenberg, 1979);
- Center for Epidemiologic Studies Depression Scale for Children (CES-DC; Fendrich, Weissman, & Warner, 1990);
- Intentions for Safer Sex Scale (Lux & Petosa, 1994);
- Attitudes towards Gangs (Nadel et al., 1996);
Acceptance of Couple Violence (Dahlberg et al., 1998);  
Original Conflict Tactics Scale (Straus, Hamby, Boney-McCoy, & Sugarman, 1996);  
Rochester Youth Development Study (Thornberry & Krohn, 2000);  
Sexual Behavior (Lepkowski et al., 2006);  
Victimization in Dating Relationships (Foshee et al., 1996);  
Relational Aggression, Gender, and Social-psychological Adjustment (Crick & Grotpeter, 1995);  
Alcohol, Tobacco, and Other Drugs – Age At First Use (Substance Abuse and Mental Health Services Administration [SAMHSA], 2009); and  
Alcohol, Tobacco, and Other Drugs (ATOD) 30-day use scale (Centers for Disease Control and Prevention [CDC], 1991-2009).

THE BLING PROGRAM

In 2010-2011, BLING provided programming to 115 AI/AN girls between the ages of 12 and 20 years, who were living at a residential boarding school in a Plains state. The school annually provides elementary, middle, and high school education to approximately 500 residential students from 75 federally recognized tribes across the U.S. All are AI/AN students at risk for a variety of physical, emotional, and/or behavioral problems due to health care inequities, poverty, homelessness, substance abuse, family violence, domestic violence, and/or gang violence. When asked, students said they attended the school for one of three primary reasons: to distance themselves from problems with family, friends, or law enforcement in their home communities; to attend school with other AI youth; or because they had no other housing alternatives. According to the school administration, approximately 25% of the students are technically homeless in any given year.

This school was selected for participation based on the AI/AN student population it serves and the willingness of the superintendent and staff to provide access to the campus and adolescent girls. Although there is no research on the representative nature of boarding schools compared to schools on reservations or in other areas, this school admits students from every federally recognized tribe, so the assumption was made that this diversity would have at least some resemblance to behaviors occurring within students’ home communities.

Residential boarding schools, without any other mitigating factors, can be stressful environments, particularly for new students, who are now sharing everything—living space, recreational space, dining space, and classroom space. Peer observation and review is ongoing and unrelenting, and privacy is scarce. Everything is new and homesickness is pervasive. In the first several weeks, cliques have yet to be formed and students are receptive to and accepting of
support. Consequently, BLING staff took advantage of this window of opportunity and initiated an introductory process early in the 2010 program year to help build relationships with the students, while also identifying girls with a need for more individual attention. That process consisted of a short one-on-one interview and evolved into an unanticipated mental health intervention. All new female students ages 12 years and older are eligible for BLING. The girls planning to participate in 2010-2011 were asked a series of basic questions about their lives. Examples of the questions were: “Tell me about your family.” “Do you feel safe when you are at home?” “How are you doing in school?” “Do you have any health concerns?” “Do you have someone you can talk to about problems?” The interviewers, who were BLING facilitators or counselors, then made subjective assessments based on the discussions. Girls with interview ratings of 3 or 4 (on a 4-point scale of 1= Low risk/Having no problems to 4 = High risk/Having problems) were referred to the school counseling staff for further assessment. Examples of automatic referrals included girls who disclosed substance abuse, death in family, suicide ideation, and/or pregnancy/motherhood. Girls were asked if they would like to talk to a counselor; they could also request a referral for an undisclosed reason. BLING staff made 40 referrals for additional assessment during the first several months of school (35% of participants). The high percentage of initial referrals was not an anomaly, but an indicator of the educational and social support needs within this population.

The BLING curriculum consists of 24 teachings focused on building protective factors and educating about anatomy and sexual health, sexually transmitted infections, HIV prevention, communication and interpersonal relationship skills, racism, substance abuse, and mental wellness. The program is built upon two theoretical constructs of behavioral change, the Transtheoretical Stages of Change (Prochaska & DiClemente, 2005) and the Social Learning Theory (Bandura, 1986). The 90-minute teachings are delivered weekly in female dorms after curfew to minimize conflicts with other school activities. AI staff members from the local community are trained to deliver HIV prevention information, and the program manager, a graduate-level person, attends all meetings. The construct of the teachings is framed around the Medicine Wheel and the connectedness and consequences of choices and decisions regarding every aspect of our being. For HIV content, teachings were adapted from an evidence-based curriculum based on the work of Jemmott and Jemmott (1992) and from Be Proud! Be Responsible! and Circle of Positive Choices (National Indian Women’s Health Resource Center, 2006). Teachings about relationships were also adapted from Circle of Positive Choices. Additional teachings were developed by the BLING Program Director to address bullying, substance abuse, historical trauma, problem-solving, racism, and suicide prevention. Each session was reviewed and adapted (when necessary) by BLING staff into a “see, say, do” learning style that has been shown to be effective with AI communities (McIntosh, 2005). Teachings integrate active learning methods such as talking circles, role plays, and games.
The number of participants for each session ranges between 12 and 24. A school-assigned liaison assists with space and meeting logistics. An AI psychologist rotates between sessions in the various dorms on a monthly basis, and serves as a behavioral health provider for girls needing additional support. By employing these theoretical and cultural frameworks, BLING aims to educate girls and to increase individual-level protective factors to reduce the risks for HIV and other sexually transmitted infections.

**METHODS**

Recruitment was open to all girls ages 12 years old and older who had not been in a similar program the prior year. (Girls who had already completed a similar program were referred to a supplemental program during the school year described in this article.) The school, as acting guardian, gave permission for students to participate in the evaluation activities and in the program. Additional steps were put in place to ensure that students, as minors, understood the informed consent/assent process and agreed to participate. The protocols and forms were approved by a national IRB. Girls were gathered in small groups, and BLING staff members explained the program goals and objectives and the consent process. A total of 115 girls agreed to complete the assents and continue with the survey. One girl declined the survey, but was invited to attend program teachings.

The form was read aloud and time was given for questions and explanation. Survey questions were also read aloud to minimize problems with low literacy levels and slow reading, and to ensure all students completed the survey within the allowed timeframe. Students were free to read ahead and work at their own pace. The majority of the 330 questions were closed-ended; choices were true/false or a selection across a 5-point Likert scale. A refreshment break was scheduled midway to avert survey fatigue. At the conclusion of the survey, participants received a $10 incentive (Wal-Mart gift card).

All surveys were coded with a unique identifier and the key maintained by the local evaluator in a separate location to ensure confidentiality. Hard copies were stored at the BLING program offices in a locked file cabinet. Data were entered into the national database managed by GEARs, Inc. and downloaded into SPSS statistical software for analysis. During analysis, data were collapsed into ordinal scales to better describe outcomes. The information reflects frequencies rather than statistical significance; thus, power was not a reporting factor.
RESULTS

A total of 115 girls completed the baseline instrument. Participants were not required to answer every item; for each section of the instrument, the number of respondents is noted. Lack of response to some items may indicate that girls felt uncomfortable reporting, perhaps due to their high risk in those areas. However, to avoid reporting risks higher than could be documented, non-responses were not included in analyses.

Participant Demographics

The ages of participants were: 13 (9%); 14 (14%); 15 (17%); 16 (30%); 17 (20%); 18 (6%); and 19+ (4%). Twelve percent (n = 14) predominantly speak a language other than English; 31% (n = 35) speak English and another language equally; and 57% (n = 65) speak only English. Within the most recent six months, 21% (n = 24) had moved to a new neighborhood and 7% (n = 8) had moved to a new place in their current neighborhood. Seventeen percent (n = 20) reported having no adult to talk to about problems and 15% (n = 17) never talk to an adult about things they are doing or thinking.

School Experiences

Participants were in the 7th through 11th grades, with the greatest percentage in the 8th grade. See Table 1 for more information.

<table>
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<tr>
<th>Grade in School</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<tbody>
<tr>
<td>Percent (Number)</td>
<td>11%</td>
<td>31%</td>
<td>20%</td>
<td>12%</td>
<td>23%</td>
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<tr>
<td>Scholastic Grade (n = 111)</td>
<td>Mostly A</td>
<td>Mostly B</td>
<td>Mostly C</td>
<td>Mostly D</td>
<td>Mostly F</td>
</tr>
<tr>
<td>Percent (Number)</td>
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<td>39%</td>
<td>32%</td>
<td>7%</td>
<td>12%</td>
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<tr>
<td>School Enjoyment (n = 115)</td>
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<td>Seldom or Never</td>
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<tr>
<td>Percent (Number)</td>
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<td>19%</td>
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<tr>
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<td>Not at all important</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Percent (Number)</td>
<td>51%</td>
<td>0%</td>
<td></td>
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Table 1, Continued
Participants’ School Experiences (n = 111)

<table>
<thead>
<tr>
<th></th>
<th>Had dropped out previously</th>
<th>Had not dropped out</th>
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</thead>
<tbody>
<tr>
<td>Percent (Number)</td>
<td>24% (28)</td>
<td>76% (84)</td>
</tr>
<tr>
<td>Under 15 years</td>
<td>14% (4)</td>
<td>86% (24)</td>
</tr>
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</table>

* Age range of those who dropped out of school was 13-20 years

**Neighborhood Environment Scale (N = 115)**

The Neighborhood Environment Scale (Crum et al., 1996) asked participants 17 questions about the safety and viability of their home neighborhood. Included with this set of questions were 6 items from the Exposure to Gangs Survey (Dahlberg et al, 1998). Response categories were true/false, and responses were sorted into two tables to report on positive and negative aspects. Negative responses reflected the presence of drugs, violence, homelessness, and gangs. Positive responses reflected accessible recreation spaces, sense of safety when walking alone, and caring neighbors. Overall answers were split—51% and 49%, respectively—indicating that at least half the girls felt unsafe in their home communities.

**Problem Solving (N = 111)**

As noted earlier, the national evaluator developed an 11-item scale to assess problem-solving abilities in middle school youth. Examples of questions in this scale are: “I think about different things I could do before I do anything.” “I try to listen to the other person even if I do not agree with him or her.” “I usually wait until the problem goes away by itself, instead of trying to solve it.” Participants responded on a 5-point scale of All of the time to Never. Answers were tallied for each participant. Possible total scores ranged from 0 to 44. Lower scores indicated less problem-solving ability, and higher scores indicated greater ability. For ease of description, the scores were further categorized by range: <15, 15-19, 20-24, 25-29, 30-35, and 36+. All of the responses in this study were at or below the middle of the range, indicating a need for improved critical-thinking and problem-solving skills in the population (see Figure 1).
Adolescent Femininity Ideology Scales (AFIS), Inauthentic Self in Relationship Subscale (N = 113)

Nine questions from this subscale (Tolman & Proche, 2000) measured the ability of participants to be authentic in expressing thoughts and feelings towards others and mutually in close relationships. Examples of questions include “I worry I make others feel bad if I am successful,” and “I tell friends what I honestly think, even if it is an unpopular idea.” The 5-point scale choices were \textit{Strongly agree} to \textit{Strongly disagree}. Values were totaled for each participant. Possible response totals were 0 to 36, with higher numbers indicating a greater level of ability. Again, for ease of description, responses were categorized as low (0-12), middle (13-24), and high (25-36). The majority of girls (66, or 58%) were in the middle range. Twenty-two girls (20%) scored in the upper third and 25 (22%) fell in the bottom third.

Another eight questions assessed self-perceptions about body image. Examples of questions included “I often wish my body were different,” “I think a girl has to be thin to be beautiful,” and “On the whole, I am satisfied with myself.” The 5-point scale choices were \textit{Strongly agree} to \textit{Strongly disagree}. Values were totaled for each participant and possible response totals ranged from 0 to 32. Responses were categorized as least objectified (0-11), moderately objectified (12-24), and most objectified (25-32). A total of 109 participants completed all of the questions, and responses indicated that about half of the girls (51%, n = 56) had a moderate to low perception of body image, 39% (n = 42) had a moderate to high perception of body image, and 10% (n = 11) had a high perception of body image.
Rosenberg Self-Esteem Scale (N = 115)

Ten questions from the Rosenberg Self-Esteem Scale (Rosenberg, 1979) measured self-satisfaction and self-worth. The 5-point scale choices were *Strongly agree* to *Strongly disagree*. Values were totaled for each participant, and possible scores ranged from 1 to 40. Scores ranging from 15-25 on this scale were considered within a normal range, while scores below 15 suggested low self-esteem. In our group, about two-thirds (67%; n = 77) fell within good to high ranges for self-esteem, while the remaining third (35%; n = 38) were at the low end of the spectrum.

Center for Epidemiologic Studies Depression Scale for Children (CES-DC; N = 109)

Participants completed 20 questions from the CES-DC (Fendrich et al., 1990) about their moods, behaviors, and feelings during the preceding week. Respondents’ choices on a 4-point scale were *Not at all* to *A lot*. Values were totaled for each participant. The standard rule for interpreting the findings was that a score of 15 or less indicated normality and no depression, a score of 15-21 indicated mild to moderate depression for which individuals should seek help, and a score over 21 indicated the possibility of major depression for which individuals should seek out a psychologist as soon as possible. Eighteen percent of participants (n = 20) had scores indicating no or low levels of depression, 26% (n = 28) demonstrated mild levels of depression, and 47% (n = 52) had a score of 21 or higher, indicating that almost half of participants were at risk for major depression (see Figure 2).

![Figure 2: CES Depression Scale](image)

Intentions for Safer Sex Scale (N = 115)

Six questions from this scale (Lux & Petosa, 1994) gauged the intention to practice safe sex; examples include “I will make sure a condom is used when I have sex,” “I will only have one sexual relationship at a time,” and “I do not plan on having sex until I am at least eighteen years old.” The 5-point response choices ranged from *Strongly agree* to *Strongly disagree*. When responses were tallied, 85% (n = 98) indicated an intention to use condoms during sex (mean score
was 4.52). While intent for condom use was high, responses for abstaining or delaying sex were lower; 36% (n = 41) planned to delay sex until marriage (mean of 3.15). Responses from 32% (n = 37) of participants indicated intent to engage in sexual activity before marriage; 32% (n = 37) were “neutral” in their response to this item, suggesting a reluctance to answer the question.

**Attitudes Towards Gangs (N = 104)**

A 9-item scale (Nadel et al., 1996) measured attitudes towards gangs. Examples of questions in this scale include “I think you are safer and have protection if you are in a gang,” “My friends would think less of me if I join a gang” and “Some people in my family belong to a gang, or used to belong to a gang.” Respondents chose from a 5-point ascending scale from *Strongly disagree* to *Strongly agree*. Values were totaled for each participant. The possible responses ranged from 0 (low support for gangs) to 36 (high support for gangs). Responses were further divided into categories showing level of support: low (0-12), moderate (13-24), and high (25-36). The majority (59%; n = 61) were not supportive of gangs. The remaining 41% (n = 43) indicated, at most, a mild interest in and support of gangs. None reported a high level of support for gangs.

**Acceptance of Couple Violence (N = 109)**

On an 11-item scale measuring acceptance of couple violence (Dahlberg et al., 1998), questions included, “A girl who makes her boyfriend jealous on purpose deserves to be hit,” and “There are times when violence between dating partners is okay.” The 5-point response categories were *Strongly disagree* to *Strongly agree*. Values were totaled for each participant, and the range of responses was 0 to 44. For ease of description, responses were further divided into four categories of tolerance for couple violence: none to low (0-10), low to some (11 to 21), some to moderate (22-32), and high (33-44). The majority of respondents indicated no to low tolerance (55%, n = 60), while 26% (n = 28) showed low to some tolerance, and 19% (n = 21) reported some to moderate tolerance.

**Conflict Tactics**

This scale was taken from the Original Conflict Tactics Scale (Straus et al., 1996) and was used to assess reasoning, verbal aggression, and minor and severe violence in relationships. The items were broken down into four sections: Reason (6 items), Verbal Aggression (4 items), Violence in Relations (8 items), and Violent Behavior. Response options for the first three scales were on a 5-point scale, ranging from *All of the time* to *Never*. Responses for the fourth scale were unique to each question.

**Reasoning Scale (N = 109)** included questions about ability to discuss issues calmly, the practice of seeking information and additional input about issues, and the practice of seeking outside help. An example of “good reasoning” would be bringing in outside help in settling disagreements.
Values were totaled for each participant, and the possible totals ranged from 0 to 24. Actual responses were divided into low reasoning skills (1-8), moderate reasoning skills (9-16), and high reasoning skills (17-24). The majority of responses were low (69%, n = 75), then moderate (41%, n = 34). None of the participants scored above the middle of the range for reasoning.

**Verbal Aggression (N = 113)** sought responses about how participants were able to handle problems through communication or negotiation. Responses were measured using a 5-point scale with choices from *All of the time* to *Never*. The total for possible responses ranged from 0 to 16. Responses were tallied and categorized as low (0-5), moderate (6-11), and high (12-16), with low scores indicating less verbal aggression and higher scores indicating more verbal aggression. Nine percent (n = 10) of respondents were in the lowest range, while 49% (n=55) of respondents were in the highest range, indicating they had frequently insulted or sworn, threatened, or said spiteful things (see Figure 3).

![Figure 3: Verbal Aggression](image)

**Violent Responses to Solve Relationship Problems (N = 107)** used eight measures to identify history of using violence and aggressive behaviors to solve problems in relationships. Such behaviors include throwing things, pushing/shoving, hitting, beating, or choking. Response options were on a 5-point scale, with choices ranging from *All of the time* to *Never*. Individual responses were tallied and further categorized as: 0 events, 1-8 events, 9-16 events, 17-24 events, and 25-32 events. Twenty-three percent (n = 25) reported no events, 33% (n = 35) reported 1 to 8 events, 28% (n = 30) reported 9 to 16 events, 12% (n = 13) reported 17 to 24 events, and 4% (n = 4) reported 25 to 32 events (see Figure 4).
**Violent Behavior (N = 113)** was measured on self-reported responses for activities within the past 30 days. The questions included “How many times were you in a physical fight?” “The last time you were in a fight, with whom did you fight?” “How many times were you in a physical fight in which you were injured and had to be treated by a doctor or nurse?” and “How many times were you in a fight on school property?” Sixty-four percent (n = 74) reported a history of physical fighting, usually with a friend or someone they knew. In the most recent 30 days, 3.5% (n = 4) had been in a physical fight.

**Self-Reported Delinquency—Rochester Youth Development Study (N = 114)**

This 36-item scale (Thornberry & Krohn, 2000) with yes/no response categories measures behaviors within the most recent 30 days. Examples of questions include “Run away from home,” “Been loud or rowdy in a public place where somebody complained and you got in trouble,” “Damaged, destroyed or marked up somebody else’s property on purpose,” and “Been involved in a gang or posse fight.” Thirty-five percent (n = 39) of the girls reported no delinquent behavior; 22% (n = 25) reported one event; 14% reported 2 to 3 events; 15% (n = 17) reported 4 to 6 events; and 14% (n = 16) reported 7 to 24 events. The most common delinquent behaviors were skipping class (34%, n = 39), rowdiness in a public place (27%, n = 31), and selling marijuana (24%, n = 27).

**Sexual Behavior (N = 76)**

Questions regarding sexual initiation and behavior were taken from the National Study for Family Health (Lepkowski et al., 2006). Questions included “Have you ever had sex?” “How old were you the first time sex happened?” and “How many sex partners have you had?” Respondents selected from a range of answers that were relevant to the specific question. Seventy-six of the 115 respondents had experienced sex (66%). Age at first sexual experience ranged from 6 to 19 years, and the mean was 16.5 years. There was a marked change in behaviors from ages 11-12, when

![Figure 4: Violent Response](image-url)
four girls reported sex (5%), to age 13, when 15 girls reported sex (20%). For girls age 14, it was 28% (n = 21); age 15, 25% (n = 19); age 16, 15% (n = 11); 7% (n = 5) reported first sex between the ages of 17 and 19. Sexual activity included vaginal, anal, and oral sex, and typically referred to heterosexual sex (94%), although 1% reported sex with girls only, and 5% reported bisexuality. The number of reported sex partners ranged from 1 to 9, and 61% reported multiple partners. Partners were usually 2-3 years older than the girl. Forty-two girls had had sex within 30 days of the pre-test. Of these, 19 (45%) reported always using a condom, 9 (21%) reported using a condom almost all of the time, 17% (n = 7) reported using a condom sometimes, and 17% (n = 7) reported almost never using a condom.

Sixty-nine percent (n = 55) wanted to have sex the first time it happened. Another 11% (n = 9) did it to please someone else. Twenty percent (n = 16) were pressured or forced into the act; the partner forcing sex was a usually a friend/boyfriend (38%, n = 6); friend of the family, (19%, n = 3); or other relative (12%, n = 2). Five girls (31%) preferred not to answer.

**Victimization in Dating Relationships (N = 91)**

Dating victimization was measured on a 20-item scale, with response choices of *Never, 1 to 3 times, 4 to 9 times, and 10 or more times* (Foshee et al., 1996). The types of behaviors and number of responses are shown in Table 2 below. Of the 115 respondents, 81% (n = 91) had been in a dating relationship. Of these, 70% (n = 64) had experienced dating violence. Twenty percent (n = 13) reported verbal abuse alone, with 80% (n = 51) reporting physical and/or emotional abuse. The number experiencing multiple victimization events (more than one category and more than one time) was 25% (n = 23). Eleven percent (n = 7) reported that their partner forced them to have sex.

<table>
<thead>
<tr>
<th>Violent Behaviors</th>
<th>1-3 times</th>
<th>4-9 times</th>
<th>10+ times</th>
<th>No answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Scratched me</td>
<td>10 (11.0%)</td>
<td>0 (0.0%)</td>
<td>2 (2.2%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>2. Slapped me</td>
<td>13 (14.3%)</td>
<td>1 (1.1%)</td>
<td>1 (1.1%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>3. Physically twisted my arm</td>
<td>12 (13.2%)</td>
<td>3 (3.3%)</td>
<td>1 (1.1%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>4. Slammed me or held me against a wall</td>
<td>8 (8.8%)</td>
<td>2 (2.2%)</td>
<td>1 (1.1%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>5. Kicked me</td>
<td>9 (9.9%)</td>
<td>2 (2.2%)</td>
<td>1 (1.1%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>6. Bent my fingers</td>
<td>8 (8.8%)</td>
<td>4 (4.4%)</td>
<td>1 (1.1%)</td>
<td>4 (4.4%)</td>
</tr>
</tbody>
</table>

continued on next page
Table 2, Continued
Dating Violence (N = 91)

<table>
<thead>
<tr>
<th>Violent Behaviors</th>
<th>Never</th>
<th>1-3 times</th>
<th>4-9 times</th>
<th>10+ times</th>
<th>No answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Bit me</td>
<td>63 (69.2%)</td>
<td>20 (22.0%)</td>
<td>2 (2.2%)</td>
<td>2 (2.2%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>8. Tried to choke me</td>
<td>82 (90.1%)</td>
<td>3 (3.3%)</td>
<td>2 (2.2%)</td>
<td>0 (0.0%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>9. Pushed, grabbed, or shoved me</td>
<td>65 (71.4%)</td>
<td>12 (13.2%)</td>
<td>3 (3.3%)</td>
<td>7 (7.7%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>10. Dumped me out of a car</td>
<td>83 (91.2%)</td>
<td>4 (4.4%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>11. Threw something at me that hit me</td>
<td>74 (81.3%)</td>
<td>10 (11.0%)</td>
<td>3 (3.3%)</td>
<td>0 (0.0%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>12. Forced me to have sex</td>
<td>80 (87.9%)</td>
<td>5 (5.5%)</td>
<td>2 (2.2%)</td>
<td>0 (0.0%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>13. Forced me to do other sexual things that I did not want to do</td>
<td>81 (89.0%)</td>
<td>4 (4.4%)</td>
<td>2 (2.2%)</td>
<td>0 (0.0%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>16. Hit me with something hard besides a fist</td>
<td>68 (74.7%)</td>
<td>11 (12.1%)</td>
<td>8 (8.8%)</td>
<td>3 (3.3%)</td>
<td>1 (1.1%)</td>
</tr>
<tr>
<td>17. Beat me up</td>
<td>72 (79.1%)</td>
<td>14 (15.4%)</td>
<td>2 (2.2%)</td>
<td>2 (2.2%)</td>
<td>1 (1.1%)</td>
</tr>
<tr>
<td>18. Assaulted me with a knife or gun</td>
<td>84 (92.3%)</td>
<td>2 (2.2%)</td>
<td>3 (3.3%)</td>
<td>1 (1.1%)</td>
<td>1 (1.1%)</td>
</tr>
<tr>
<td>19. Said mean or hurtful things that made me feel bad about myself</td>
<td>55 (60.4%)</td>
<td>14 (15.4%)</td>
<td>7 (7.7%)</td>
<td>14 (15.4%)</td>
<td>1 (1.1%)</td>
</tr>
<tr>
<td>20. Yelled or screamed at me</td>
<td>50 (54.9%)</td>
<td>25 (27.5%)</td>
<td>4 (4.4%)</td>
<td>11 (12.1%)</td>
<td>1 (1.1%)</td>
</tr>
</tbody>
</table>

Relational Aggression, Gender, and Social-psychological Adjustment (N=113)

Six questions measured relational aggression (Crick & Grotpeter, 1995). Response choices were a 5-point scale from *All of the time* to *Never*. Examples of questions included “Some kids tell lies about a classmate so that the other kids won’t like the classmate anymore. How often do you do this?” and “Some kids try to keep certain people from being in their group when it is time to play or do an activity. How often do you do this?” The number and percent of responses were consistent across all domains; approximately 64% (n = 72) reported never engaging in these
activities, 14% (n = 16) almost never engaging in the activities, 13% (n = 15) sometimes engaging, 3.5% (n = 4) engaging most of the time, and 5% (n = 6) engaging all of the time. Approximately 9% of adolescents (n ~10) consistently reported maligning behavior.

**Alcohol, Tobacco, and Other Drugs**

The assessment also measured experiences with alcohol, tobacco, and other drugs and age at first use, using a 7-item scale developed for SAMHSA and used in the 2009 National Survey of Drug Use and Health. Respondents were asked questions such as “Have you ever tried marijuana?” Response categories were Yes and No. A follow-up question then asked for age at first use. The results indicated that 83% (n = 95) of the participants had ever tried marijuana, 81% (n = 93) had ever tried alcohol, and 76% (n = 87) had ever smoked a cigarette. The age at first use ranged from 7 to 18 years and, for all, the most vulnerable years were the young teens—12, 13, and 14. While not in the majority, 23% (n = 27) had tried crack cocaine, 22% (n = 25) had used inhalants, 6% (n = 7) reported injection drug use (IDU), and 3% (n = 3) had tried heroin or a hallucinogen. For these drugs, age at first use was slightly older—14, 15, and 16 (see Figure 5).

![Figure 5: Number of Girls Engaging in Drug Use by Choice of Drugs](image-url)
AI residential boarding schools represent a microcosm of adolescent AI/AN behaviors occurring on reservations and tribal lands throughout the United States. Students bring their lived experiences with them when they come to a residential boarding school, both good and bad. If they are dealing with problems on their reservations or in their home communities, such as substance abuse, dating violence, depression, and anger, those same issues follow them to school.

While BLING participants may not be representative of all AI/AN girls, they do reasonably represent a segment of the population at extreme risk for lifelong problems associated with poor decision-making skills, low self-esteem, high levels of depression, moderate academic accomplishments, and risky sexual behaviors. Many come from households that are less acculturated to mainstream America, as evidenced by the relatively low rate of English-only speakers (57% compared to 80% in the general population; U.S. Census Bureau, 2007). Half of the students live in unsafe neighborhoods, and safety issues may be a factor when parents determine to send children as young as 10 years old away to a residential school. Twenty-eight percent of the girls had moved in the past year, compared to 12.5% of the general population, indicating higher household instability and a migratory living pattern (U.S. Census Bureau, 2011).

Housing instability is also in keeping with the 25% of adolescents enrolled at the school who are technically homeless. The school is not in session year-round. Prior to winter and summer academic breaks, school officials identify caretakers for students at risk for homelessness. However, for too many, these caregivers are distant or extended family members with limited resources, living space, and invested interest. Frequently, students end up rotating among relatives—“couch surfing”—until school resumes. For them, school housing provides the most stable and secure shelter. The weeks prior to pending breaks are frequently a time of “acting out” as some students deal with worries about returning to an unstable or unsafe environment.

Academic performance was a concern for the approximately 19% of respondents who were making D’s or F’s at the beginning of the school year. Twenty-four percent had dropped out at least once and had returned to school a second time in an effort to complete their education. A significant percent of girls making D’s and F’s were those returning for a second try. While the specific reasons for dropping out are unknown, based on observations during the past several years, girls must leave school if they are pregnant, as the school cannot accommodate infants, and they often leave because they are needed at home to provide childcare for siblings or financial assistance.

In the baseline assessment, 26% of participants evidenced mild depression and another 47% had a possibility of major depression. Native females at high risk for depression are also at higher risk for substance use, anxiety disorders, and poverty (National Alliance on Mental Illness, 2009; Fleming, King, & Andrade, 1998). Untreated depression increases the likelihood of risky sexual
behaviors, unplanned pregnancies, and sexually transmitted infections. Untreated depression is the number-one cause of suicide, the third leading cause of death among teenagers in the general population, and the second leading cause of death in AI/AN youth ages 15-24 years (Indian Health Service, 2011).

Research about mental illness within the AI/AN population has been restricted due to small sample sizes, limited funding, and racial misclassification; however, available research suggests that approximately 21% of the total AI/AN population is impacted (Duran et al., 2004). At three times the rate for the general AI/AN population, the BLING findings indicate the acute need for behavioral health services for AI/AN adolescents, as well as for further research on adolescent AI/AN mental well-being.

Girls in the study have also been exposed to a considerable amount of violence, both as perpetrator and as victim. Seventy-seven percent resorted to physically aggressive responses to problems or issues, and 49% report verbally aggressive behaviors. A little over one-third admit to either being a bully or being a victim of bullying, and about 10% consistently use shunning and exclusionary tactics to intimidate or control others. Multiple studies have documented the association between substance use, poor academic achievement, mental health problems, and bullying (Gini & Pozzoli, 2009; Nansel et al., 2001). Relationally aggressive girls have more social and emotional problems and experience more loneliness, depression, negative self-perceptions, and peer rejection than others. Those who are victims of relationally aggressive behaviors also experience adjustment problems and report more depression, anxiety, and emotional distress than their peers (Crick, Casas, & Mosher, 1997). The high rates of relational aggressiveness found in this study further reflect the vulnerability of the girls and their risks for ongoing health concerns, and illustrate the negative effects of poor-to-nonexistent critical-thinking and problem-solving skills on interpersonal relationships.

Eighty-one percent of the girls have been in a dating relationship; of these, 70% have experienced some form of abuse in their relationships, compared to the national average of 20% (Foshe et al., 1996; SAMHSA, 2002). A majority of the girls (65%) in this sample were sexually active, compared to 46% in the general U.S. population for adolescent girls (CDC, 2010). In addition to the concern over sexually transmitted infections and unwanted pregnancies, risky sexual behaviors (e.g., multiple partners; early age of first sex) are potential predictors of, or risk markers for, dating violence (Suellentrop & Flanigan, 2002). In fact, 14% of the girls have experienced forced sex. Research from the CDC (2006) shows that those who are victims of dating violence are more likely to attempt suicide and engage in dangerous binge drinking activities, are more susceptible to drug use, are at risk for mental health problems (especially if the violence is emotional or psychological in nature), and are more likely to have additional health problems later in life. Those who are
involved in dating violence, either as victims or as perpetrators, are likely to continue their habits in the future, which can make it difficult to break the cycle of dating violence, as well as prevent those involved from developing healthy relationships (CDC, 2006).

Nationally, morbidity and mortality rates related to violence perpetration are staggering. The violent crime rate for AIs is two to three times greater than the national average (Bachman, Zaykowski, Kallmyer, Poteyeva, & Lanier, 2008; Perry, 2004; Wakeling, Jorgensen, Michaelson, & Begay, 2001), and violence among youth (data are available for those as young as age 12) is rapidly escalating in AI communities (Perry, 2004; Wakeling et al., 2001). From 1976 to 1999, 7 in 10 AI juvenile murder victims were killed by another AI, and AI women were victimized by violence at a rate three and a half times greater than the national average (Perry, 2004). In several counties with substantial parcels of tribal lands, the rates of murder against AI women were more than ten times the national average (Bachman et al., 2008), and AIs were twice as likely to experience a rape/sexual assault compared to all races (5 per 1,000 persons age 12 years or older vs. 2 per 1,000, respectively; Perry, 2004). Our results suggest that the participants in this sample are at considerable risk of violence, as either perpetrator or victim.

CONCLUSION

The recurring theme throughout this study was the importance of mental health to the overall well-being of this sample of female AI/AN boarding-school students, particularly as a protective factor against suicide, substance abuse, and the consequences of risky sexual behaviors. Critical-thinking skills, necessary to live a healthy and productive life, were sorely lacking, which may be linked to the mental health findings. Results point to the need to ramp up programming to develop critical-thinking and coping skills. The general demarcation age for the initiation of risk-taking and health-threatening behaviors was 13 years, indicating the importance of introducing preventive measures and protective factors during pre-teen years.

Violence in relationships has reached epidemic proportions, and prevention efforts should focus on developing interventions that work with both males and females to build positive communication and relationship skills. With more decision-making tools, students could rely less on violent solutions to problems and life events. Due to the size and scope of the problem, creative solutions should be piloted to determine the most effective use of resources rendering the greatest level of service.

Although this study was limited in that it contains a small sample size, was done in one school, and included girls only, it highlights critical issues facing AI/AN communities. Furthermore, it
invokes the need for further research and a call to other communities with AI/AN youth to investigate and incorporate adequate behavioral health programming and support services that address the life-threatening issues resulting from the lack thereof.

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REFERENCES


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AMERICAN INDIAN ADOLESCENT GIRLS: VULNERABILITY TO SEX TRAFFICKING, INTERVENTION STRATEGIES

Alexandra (Sandi) Pierce, PhD

Abstract: The Minnesota Indian Women’s Resource Center offers harm reduction programming to at-risk adolescent American Indian girls, including outreach, case management, advocacy, healthy sexuality education, and support groups. To evaluate program impact, participants are assessed at intake and every 6 months afterward for current vulnerability to commercial sexual exploitation, violence, and addiction. Evaluation results indicate frequent exposure to sex traffickers and suggest that harm reduction methods can help girls reduce risk of commercial sexual exploitation.

INTRODUCTION

This article describes American Indian and Alaska Native (AI/AN) adolescent girls’ exposure to the sex trade, their vulnerability to traffickers, characteristics of known traffickers, and the usefulness of harm reduction strategies in reducing girls’ risk of commercial sexual exploitation. Since the earliest years of the colonial era, AI women and girls have been sexually exploited for commercial purposes (Deer, 2010; Fischer, 2002), but only recently have they been considered victims rather than criminals. In the U.S. Trafficking Victim Protection Act of 2000 (TVPA), sex trafficking was recognized as a form of human slavery “in which a commercial sex act is induced by force, fraud, or coercion, or in which the person induced to perform such act has not attained 18 years of age.” Individuals that “recruit, entice, or obtain a person to engage in commercial sex acts, or to benefit from such activities” are subject to significant penalties under the TVPA (see 18 U.S.C. § 1591 and 22 U.S.C. § 7101, 7102, and 7105). The TVPA must be reauthorized every two years, and has been through the Trafficking Victims Protection Reauthorization Acts of 2003, 2005, and 2008. In each reauthorization, innovations and improvements have been added (International Justice Mission, n.d.). In 2011, a bill for reauthorization of the TVPRA was proposed to Congress, but as of March 2012, Congress had not yet passed the bill. However, at least 40 states had passed their own legislation criminalizing sex trafficking.
Very little published research has focused on the commercial sexual exploitation of AI/AN adolescents or adults in the United States, and what exists is mostly anecdotal and limited to the states of Minnesota and Alaska. The Minnesota Office of Justice Programs (OJP) interviewed law enforcement personnel, nurses, and social services providers for its 2006 human trafficking report to the state legislature, asking that they estimate the number of trafficked women and children that they had served in the previous 3 years. In reporting its findings, OJP noted, “Many people interviewed for this report mentioned anecdotal evidence and stories about Native American girls and women moved off of the reservations and forced into prostitution in the Duluth Harbor area or in the Twin Cities” (OJP, 2006 pp. 12-13). In 2007, the OJP again conducted interviews with the same groups of professionals, concluding that at least 345 AI/AN women and children had been sexually trafficked in Minnesota from 2004 to 2007 (OJP, 2007).

An analysis of 2007 Hennepin County Corrections prostitution arrest data (which included Minneapolis) found that AI/AN women represented 24% of arrests, more than 12 times their representation in the county population (Martin & Rud, 2007). Also in 2007, tribal advocates in South Dakota and northern Minnesota began alerting the Minnesota Indian Women’s Resource Center (MIWRC) and other urban AI service providers that adolescent AI girls from their communities were being trafficked into prostitution, pornography, and strip shows, and transported over state lines and internationally to Mexico. By 2008, the Federal Bureau of Investigation had identified Minneapolis as one of 13 U.S. cities having a high concentration of criminal activity around the commercial sexual exploitation of juveniles (Bortel, Ellingen, Ellison, Phillips, & Thomas, 2008).

A similar pattern is seen in Alaska. In 2010, investigators from the Anchorage Police Department and the FBI notified Alaska tribes and villages that sex traffickers were targeting AN girls visiting Anchorage to attend Alaska Federation of Natives events and conferences (DeMarban, 2010a). The Anchorage Police Department’s Vice Unit also reported cases in which traffickers had lured AN girls from remote rural areas to Anchorage for purposes of prostitution (DeMarban, 2010a; McBride, 2011). In 2009 and 2010, about one-third of women arrested for prostitution in Anchorage were AN, while ANs represented only 16% of the entire state population (DeMarban, 2010b).

The body of published research with trafficked and prostituted Indigenous women and youth in Canada is somewhat larger but still limited in scope. Small studies in Canadian cities with women and children in street prostitution have found that 14-63% of their samples were Aboriginal (which includes indigenous First Nations, Metis, and Inuit people), though these groups represented only 1-3% of the area population (Assistant Deputy Minister’s Committee on Prostitution and Sexual Exploitation of Youth, 2001; Benoit & Millar, 2001; Cler-Cunningham & Christensen, 2001; Farley & Lynne, 2000, as cited in Farley & Lynne, 2005). In a qualitative study with 22 Aboriginal communities across Canada, informants in some areas estimated that 90% of children in the local
sex trade were Aboriginal (Kingsley & Mark, 2000). More recent Canadian research has identified Vancouver, British Columbia; Ottawa, Ontario; and Winnipeg, Manitoba as major centers for the sexual trafficking of Aboriginal women and children (Assembly of Manitoba Chiefs, 2010; CBC News Canada, 2010; Chansonneuve, 2010; Farley & Lynne, 2005; Farley, Lynne & Cotton, 2005).

IDENTIFYING AND RESPONDING TO SERVICE NEEDS

Founded in 1984, the Minnesota Indian Women’s Resource Center (MIWRC) provides strength-based, culturally centered support services to AI/AN women, adolescent girls, and their families in six core areas: an accredited early learning center, emergency and supportive housing, a library and learning center that provides training workshops and educational materials on issues impacting the wellness of AI families and communities, a family stabilization program, support and advocacy for gender violence and other traumas, and a co-occurring disorder treatment program.

In addition, MIWRC’s Sacred Journey Division offers two harm-reduction programs to AI/AN women and girls struggling with chemical use; the problems that accompany it; and unsafe peer networks, relationships, neighborhoods, and/or home environments. Oshkiniigikwe (“Young Woman” in the Ojibwe language) serves adolescent AI/AN girls and young women ages 11-21, while Healing Journey serves adult AI/AN women. In 2008, participants in Healing Journey and Oshkiniigikwe programs began disclosing that they or their friends were involved in trading sex, often at the behest of a family member or “boyfriend.” Concerned that these reports might signal a growing trend, MIWRC implemented a two-pronged response. First, with the support of the W.K. Kellogg Foundation, MIWRC contracted a research affiliate (this author) to gather all available information on the trafficking and/or prostitution of AI/AN women and girls in Minnesota, to inform the development of appropriate victim services at MIWRC. Specific areas of interest were the size and scope of the problem, locations where AI/AN women and girls were being trafficked and prostituted, pimps’ “recruitment” strategies specific to AI/AN women and girls, circumstances that were making young AI/AN girls vulnerable to commercial sexual exploitation, barriers to escaping the sex trade, and the types of supports and services that were most needed.

The result was a report titled *Shattered hearts: The commercial sexual exploitation of American Indian women and girls in Minnesota* (Pierce, 2009). Because so little had been published on the subject in relation to AI/AN women and girls, the report triangulated several sources of information, including:

- Two round table discussions with advocates and other frontline staff working directly with AI/AN women and girls in crisis situations, in which participants shared information about prevalence and patterns;
• Evaluation data from Oshkiniigikwe program client intake and follow-up assessments over a 6-month period;
• Secondary analysis of the 2007 Minnesota Student Survey (a state-sponsored population-based survey completed by students in schools every 3 years);
• Secondary analysis of non-reservation AI data from the 2006 Wilder Research *Homeless in Minnesota* study;
• Publications and reports developed by and for government agencies, advocacy groups, and foundations in the U.S. and Canada;
• Articles published in human services, social services, law enforcement, and social science journals; and
• Informational interviews with law enforcement and corrections personnel.

MIWRC’s second response to clients’ disclosures of commercial sexual exploitation and trafficking was expansion of its Oshkiniigikwe Program in 2008 to reduce AI/AN girls’ vulnerability to commercial sexual exploitation. The program’s trauma-centered culture of care has always emphasized meeting girls “where they are” to build upon strengths and reduce exposure to potential harm. Outreach workers and case managers (professionals who have academic training, experience with Oshkiniigikwe’s service population, and knowledge of AI history and cultural perspectives) focus on building trusting relationships free of judgment that support girls’ right to determine their own priorities and make their own decisions when they feel ready to do so. Oshkiniigikwe staff initially worked to reduce AI/AN girls’ risk of addiction and violent victimization by providing 1) intensive case management to address their housing, safety, medical, mental health, and other crisis needs; 2) holistic health care (e.g., acupuncture, acupressure and massage as a source of safe, healing touch); 3) cultural teachings; and 4) space and supplies where participants could learn and work together on traditional beading, sewing, and crafts projects. Case managers also worked with school personnel to help girls develop individual education plans that support school completion; monitored their medical, mental health, and dental care needs; linked them to culturally responsive providers; and drove them to appointments as needed. In addition, Oshkiniigikwe staff served as liaisons to County Child Protection workers whenever a girl had an open case or was in need of intervention due to sexual abuse or commercial sexual exploitation at home.

The expansion of Oshkiniigikwe’s focus included adding a commercial sexual exploitation risk assessment component to the program’s intake and follow-up assessment process. MIWRC also implemented the Phoenix Project, a partnership between Oshkiniigikwe and the Greater Minneapolis Council of Churches’ Division of Indian Work (DIW), to provide outreach programming at two Minneapolis alternative high schools that were specifically designed to serve AI/AN youth. Phoenix workers offered support services to all youth that disclosed involvement in or exposure
to commercial sexual activity, referring girls to Oshkiniigikwe at MIWRC and boys to DIW’s Strengthening Family Circles program. Oshkiniigikwe’s staffing was increased from 1.0 FTE to 2.0 FTE to accommodate weekly Phoenix outreach and to ensure that Oshkiniigikwe girls could access crisis assistance on a daily, drop-in basis.

Through the expanded programming, AI/AN girls in Oshkiniigikwe and Phoenix support groups received education about commercial sexual exploitation; sex traffickers’ deliberate targeting of vulnerable girls; and methods used by traffickers to force or trick girls into prostitution, stripping, and pornography. Staff began working more closely with girls in developing and regularly updating safety plans to reduce their vulnerability to traffickers. Each girl’s safety plan identified people, situations, and behaviors that could put her at risk of sex trafficking, other forms of sexual exploitation, and violence, and described strategies of her own design that she would employ to reduce that risk. MIWRC also developed an informal partnership with the Minneapolis Police Department’s Sex Crimes Unit, which began referring all AI/AN girls and women reporting sexual assault to MIWRC for additional support services. In return, MIWRC’s Sexual Assault program staff assisted victims seeking services at MIWRC that had not made police reports by explaining the reporting process, accompanying victims to make police reports, staying with them through the entire evidence-collecting process, transporting and accompanying them to court dates, and providing ongoing support.

DATA COLLECTION METHODS

Two types of information gathered by MIWRC are discussed in this article: qualitative data from two round table discussions and quantitative data collected for evaluation of the Oshkiniigikwe program.

Round table discussions

Upon finding that no information was available that provided a detailed look at the sex trafficking and/or commercial sexual exploitation of AI/AN women and girls in Minnesota or anywhere else in the U.S., MIWRC and its research affiliate discussed the lack of information with colleagues providing services to AI/AN women in crisis situations. Based on these colleagues’ suggestions, the research affiliate began planning for two round table discussions with advocates and organizations serving AI/AN women and youth in crisis in Duluth, Minnesota’s international port on Lake Superior, and in the Twin Cities metro area. Prior to contacting potential participants, the research affiliate discussed the project with the Minnesota Department of Health’s IRB. Since the intent was not to generate or contribute to generalizable knowledge (the federal definition of
“research”) and because participants were only being asked to discuss their general observations and suggestions as professionals, the IRB deemed the round tables to be “non-research” and exempt from further IRB review.

MIWRC and its research affiliate reached out to a variety of urban AI programs in Minneapolis/St. Paul and Duluth, tribal programs in Northern Minnesota, and AI elders and other respected community leaders, describing the goals of the round tables and requesting recommendations for knowledgeable and interested individuals to be invited. Many volunteered themselves, and MIWRC’s research affiliate contacted each additional person or program that had been recommended. In each of these contacts, the researcher: 1) described the Shattered Hearts project and goals for the round table discussions, 2) requested feedback on the potential participant’s interest in joining a discussion about sex trafficking of AI women and girls, and 3) requested suggestions for any additional people or programs that should be invited to participate. Following these conversations, MIWRC sent formal letters of invitation by e-mail and postal mail to all of the 41 recommended individuals and/or their programs. Invitations described the Shattered Hearts project, its funder, and the goals for the round table discussions.

Of the 17 people invited to attend the Duluth round table in January 2009, 12 attended. Of the 22 people invited to attend the Minneapolis round table in March 2009, 18 attended. These 30 participants represented tribal and urban programs providing crisis/emergency housing, basic needs, domestic violence and sexual assault advocacy, runaway and homeless youth services, police prostitution diversion programs, and other human and social services. Most attendees were AI, all were women, and all had worked directly with AI/AN women and/or youth involved in the sex trade.

The Duluth round table was hosted by the Fond du Lac Band of Lake Superior Ojibwe Health and Human Services Department, and the Minneapolis round table was hosted by the Division of Indian Work. MIWRC provided lunch for participants at both round tables, but no other incentive or compensation was offered. The two 4-hour discussions were co-facilitated by MIWRC’s Executive Director and the research affiliate, recorded with participants’ consent, transcribed verbatim, and then analyzed qualitatively using a grounded theory approach.

**Evaluation data**

To evaluate Oshkiniigikwe’s impact and to periodically gather information about current risk areas for case planning, case managers conduct face-to-face interviews with each Oshkiniigikwe participant at program entry (baseline) and every 6 months afterward. Interviews are scheduled in advance and are conducted privately in the case manager’s office. Questions address factors that increase risk of addiction and violent victimization, including chemical use, poor relationships with parents/other adult caregivers, exposure to physical and sexual abuse or violence, inadequate
support networks, lack of housing safety and stability, physical and mental health diagnoses and care, traumatic brain injury and/or fetal alcohol spectrum disorders (FASD), and poor educational attainment and school attachment. On the form completed during these interviews, questions are organized in three columns so staff can quickly and easily compare participants’ baseline and follow-up responses. The first column contains questions asked at intake; the second and third contain those asked at 6-month and 12-month follow-up, respectively.

When MIWRC expanded its Oshkiniigikwe programming in 2008, its evaluator (contracted per state funding requirements) designed a commercial sexual exploitation risk assessment form and protocol that were added to the Healing Journey and Oshkiniigikwe intake process. Questions address family and friends’ engagement in the sex trade, personal involvement in the sex trade, traffickers in participants’ environments and/or social networks, whether participants have been asked or pressured to pose for pornography, and whether they have been asked or pressured to recruit other girls/women to sell sex. If a participant reports current or previous involvement in commercial sex, additional information is recorded, such as age first sold for sex, pimp’s recruitment and control strategies, and people in the participant’s life that have threatened to harm her or a loved one if she did not cooperate.

Initially, case managers filled out the commercial sexual exploitation risk assessment form during the participant interview. In July 2010, the form was expanded to include additional items and details. Due to concerns that writing down such sensitive information in great detail during the intake interview could trigger participants’ fear and/or distrust, case managers use a one-page list of topics as a prompt to ensure that they address all items on the form. They also jot down brief reminder notes during the interview, then fill out the form immediately after the participant leaves. The expanded form also provides space for staff to record new information disclosed after participants grow more comfortable with the program and the staff, as well as the date of disclosure.

Oshkiniigikwe case managers also document individual participation in program activities and requests for assistance, using a daily “checkbox” form that allows multiple activities to be quickly recorded for each girl attending that day. To provide an avenue for confidential feedback, girls participating in Oshkiniigikwe and Phoenix Project education and support groups at school complete anonymous participant feedback surveys every 6 months. Blank surveys are clipped to envelopes; each girl completes a survey in private, seals it in an envelope, and returns it to the staff.

To ensure confidentiality of participants’ records, only ID numbers are used on evaluation forms. The evaluator periodically visits MIWRC to pick up copies of completed intake and follow-up assessment forms and activity logs (the program retains the originals), as well as envelopes containing completed participant feedback surveys. The evaluator enters data from the copied forms into password-protected SPSS databases, then shreds the forms. All participants whose
information is described in this document signed standard consent forms authorizing the use of their information for case management and for staff to use in helping participants apply for outside services and resources. These participants also consented to allow use of their de-identified data for other purposes permitted by law, including program evaluation and presentations and publications describing the program and its outcomes. As an additional safeguard, the Minnesota Department of Health Institutional Review Board reviewed all data collection forms and protocols, determined the data collection to be routine program evaluation activities and exempt from further IRB review, and approved use of the evaluation data for this article.

FINDINGS

Round tables

In the Minneapolis and Duluth round table discussions, advocates working directly with prostituted AI/AN women and girls described male and female pimps using “finesse” pimping methods to lure AI girls off reservations to the city. These methods included telling girls that they are so beautiful that they should try modeling or being a dancer, offering road trips or shopping trips to “the city,” offering to “take care” of them with a free place to stay, buying them jewelry and clothing, and generally making them feel special. The advocates reported that, once isolated from their support systems, girls discover that the “modeling” is pornography, “dancing” is in a strip club or at private parties, and a pimp’s eventual request that they “help out” leads to trading sex.

Round table participants also described “guerilla” pimping methods, which involve using physical and sexual violence, or threatening to seriously harm a loved one, to force girls into prostitution. Those making the threats were often other girls affiliated with a pimp, and were usually gang members. One advocate described her client’s experience: “She didn’t want to do this [prostitute] and she thought she could walk away, but she couldn’t. Those girls actually beat the crap out of her, so she ended up in the hospital…she was a mess and they beat the hell out of her.” The round table participants’ descriptions of finesse and guerilla pimping methods directly paralleled those identified in Canadian research with prostituted and trafficked Aboriginal women and youth (Native Women’s Association of Canada, 2007; Nimmo, 2001; Sethi, 2007; Urban Native Youth Association [UNYA], 2002).

Several participants providing crisis services to adolescent AI/AN girls described factors they had noted in their work that increased girls’ risk of being trafficked into prostitution. The most frequently mentioned factors included being runaway, thrownaway (defined as being under age 18 and abandoned or forced to leave the family home), or homeless, because girls in such circumstances are very vulnerable to offers of affection, safety, and “jobs” from pimps posing as a kind older
friend or boyfriend. Advocates reported that these offers can appear especially inviting to girls that have not completed high school or gained any job skills. The round table participants’ descriptions of most common vulnerability factors also matched those reported in Canadian studies of sexually trafficked Aboriginal youth (Kingsley & Mark, 2000; UNYA, 2002).

In both cities, participants agreed that highly visible prostitution in AI/AN girls’ neighborhood environments is a major risk factor. Almost all cited AI/AN girls’ constant exposure to abuse, exploitation, and violence in their families and peer networks as an important risk factor, describing it as one of the most devastating impacts of generational trauma. Some participants reported having worked with prostituted girls that were particularly vulnerable to traffickers due to FASD, addiction, mental or emotional vulnerability, post-traumatic stress disorder, or a combination of these cognitive and mental health issues.

Participants in both round tables reported two primary methods used by pimps to prevent girls from escaping. First, pimps pose as boyfriends, deliberately fostering girls’ emotional dependency and self-doubt by giving and withholding affection, then blaming the girls for this change in mood. Second, pimps practice strategic use of violence and threats to keep girls off balance and in constant fear. A severe shortage of crisis shelters is the major barrier for AI/AN girls seeking to escape their pimps. Currently, there are no shelters in the U.S. designed to respond to the unique trauma-related and cultural needs of trafficked and prostituted AI/AN girls.

**Commercial sexual exploitation risk assessments**

Forms were completed at intake with two cohorts of Oshkiniigikwe participants, one group entering August 2008 to March 2009, and a second entering July 2010 to June 2011. In all, 58 AI girls/young women ages 11-21 completed the commercial sexual exploitation risk assessment portion of the intake assessment. None were AN. Average age at program entry was 16, with 55% of participants between ages 11 and 16. Analysis of the intake assessment data revealed participants’ significant exposure to commercial sexual exploitation prior to program entry (see Table 1).
Table 1
AI Girls’ Vulnerability to Commercial Sexual Exploitation at Oshkiniigikwe Program Intake

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had traded sex</td>
<td>20</td>
<td>34%</td>
</tr>
<tr>
<td>Had a family member involved in prostitution</td>
<td>15</td>
<td>26%</td>
</tr>
<tr>
<td>Had one or more friends involved in prostitution</td>
<td>24</td>
<td>41%</td>
</tr>
<tr>
<td>Knew a pimp personally</td>
<td>18</td>
<td>31%</td>
</tr>
<tr>
<td>Were sexually trafficked as children</td>
<td>15</td>
<td>26%</td>
</tr>
<tr>
<td>Had regular contact with gang members</td>
<td>26</td>
<td>45%</td>
</tr>
<tr>
<td>Sustained a serious head injury during an assault</td>
<td>18</td>
<td>31%</td>
</tr>
<tr>
<td>Diagnosed with depression or PTSD</td>
<td>13</td>
<td>22%</td>
</tr>
<tr>
<td>Were currently homeless</td>
<td>13</td>
<td>22%</td>
</tr>
<tr>
<td>Ran away from home 2+ times in past 12 months</td>
<td>7</td>
<td>12%</td>
</tr>
</tbody>
</table>

Some girls also described friends working as nude dancers or strippers at private parties, as well as their own or their friends’ involvement in the production of pornography, but these numbers are not reported because they are relatively small.

The most surprising finding was the proportion of girls that reported knowing a pimp personally. Male and female pimps were equally represented in girls’ descriptions of family members and friends involved in trafficking others into prostitution, but several girls reported that their boyfriends sold them and/or other girls or women for sex. Overall, the proportion of girls reporting exposure to and/or involvement in commercial sex is disturbingly large, and it is likely that these data actually reflect at least some under-reporting, since they were collected at intake when girls had not yet developed any level of trust for program staff.

Reported exposure to violence and threats was also quite high in intake assessments, as was injury due to drug/alcohol use. Of the 58 girls, 18 (31%) said they had sustained a serious head injury as a result of being assaulted; 20 (34%) reported a head injury due to falling while under the influence of drugs or alcohol. Almost half (45%) reported regular contact with gang members in their neighborhoods, families, and/or peer groups. Of these, over one-third said that female gang members had threatened them.

Other factors that round table participants described as contributing to AI/AN girls’ vulnerability to sex traffickers were found in the 58 girls’ intake assessments. Eleven girls (29%) had received a mental health diagnosis prior to Oshkiniigikwe intake, usually depression or depression...
with anxiety. Almost one-fourth (22%) described themselves as homeless, and among participants ages 16 or younger, 35% had run away from home two or more times in the previous 12 months, averaging almost 6 runaway attempts that year.

Other intake and follow-up data

The findings reported here describe 35 girls that completed Oshkiniigikwe intake assessments during the most recent fiscal year (FY2010-2011, July 1, 2010 to June 30, 2011). Comparisons of baseline and follow-up measures represent 17 girls (49%) that also completed follow-up assessment interviews.

Over one-third (34%) of the 35 girls participating in Oshkiniigikwe during FY 2010-2011 entered the program through Phoenix Project outreach at alternative schools. About one-fourth (23%) were self-referred and another 17% were referred by a friend that was familiar with the program. The remaining 25% were referred by a parent or guardian, another MIWRC program, another AI program or agency, or juvenile justice workers.

During intake interviews, one-third of girls (34%) reported prior abuse, most frequently by a parent, foster parent, other family member, or friend of the family. One in five (20%) had been involved with police at least once in the 6 months prior to Oshkiniigikwe intake. Forty percent reported alcohol use in the 6 months prior to intake, 46% reported marijuana use, and 17% had been previously diagnosed as chemically dependent by a chemical dependency professional licensed by the State of Minnesota.

Due to the small number of girls completing follow-up assessments (n = 17), most comparisons of baseline and follow-up measures are stated generally to protect participants’ confidentiality. Also, some girls entered a residential juvenile treatment facility in the 6 months following program intake and were still in treatment at 6-month follow-up. Though currently clean and sober and in contact with Oshkiniigikwe case managers, these girls did not complete follow-up assessment interviews and so are not represented in these comparisons.

Over half of the 17 girls completing follow-up assessments had reported using alcohol in the 6 months prior to program entry. At follow-up, 47% reported alcohol use in the previous 6 months, including five girls that had reported no prior alcohol use at program intake. At intake, 24% of girls reported having used drugs in the past 6 months; at follow-up, 50% reported drug use in the previous 6 months. In both assessment periods, girls that had used drugs reported marijuana as the drug most frequently used. Illegal use of prescription medications was second, but numbers were much smaller. At 6-month follow-up, 47% of the 17 girls reported they were currently clean and sober; 29% had been drug- and alcohol-free for at least 6 months.
Of the girls that reported being homeless at intake, two-thirds were no longer homeless at follow-up, and two-thirds of those that reported current abuse at intake were no longer in that situation at follow-up. Though most girls reported positive relationships with parents/adult caregivers at intake, 100% of those reporting negative relationships at program entry said that these relationships had improved and become more positive at follow-up.

Overall, girls reported increased support from clean and sober family members and friends at follow-up, and reduced contact with drinking and using family and friends: 41% of girls reported clean and sober family support at intake, and 59% reported such support at follow-up. While only one girl had support from clean and sober friends at intake, 29% reported this support at follow-up. Over one-fourth (29%) reported less contact with drinking and using family members, and 47% had less contact with drinking and using friends. In addition to healthier social support networks, 53% of girls reported increased support from other MIWRC programs and other agencies’ social service programs at follow-up.

Regarding school attachment and completion, two-thirds of girls with poor attendance at intake had improved their attendance and were making progress at follow-up. Of girls not in school at intake, 20% had completed high school equivalency in the 6 months prior to follow-up.

The number of girls experiencing police involvement changed very little from intake to follow-up, but the girls reporting police contact, and the reasons for the contact, differed across the two assessment points. At intake, contact was related to girls’ own illegal actions, and none of these girls had repeated involvement with police in the 6 months after intake. Among the set of girls experiencing police involvement after program entry, the reasons were related to their own victimization. This finding appears to be related to girls’ exposure to violence in their environments, which did not show the same level of improvement as other risk factors. Of the girls reporting current threat of violence at intake, 33% reported the same or increased threat at follow-up; and, though only 18% of girls reported getting into physical fights at intake, 18% (not consistently the same girls) also reported physical fights in the 6 months prior to follow-up.

**Participation logs**

Analysis of FY2010-2011 Oshkiniigikwe participation log data shows fairly strong attendance, despite the fact that scheduled activities took place less frequently during the school year (after school 2 days per week). Activity log data were available for 34 girls that participated at least once. On average, girls attended 24 scheduled activities over the course of the year, the most popular of which was the weekly Oshkiniigikwe support group where they discussed issues confronting them in their efforts to live a healthier lifestyle. Though 15 girls (45%) attended 3 or fewer support group sessions, the other 19 girls averaged almost 7 sessions each.
Two other activities also had fairly good attendance: guest speaker events and holistic health care (acupuncture, acupressure, and massage therapy sessions). A total of 28 girls (82%) attended at least one guest speaker event, with 13 girls (38%) attending four or more. The topics resulting in highest attendance were sexual exploitation, domestic violence and sexual assault, gang violence, and emotional health. Fifteen girls (44%) attended holistic care sessions where they received acupuncture, acupressure, or massage therapy, averaging more than 4 visits each.

In addition to scheduled program activities, girls also sought out case managers for individual support and problem-solving. On average, girls visited their case managers for private support more than 16 times over the course of the year. Family issues were the most common reason. Girls averaged more than 8 visits with case managers to discuss problems at home and develop strategies for dealing with them. Other common reasons for seeking individualized support included help meeting basic needs (food, clothing, etc.), advocacy in working with County Child Protection workers or investigations, and assistance in developing Individualized Education Plans with schools.

**Oshkiniigikwe participant feedback**

Of the 17 Oshkiniigikwe girls completing intake and follow-up assessments during FY 2010-2012, 12 (71%) also completed anonymous participant feedback surveys. They were most enthusiastic about MIWRC feasts and social events, which 83% rated “excellent” and 8% rated “good.” Traditional arts and crafts also received high ratings; 75% of girls described them as “excellent” and 25% as “good.” The vast majority of girls (92%) rated education about healthy sexuality, healthy family interactions, and healthy eating, as well as problem-solving with Oshkiniigikwe case managers, as either “excellent” or “good.”

In regard to girls’ perspectives on how much the program helped them with life issues, all 17 girls reported that the program had helped them “a lot” or “some” in having happier and healthier romantic relationships, avoiding situations that could lead to police involvement, avoiding abuse or violence, and dealing with grief and loss issues. Almost all girls (92%) said the program had helped them have healthier and happier relationships with their families, take care of problems before they become a crisis, and stay away from people that are bad for them. Two-thirds (67%) said they had “improved a lot” in taking care of their own physical, emotional, and spiritual needs; respecting themselves and their right to be treated well; and having more people and resources to help them live a healthy life.

In regard to abstinence from alcohol and drugs, one-third of girls completing the feedback surveys (33%) said that the program had “helped a lot” with staying sober for longer periods of time, and half (50%) said it “helped some.” All 17 girls also reported some improvement in facing problems without drinking or using, and in developing sober friendships.
Girls’ feedback regarding how well Oshkiniigikwe staff worked with them was also very positive. All of those completing the feedback survey said the Oshkiniigikwe staff “work with me very well” in treating them with respect and in caring about their well-being, and 92% said staff “work with me very well” in problem-solving and in providing a safe space for healing.

**Phoenix Project support group feedback**

The weekly Phoenix Project girls’ support groups at alternative schools involved 22 girls between July 2010 and June 2011. In participant feedback surveys, girls were asked to rate the types of information that they received in the groups. Those most frequently rated “most important” included “what you can do if someone tries to pressure you to sell sex” (96%), “knowing where you can go for help” (96%), “having a chance to talk about this issue with other Native youth” (91%), “learning how to recognize sexual exploitation” (86%), and “having Native adults you can talk with who will not blame or judge” (82%).

Girls attending Phoenix Project support groups most frequently reported experiencing “huge improvement” in “feeling confident that you have the right to be safe and make your own choices” (82%), “knowing when someone is trying to exploit you sexually” (77%), and “avoiding sexual situations that you do not want” (77%). The types of support described as “a huge need” by this group of girls included “having a safe place to stay” (73%), “having the support of adults who won’t blame or judge” (73%), and “getting information to AI youth that there is help out there” (73%).

**DISCUSSION**

To our knowledge, MIWRC offers the only programming for AI adolescent girls that have been sexually trafficked or are at high risk of being trafficked. Even though the number of girls participating in MIWRC’s recent Oshkiniigikwe and Phoenix activities was quite small, the need for such services appears significant, at least among the AI/AN girls in MIWRC’s service area.

The absence of safety in Oshkiniigikwe girls’ lives, and their exposure to a highly visible sex trade in their environments, appear to be critical contributing factors in their vulnerability to sex trafficking and commercial sexual exploitation. Among Oshkiniigikwe participants, homelessness and “couch-hopping” are common responses to unsafe or unsupportive home environments. The proportion of Oshkiniigikwe girls that reported having run away from home in the past year (35%) is alarming. AI/AN girls’ responses to the 2010 Minnesota Student Survey, a statewide population-based survey of students in public schools, suggest that the problem is widespread: 16% of 6th-grade AI/AN girls and 22% of 9th-grade AI/AN girls reported they had run away from home at least once in the past year (Minnesota Student Survey Interagency Team, 2010).
Oshkiniigikwe case managers report that some pimps have played on this vulnerability by framing prostitution as a form of empowerment in which girls can receive money for what was already taken for free at home, and by posing as loving boyfriends and protectors. Given that many of these girls also experienced childhood sexual exploitation, it is not surprising that they are extremely reluctant to view themselves as victims and continue to insist that their “boyfriends” love them, despite their demands that the girls “help out” through prostitution.

The prevalence of gangs in Oshkiniigikwe girls’ family and peer networks, especially gang members involved in the sex trade, also makes it difficult for them to find safety or stability. Girls’ reported involvement in physical fights may simply reflect the amount of violence, threats, and gang contact they experience in their environments, and it appears that at least some fighting may be a response to guerilla pimping strategies by female gang members.

Despite these challenges, Oshkiniigikwe appears to have positive impacts in girls’ lives that can help reduce risk of addiction and commercial sexual exploitation. These impacts include improved safety and stability in housing situations, healthier sources of social support, and improved relationships with parents/adult caregivers. Input from the girls served through the program suggests that they most value having caring adults that do not judge them but, instead, provide education and support based on cultural norms for trusting girls to make their own decisions at the time they feel ready to do so.

LESSONS LEARNED

The key lesson learned for Phoenix Project and Oshkiniigikwe case managers is that routinely asking AI/AN girls entering harm reduction programs if they have been involved in trading sex opens the door to disclosure of commercial sexual exploitation and trafficking. Even if a sexually exploited girl is too frightened or ashamed to disclose at time of intake, she still gains a sense that others must have had the same experience, since the question would not be asked otherwise. Routine screening is also useful for estimating the lower-bound prevalence of commercial sexual exploitation in Oshkiniigikwe’s service population.

Oshkiniigikwe’s approach is patterned after lessons learned from the domestic violence movement. Before battered women were widely recognized as victims of domestic violence, asking an injured woman if she had been battered by her partner was considered inappropriate, due to concerns that asking the question might cause her distress and make her situation even worse. Most women do not disclose domestic violence without prompting (Gerbert, Abercrombie, Caspers, Love, & Bronstone, 1999), so few women reported.
Once social service and health programs responded to the domestic violence movement by implementing routine screening for domestic violence, the number of women reporting it dramatically increased, stigmatization of victims declined, and, as a result, battered women were empowered to talk with others about their experiences. A similar pattern is occurring within Oshkiniigikwe. A few girls that disclosed current involvement in trading sex at intake received extensive support and assistance from case managers, recognized that they had been exploited by people claiming to love them, and over time escaped those situations. As these girls continued their healing process, they also began talking in support groups about what had happened to them, which led to other girls realizing that being sexually traded by boyfriends or family members was not normal. The issue became a central topic of discussion, with girls requesting more information about commercial sexual exploitation. Staff responded by introducing additional awareness-building activities in Oshkiniigikwe groups and though guest speaker events. Topics included indicators of sexually exploitive relationships, pimps’ recruitment and control methods, factors that increase vulnerability to being sold for sex, and sources of help for people wanting to escape the sex trade.

A second lesson learned is the critical importance of using outreach at schools to link at-risk girls to culturally grounded, trauma-centered, long-term support. AI/AN girls that received healthy sexuality education and support groups in a confidential, school-based setting were able to learn about commercial sexual exploitation and traffickers’ methods, talk about their exposure to the sex trade, and receive support if they discussed problems that could put them at risk of trafficking. When girls in Phoenix groups described situations putting them at risk of trafficking, a “smooth handoff” by Phoenix workers to onsite Oshkiniigikwe staff was immensely helpful in girls’ transitioning to intensive case management. Even so, there is tremendous unmet need for a coordinated array of culturally based, trauma-centered, multilevel services provided by fully trained and experienced AI personnel. These include: 1) street outreach; 2) 24-hour safe houses where AI/AN girls can shower, eat, talk with a case manager, and obtain referrals for medical, mental health, clothing, and other emergency needs; 3) a continuum of housing options in which emergency shelter is linked to a residential trauma recovery center and supportive housing; and 4) long-term harm-reduction and intensive case management support. As an agency, MIWRC is only able to address a small portion of sexually trafficked and at-risk AI adolescent girls’ needs. It is a safe place for girls to go 5 days a week from 8 a.m. to 4:30 p.m., but current Oshkiniigikwe funding supports only 2 days of scheduled activities per week.

The fourth major lesson learned is the critical importance of patience over a long period of time, which is an absolute requirement for working with this population. As noted earlier, it takes some girls as long as 2 years before they are able to recognize or admit that they have been sold for sex by a pimp. Oshkiniigikwe staff has found that, as girls build trust in their case managers,
they are more open and honest about their situations, which makes it possible for staff to offer additional resources and supports. However, the primary focus must be on empowering by providing information and offering choices rather than expecting girls to accept or act upon offers of help or advice.

MIWRC’s final major lesson learned is that anyone working with this population must practice intensive self-care. Oshkiniigikwe case managers routinely hear very disturbing stories and report feeling emotional impact when a girl is deeply attached to a violent pimp, sustains major physical injury, or is spiraling more deeply into addiction. They note the importance of balancing active, ongoing efforts to deal with their own secondary trauma sustained through this work against the responsibility for assuring traumatized girls that they will never give up on them. Case managers sustain their spiritual and emotional balance by being deeply involved in their tribal cultures, ceremonies, and communities; they take care of themselves physically through exercise, healthy eating, and regular engagement with the natural world. Culturally responsive counseling and mental health support are also readily available, if needed. The entire staff meets at least weekly to talk about challenges in working with individual participants, support one another, and work together on solutions. They also have the option to attend training on self-care and stress management. These activities reflect the overall organizational culture of MIWRC, which values and supports staff wellness as an essential component of responding to the needs of the AI/AN women and girls in a good way.

FUTURE RESEARCH

The data collected to date are very limited and confined to a single organization in a small geographic area. There is a great need for additional evaluation studies and research that allows comparison of AI girls’ vulnerability and experiences regarding sex trafficking across multiple programs serving AI/AN girls in diverse geographic regions. Sex trafficking is an underground phenomenon, so the usual population-based methods for establishing generalizable knowledge are not feasible. However, comparisons of prevalence and other patterns in the service populations of programs that address crisis needs or provide harm reduction support can be made in diverse areas with large populations of urban AIs, if all programs use the same risk assessment tool. MIWRC is currently developing relationships with several other programs to enable such comparisons.

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REFERENCES


Abstract: The Fort Peck Sexual Health Project: A Contextual Analysis of Native American Men is a community-based participatory research (CBPR) project that explores the extent to which knowledge, attitudes, and beliefs about sex, intimate relationships, and mental health influence sexual and reproductive health. For the purpose of this study, the influence of age, fatherhood, and mental health factors related to historical trauma and loss on young American Indian (AI) men’s intention to use birth control was examined. In-depth interviews were conducted with 112 Native American men between the ages of 18 and 24 years. The mean age reported was 21 years. Thirty-eight percent of the young men reported having children. The young men reported experiences of historical trauma during their lifetime as well as emotional responses due to historical losses. Logistic regression analysis indicated that, as age increased, young men were less likely to use birth control to prevent pregnancy. The young men who reported feelings of loss due to experiences related to historical trauma and loss were more likely to use birth control. Findings from this study suggest that public health efforts to educate AI men about planned pregnancies and the use of birth control may be most effective in adolescence. Public health programs that address mental health concerns such as the emotional responses due to historical losses may assist young AI men in their decision to use birth control.
INTRODUCTION

Sexual and Reproductive Health and Young American Indian (AI) Men

By age 20, 9 out of 10 males have had sexual intercourse (Alan Guttmacher Institute [AGI], 2002). Sexually experienced young males are at increased risk of having multiple sex partners as they progress into adulthood, which increases their chances of contracting a sexually transmitted infection or having an unintended pregnancy with a sex partner (AGI, 2002). While most young males report using a condom the first time they have sexual intercourse, condom errors are common, posing risks for unintended pregnancy; also, as young males become more sexually experienced, condom usage declines, causing them to be more reliant on female contraceptive methods which provide no protection from sexually transmitted infections (AGI, 2002). Moreover, the decline in condom use as men age and become more sexually experienced suggests that the use of contraceptive methods to prevent or plan pregnancies is the responsibility of women (Kraft et al., 2007). However, some studies have found that men do accept responsibility for contraceptive use and that within relationships there is shared decision-making regarding contraceptive use (Grady, Tanfer, Billy, & Lincoln-Hanson, 1996; Harvey, Bird, Galavotti, Duncan, & Greenberg, 2002; Soler et al., 2000).

Utilization of sexual and reproductive health services by young men is influenced by factors such as cultural attitudes, beliefs about masculinity, and access to insurance (Marcell, Ford, Pleck, & Sonenstein, 2007). Only 4% of Title X Family Planning clients are males, indicating that young males are not seeking or utilizing family planning services as a means to understand and address their sexual and reproductive health needs (AGI, 2002). In addition, unintended fatherhood is higher among young men from racially and ethnically underrepresented populations (Centers for Disease Control and Prevention, 2003). Specifically, compared to the national average, young AI men are more likely than those of any other racial or ethnic group to have sexual intercourse and are less likely to use contraceptives and condoms to prevent pregnancy. In addition, the incidence of AI teen fatherhood is higher than the national average (Kaiser Family Foundation, 2004).

Little is known about how to provide primary pregnancy prevention strategies for young AI men and their partners that is culturally relevant, supports AI beliefs about pregnancy, and is effective. While previous research has found that teen parenthood is viewed as a concern in AI communities, the high value placed on children, as well as cultural and familial positive beliefs about pregnancy, provided strong support for parenthood regardless of the parents’ ages (Kaufman et al., 2007). Furthermore, some young people from Indigenous communities value pregnancy and childbearing as a traditionally held practice and an important element in a committed relationship (Devries, 2007). Despite positive cultural beliefs about pregnancy, other factors, such as low socioeconomic status, inadequate access to preventive sexual and reproductive health care services, and the destruction...
of traditional ways and culture due to colonization, have also been suggested as possible influences on young AIs’ high-risk sexual behaviors that may lead to unplanned pregnancy (Devries, Free, Morison, & Saewyc, 2008). In addition, Kaufman et al. (2004) found that stress and trauma play a role in sexual risk taking, which may influence use of birth control to prevent or plan pregnancies among AI youth. Mental health issues (e.g., depression) have also been associated with externalizing behaviors such as high-risk sexual activity among young men—specifically, those from culturally diverse populations (Buzi, Weinman & Smith, 2010). It continues to be unclear what types of sexual and reproductive health preventive strategies may be effective and culturally relevant for young AIs, particularly AI men (Garwick, Rhodes, Peterson-Hickey, & Hellerstedt, 2008; Kirby, 2002).

The purpose of this paper is to present initial findings from The Fort Peck Sexual Health Project: A Contextual Analysis of Native American Men. Specifically examined is the extent to which mental health factors, such as historical trauma and loss, influence young AI men’s intention to use birth control to prevent pregnancy with their partner.

The Fort Peck Reservation is located in Montana, where pregnancy and birth rates for AI teens ages 15 to 19 years exceed the state average. In 2005, the teen pregnancy rate for Montana’s AIs was 127 per 1,000, compared with 49 per 1,000 for the state as a whole (Montana Department of Health and Human Services [MT DPHHS], 2008). The proportion of teen births to AI mothers has increased since 2000 to nearly 30% of all teen births in the state. Between 2001 and 2005, more than 60% of the babies born to a Montana teen in the age range of 18-19 years were born to an AI mother. At Fort Peck, teen and young adult pregnancy rates for 2001 through 2005 were significantly higher than both Montana’s rates and national rates for the same time period. Furthermore, in Montana, efforts to gather information on the influence of AI males on sexual and reproductive health disparities have been limited due to competing priorities, scarce resources, and jurisdictional boundaries (MT DPHHS, 2008).

Mental Health

Mental health issues for young men, such as depression, anxiety, grief, and loss, are an increasing public health concern (Breland & Park, 2008). In particular, mental health conditions among AI populations have been associated with both historical and contemporary experiences (Grandbois, 2005). AIs in the United States have endured many historically significant events, including colonization, epidemics, warfare, and forced subjugation. It is widely believed that the cultural memory of their history is having a detrimental effect on contemporary AI communities (Brave Heart, 1999). Historical trauma and loss among AIs is believed to result from a combination of colonialism; acculturative stress; cultural bereavement; genocide; and cumulative, ongoing racism that has been generalized, internalized and institutionalized (Brave Heart, 1998; 2003;
Duran & Duran, 1995). To date, there is limited empirical research on historical trauma and loss in AI communities (Jervis, Beals, Croy, Klein, Manson, & the AI-SUPERPFP Team, 2006). The few studies that have been conducted on the role of historical trauma and loss as it relates to sexual and reproductive health issues have been exploratory and have specifically focused on HIV and sexually transmitted infection (STI) risk factors (Duran & Walters, 2004; Kaufman et al., 2007; Walters & Simoni, 1999). As part of *The Fort Peck Sexual Health Project: A Contextual Analysis of Native American Men* the relationship between the history of grief, loss, and trauma reported by the young men of the Fort Peck Reservation and its possible role in using birth control is explored.

**Community-based Participatory Research**

*The Fort Peck Sexual Health Project: A Contextual Analysis of Native American Men* was rooted in community-based participatory research (CBPR) principles. AIs have, historically, been reluctant to participate in research projects because traditional research methods, which emphasize the researcher as “the expert,” have not engaged them in the design and implementation of research projects or the interpretation and dissemination of results (Hellerstedt, Peterson-Hickey, Rhodes, & Garwick, 2006). CBPR has been identified as an effective and essential strategy for conducting research with AIs because of its emphasis on participation with the community and Tribal entities to address health disparities (Holkup, Tripp-Reimer, Salois, & Wienert, 2004). CBPR has also been identified as an emerging framework for transforming how research is translated into interventions that are designed, implemented, and evaluated with AI communities in order to reduce health and social disparities (Wallerstein & Duran, 2010). In particular, CBPR has been identified as an important framework for conducting sexual and reproductive health research because it requires the researcher to explore the social, cultural, and emotional context of the community in which decision making about these issues takes place (Reece & Dodge, 2004).

Development of this study began in November 2006 when researchers from Montana State University were invited to the Fort Peck Reservation to discuss a possible research project with the Fort Peck Tribes that would address the community’s sexual and reproductive health needs. Discussions with the Fort Peck Tribal Health Department, Indian Health Services, and other community organizations supported a collaborative project. In February 2007, a resolution to begin a partnership between the Fort Peck Tribes and Montana State University using CBPR to address sexual and reproductive health on the Fort Peck Reservation was passed by the Fort Peck Tribal Council. Subsequently, a Community Advisory Board was established to work in partnership with the research team to develop, implement, and evaluate the study.
The Community Advisory Board consisted of three members, two women and one man, who were recommended by the Fort Peck Tribal Council and the Fort Peck Tribal Health Department Director. Two of the three board members were Tribal members. The Fort Peck Tribal Health Department personnel that worked on the study were males who were 2-3 years older than the research participants; they also provided guidance and recommendations for the study. The Community Advisory Board met, on average, every other month to provide guidance on the overall direction of the project. More specifically, board members reviewed and gave comment on study materials such as informed consent documents and questionnaires. In addition, the board members made suggestions about how and where to recruit research participants. They were also provided the frequency distributions for each variable in the study by the project's Principal Investigator, Dr. Elizabeth Rink, so they could review the data results. Dr. Rink then discussed the data results with the board members, and the board members recommended specific variables for further analysis. This manuscript was written based on discussions between the Community Advisory Board and the research team. Furthermore, the board made recommendations for how to disseminate the study results on the reservation. Finally, the Fort Peck Tribal Council was informed of the progress of the study every three months. Their input and guidance were also sought during the various phases of the research process, including study design, review of data results, data dissemination, and manuscript review and approval.

METHODS

Participants

Data in this study were drawn from AI men, ages 18 to 24 years, from the Assiniboine and Sioux Tribes who live on the Fort Peck Reservation. The Fort Peck Reservation is located in a High Plains prairie environment of northeastern Montana and is bordered by the 47 ½ parallel to the north (just south of the border with Canada), Big Muddy Creek to the east, the Missouri River to the south, and Big Porcupine Creek to the west. The reservation spans approximately 2,093,310 acres. There are 12,000 enrolled members of the Assiniboine and Sioux nations; approximately 6,000 reside on or near the Fort Peck Reservation. The Sioux include Sisseton/Wahpetons, the Yanktonais, and the Teton Hunkpapa divisions; the Assiniboine comprise Wadopana (Canoe Paddlers Who Live on the Prairie) and Hudashana (Red Bottom) bands.

Eligible research participants were AI men between the ages of 18 and 24 years who were living on the Fort Peck Reservation at the time of the study and were members of the Assiniboine or Sioux Tribes. Approximately 578 of the men on the Fort Peck Reservation are between the ages of 18 and 24 years. In this study, 112 AI men, 20% of the target population, were interviewed.
sample size, estimated for the finite, age-specific population size for the Fort Peck Reservation, provided an estimated 10% prevalence with 95% confidence intervals and 5% precision (Daniel, 1999). Overall, the response rate for the study was a little over 80%.

Participants were recruited for this study using purposive sampling techniques by partnering with community organizations, such as the Fort Peck Tribal Health Department, Fort Peck Indian Health Services, and the Fort Peck Community College. These organizations assisted in providing information about the study to young men in the community who met the study’s eligibility criteria. The project was advertised via flyers, posters, presentations, community gatherings, the marquee for Indian Health Services in Poplar, Montana, and word of mouth.

Two male interviewers who were enrolled members of the Fort Peck Tribes conducted in-depth interviews with the target population. The interviewers were trained in interviewing techniques, protocols, and subject matter. In-depth interviews took place in a private setting, either in space provided by the study’s partnering agencies or another private setting agreed upon by the interviewer and interviewee. Quantitative and qualitative questions comprised the in-depth interviews. Topics addressed in the interviews included 1) demographics, 2) perceived partner commitment, 3) contraceptive use, 4) pregnancy prevention, 5) STI and HIV prevention, 6) decision making in relationships, 7) monogamy and abstinence; 9) social norms, 10) religious and spiritual practices, 11) loss and mental health, and 12) sexual risk behaviors. The interviews lasted between 45 minutes and 1.5 hours and were audio-recorded; in addition, the interviewer completed a paper form cataloguing the interviewee’s responses. The recorded interviews were later transcribed and cross-checked with the paper responses for accuracy and clarity. All research participants completed an informed consent. As part of the informed consent process, interviewees were made aware that audio-taping, transcription, and cross-checking would take place. When appropriate, transportation was provided to participants in order to reduce logistical barriers. Participants received a $25 gift certificate to a local convenience store to compensate them for their time. Institution Review Board approval was provided by Montana State University and Indian Health Services. The Fort Peck Tribes Health Board, which acts as the Fort Peck Tribes Institutional Review Board, also gave approval for the study.

Measures

The quantitative and qualitative measures used in this study are presented below.

Intention to Use Birth Control

Intention to Use Birth Control was measured as “Over the next year, how important or unimportant is it that you will use some form of birth control to not get your partner pregnant?” (Kraft et al., 2007). Response categories were a five-point Likert scale (1 = Not very important
to 5 = *Very important*). Due to low cell counts in the not at all important, a little important, and moderately important categories, the item was collapsed into two categories: 0 = not very important and 1 = very important.

**Age**

Age was measured as a discrete continuous variable ranging from 18 to 24 years.

**Children**

The number of children a participant had was measured as a discrete continuous variable, but was dichotomized for analysis to whether the participant had children or did not have children. Children was coded 0 = no and 1 = yes.

**Mental Health**

Perceived Losses

Perceived losses were measured using the Historical Loss Scale developed by Whitbeck, Adams, Hoyt, and Chen (2004). The Historical Loss Scale is a 12-item scale with a Cronbach’s alpha coefficient of 0.94, suggesting high internal reliability. Questions on the Historical Loss scale relate to loss of land, language, traditional spiritual ways, culture, and respect by children and grandchildren for elders and traditional ways, as well as loss due to death. Response categories were coded as 1 = *Several times a day*, 2 = *Daily*, 3 = *Weekly*, 4 = *Monthly*, 5 = *Yearly or at special times*, and 6 = *Never*. The items on the Historical Loss Scale were recoded so that higher scores on the scale reflected higher levels of historical loss.

Emotional Response to Losses

Emotional Response to Losses was measured using the Historical Loss Associated Symptom Scale (Whitbeck et al., 2004). This scale is a 12-item scale with questions specifically related to how the perceived losses of AIs influence their mental and emotional health. Mental and emotional health indicators in the Historical Loss Associated Symptom Scale include feelings of sadness and depression, anger, anxiety or nervousness, discomfort around White people, shame, loss of sleep, and rage. The response categories were 1 = *Never*, 2 = *Seldom*, 3 = *Sometimes*, 4 = *Often*, and 5 = *Always*. The items on the Historical Loss Associated Symptoms Scale were recoded so that higher scores on the scale reflected higher levels of emotional responses due to losses. The Historical Loss Associated Symptoms Scale reports a high internal reliability with a Cronbach’s alpha of 0.90.
Qualitative Question

A follow-up question was asked after the historical trauma and loss measures in order to assess the extent to which these feelings influenced decision making related to sex. The question stated, “When thinking about these feelings, do you think they influence decisions you make in your life about sex?” The question was coded 0 = No and 1 = Yes. Probes were asked after the yes/no question; these read: “If yes, how?” and “If no, why not?”

Statistical Analysis

Univariate and multivariate statistical techniques were used in this analysis. Frequency distributions were used to describe the sample population’s response categories for each variable. Logistic regression was used to quantify the extent to which young AI men’s experiences of historical trauma and feelings of loss were associated with their intention to use birth control. Significance levels were set at $p < 0.05$, $p < .01$, and $p < .001$. STATA version 9.0 was used to perform the analyses for this study (STATA Press, 2003). Upon completion of the statistical analyses, the results were shared with the study’s Community Advisory Board and research staff in order to assist in the interpretation of the results.

RESULTS

Frequency Distributions: Sample Characteristics

The age range of the men was 18 to 24 years, with the mean age reported as 21 years ($SD = 1.9$; see Table 1). Approximately 38.2% of the young AI men in the study reported having at least one child; 61.8% reported having no children. In all, 88.0% of the young AI men reported that it was very important to use some form of birth control within the next year to prevent a pregnancy with their partner. In comparison, 12.0% reported that it was not very important that they would use some form of birth control within the next year to prevent a pregnancy with their partner.
The mean score reported for perceived losses due to historical trauma was 40 ($SD = 14$, range = 12-72; see Table 2). Perceived losses that the young AI men reported never experiencing included loss of land (29.7%), loss of family ties because of boarding school (35.1%), loss of family ties from the reservation due to government relocation (36.9%), loss of trust in Whites from broken treaties (34.2%), and loss of culture (22.5%). In comparison, examples of perceived losses experienced by the young AI men on a daily basis were loss of their language (23.4%), loss of culture (20.7%), loss of respect by children and grandchildren for elders (39.6%), and loss of their people through early death (28.8%). Approximately 27.9% of the young AI men reported experiencing on a daily basis losses from the effects of alcoholism on their people.

The mean score reported for the emotional response to losses was 25 ($SD = 9$, range = 12-50; see Table 3). The majority of responses to the emotional loss questions fell within the “sometimes,” “seldom,” and “never” categories. For example, 30.1% of the young AI men reported sometimes feeling sadness or depression as a result of losses, in comparison to 23.6% who reported seldom or never feeling sadness or depression due to losses. Approximately 37.8% of the sample reported sometimes feeling angry because of the losses their people have experienced, 23.4% reported seldom feeling angry about these losses, and 12.6% reported never feeling angry due to the losses. Feelings of anxiety or nervousness due to losses were reported at 21.6% (sometimes), 27.0% (seldom), and 36.9% (never). Feelings of shame when thinking about the losses were reported at 22.5% (sometimes), 17.1% (seldom), and 47.7% (never). Also, 28.8% of the young AI men reported a loss of concentration due to historical trauma, in comparison to 17.1% who reported seldom losing their concentration and 36.9% reported never losing their concentration as a result of historical trauma.

### Table 1
Demographics and Intent to Use Birth Control

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>M(SD)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>21</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>44</td>
<td>38.2</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>68</td>
<td>61.8</td>
<td></td>
</tr>
<tr>
<td>Intention to use birth control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td>95</td>
<td>88.0</td>
<td></td>
</tr>
<tr>
<td>Not very important</td>
<td>17</td>
<td>12.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 2
Frequency of Perceived Losses

<table>
<thead>
<tr>
<th>Loss of our land</th>
<th>Never</th>
<th>Yearly or Special Times</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily</th>
<th>Several Times Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>29.7</td>
<td>19.8</td>
<td>16.2</td>
<td>11.7</td>
<td>15.3</td>
<td>6.3</td>
</tr>
<tr>
<td>Loss of our language</td>
<td>15.3</td>
<td>21.6</td>
<td>17.1</td>
<td>9.9</td>
<td>23.4</td>
<td>11.7</td>
</tr>
<tr>
<td>Losing our traditional spiritual ways</td>
<td>17.1</td>
<td>18.0</td>
<td>18.9</td>
<td>17.1</td>
<td>18.9</td>
<td>9.0</td>
</tr>
<tr>
<td>The loss of family ties because of boarding school</td>
<td>35.1</td>
<td>27.9</td>
<td>9.9</td>
<td>9.9</td>
<td>11.7</td>
<td>4.5</td>
</tr>
<tr>
<td>The loss of family ties from the reservation due to government relocation</td>
<td>36.9</td>
<td>20.7</td>
<td>15.3</td>
<td>10.8</td>
<td>10.8</td>
<td>5.4</td>
</tr>
<tr>
<td>The loss of self-respect from poor treatment by government officials</td>
<td>21.6</td>
<td>18.9</td>
<td>16.2</td>
<td>16.2</td>
<td>15.3</td>
<td>10.8</td>
</tr>
<tr>
<td>The loss of trust in Whites from broken treaties</td>
<td>34.2</td>
<td>17.1</td>
<td>9.0</td>
<td>13.5</td>
<td>16.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Losing our culture</td>
<td>22.5</td>
<td>12.6</td>
<td>15.3</td>
<td>14.4</td>
<td>20.7</td>
<td>12.6</td>
</tr>
<tr>
<td>The losses from the effects of alcoholism on our people</td>
<td>4.5</td>
<td>5.4</td>
<td>9.9</td>
<td>17.1</td>
<td>34.2</td>
<td>27.9</td>
</tr>
<tr>
<td>Loss of respect by our children and grandchildren for elders</td>
<td>9.0</td>
<td>1.8</td>
<td>13.5</td>
<td>15.3</td>
<td>39.6</td>
<td>19.8</td>
</tr>
<tr>
<td>Loss of our people through early death</td>
<td>8.1</td>
<td>11.7</td>
<td>14.4</td>
<td>20.7</td>
<td>28.8</td>
<td>14.4</td>
</tr>
<tr>
<td>Loss of respect by our children for traditional ways</td>
<td>14.4</td>
<td>10.8</td>
<td>18.9</td>
<td>19.8</td>
<td>22.5</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>Always</td>
<td>Often</td>
<td>Sometimes</td>
<td>Seldom</td>
<td>Never</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------</td>
<td>-------</td>
<td>-----------</td>
<td>--------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Often feel sadness or depression</td>
<td>2.7</td>
<td>10.9</td>
<td>30.1</td>
<td>23.6</td>
<td>23.6</td>
<td></td>
</tr>
<tr>
<td>Often feel anger</td>
<td>7.2</td>
<td>18.9</td>
<td>37.8</td>
<td>23.4</td>
<td>12.6</td>
<td></td>
</tr>
<tr>
<td>Often feel anxiety or nervousness</td>
<td>3.6</td>
<td>9.9</td>
<td>21.6</td>
<td>27.0</td>
<td>36.9</td>
<td></td>
</tr>
<tr>
<td>Uncomfortable around White people when you think of these losses</td>
<td>8.1</td>
<td>8.1</td>
<td>18.0</td>
<td>10.8</td>
<td>54.9</td>
<td></td>
</tr>
<tr>
<td>Shame when you think of these losses</td>
<td>3.6</td>
<td>9.0</td>
<td>22.5</td>
<td>17.1</td>
<td>47.7</td>
<td></td>
</tr>
<tr>
<td>Loss of concentration</td>
<td>2.7</td>
<td>5.4</td>
<td>28.8</td>
<td>26.1</td>
<td>36.9</td>
<td></td>
</tr>
<tr>
<td>Feel isolated or distant from other people when you think of these losses</td>
<td>0.9</td>
<td>8.1</td>
<td>22.5</td>
<td>22.5</td>
<td>45.9</td>
<td></td>
</tr>
<tr>
<td>A loss of sleep</td>
<td>0.9</td>
<td>3.6</td>
<td>17.1</td>
<td>12.6</td>
<td>64.8</td>
<td></td>
</tr>
<tr>
<td>Rage</td>
<td>0.9</td>
<td>6.3</td>
<td>22.5</td>
<td>17.1</td>
<td>53.2</td>
<td></td>
</tr>
<tr>
<td>Fearful of or distrust the intentions of White people</td>
<td>4.5</td>
<td>6.3</td>
<td>18.9</td>
<td>22.5</td>
<td>47.8</td>
<td></td>
</tr>
<tr>
<td>Feel like it is happening again</td>
<td>3.6</td>
<td>11.7</td>
<td>24.3</td>
<td>21.6</td>
<td>37.8</td>
<td></td>
</tr>
<tr>
<td>Feel like avoiding places or people that remind you of these losses</td>
<td>7.2</td>
<td>9.0</td>
<td>19.8</td>
<td>13.5</td>
<td>50.5</td>
<td></td>
</tr>
</tbody>
</table>
Logistic Regression: The Role of Mental Health and Intention to Use Birth Control To Prevent Pregnancy

Results from the logistic regression analysis for concepts of historical trauma and loss and intention to use birth control among our sample of young AI men suggest that, for every 1-year increase in age, the young AI men were less likely to consider it important to use birth control within the next year to prevent a pregnancy with their partner (see Table 4). This finding suggests that AI men in their late teens may be more receptive to receiving birth control counseling and services than AI men in their early to mid-twenties.

As emotional responses related to the losses experienced by their people increased among this sample of young AI men, they were more likely to consider it important to use some form of birth control within the next year to prevent a pregnancy with their partner (see Table 4). Therefore, mental health and feelings of sadness, anger, anxiety, and shame appear to be important factors to consider when providing birth control counseling and services to AI men. No association was found between whether young AI men already had children and their intention to use birth control with the next year to prevent a pregnancy with their partner. In addition, loss related to land, language, and culture, and losses from the effects of alcoholism, was not associated with young AI men’s intention to use birth control within the next year to prevent a pregnancy with their partner.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
<td>.64</td>
<td>(.46-.91)*</td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2.5</td>
<td>(.66-9.1)</td>
</tr>
<tr>
<td>No</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Experience of Loss</td>
<td>.98</td>
<td>(.93-1.1)</td>
</tr>
<tr>
<td>Feelings Related to Loss</td>
<td>1.2</td>
<td>(1.1-1.3)*</td>
</tr>
</tbody>
</table>

* p < 0.05

Qualitative Follow-up Question

The research participants were asked a qualitative follow-up question in order to further explain how concepts of historical trauma and loss may influence their sexual and reproductive health. Seventy-five percent of the men interviewed stated that historical trauma and loss did not influence their decisions about sex. Of the 25% of the men who did state that historical trauma and loss influenced their decisions about sex, comments included the following: “It makes me think...”
about planning and wanting to know more,” “It makes me just want to focus on work,” and “I don’t know, it just does.” Thus, it may be that young AI men who report feelings of sadness, anxiety, anger, or shame related to historical losses may be ambivalent or unsure about parenthood and not able to articulate the connection between such feelings and their influence on sexual decision-making.

DISCUSSION

AI men are an understudied population facing unique sexual and reproductive health challenges such as young fatherhood and lack of access to reproductive health services. Approximately 43% of AIs live on reservations in rural and frontier settings (National Center for Frontier Communities, 2000). Furthermore, AI communities are becoming increasingly concerned with research that focuses on problems related to sexual and reproductive health among AIs, as opposed to presenting a balanced and holistic perspective on sexual and reproductive health disparities in Tribal communities (Chewning et al., 2001; Garwick et al., 2008). What is known about how to design and implement sexual and reproductive health intervention and prevention strategies comes from primarily White, Hispanic, and African American settings and is not likely to be generalizable to AIs from rural, frontier environments (Adimora, Schoenbach, & Doherty, 2006; Aral, O’Leary, & Baker, 2006; Farley, 2006; Thomas, 2006; Gaydos et al., 2006). The paucity of sexual and reproductive health literature on men in their late teens and twenties makes it difficult to determine factors that facilitate or impede the use of pregnancy prevention strategies and reproductive health services (Dominguez, 2008). Consequently, intervention and prevention strategies that are effective in an adolescent male population may not be effective in a young adult male population. Recent research by Kalmuss and Tatum (2007) suggest that the characteristics of successful sexual and reproductive health services for heterosexual men from culturally and ethnically unique backgrounds are unclear, and more research is needed to determine effective approaches for these populations. Furthermore, research conducted by Buzi and colleagues (2010) demonstrates that addressing mental health issues among young men from racially and ethnically diverse backgrounds as part of sexual and reproductive health services in warranted due to the correlation between mental health and sexual and reproductive health.

The initial findings from The Fort Peck Sexual Health Project: A Contextual Analysis of Native American Men provide insight into potential approaches to providing sexual and reproductive health care to young AI men. The average age of the young men in this study was 21 years old. The results from this study suggest that, as the young men transition from late adolescence into their early twenties, they are less likely to consider it important to use birth control as a pregnancy prevention strategy with their partner. It may be that more young men are in long-term committed relationships as they age and may, therefore, be more likely to want to have children. These findings
are consistent with previous research, which demonstrates that, as young men enter into young adulthood, they are less likely to view birth control as important (AGI, 2002). This study indicates that providing sexual and reproductive health services specifically designed for AI men in their early to late teens—before they reach their late adolescence and young adulthood—is warranted in order to educate and counsel them on the importance of their sexual and reproductive health. Furthermore these findings support research conducted by Garwick and colleagues (2008), who found that AI teens were receptive to and interested in getting sexual and reproductive health services in their communities through a variety of outreach strategies.

Research on historical trauma and loss in AI communities has primarily focused on adults and elders, as well as youth in their early teens (Whitbeck et al., 2004; Whitbeck, Walls, Johnson, Morriseau, & McDougall, 2009). The young AI men in this study reported experiences of historical trauma and loss, emphasizing the potential influence of cultural and social history on their health behavior. Findings from this study indicate that AI young people do think about, and are concerned with, the histories of their communities. This study suggests that concepts related to historical trauma (e.g., loss of land, language, and culture; losses from the effects of alcoholism), as well as the emotional responses due to such losses, may have negative effects on young AIs as they transition into adulthood. However, it should be noted that the majority of the young AI men in this study reported sometimes, seldom, or never experiencing emotional responses to the losses affecting their people. Thus, it may be that while young AI men acknowledge and think about the past traumas and losses of their people, they do not necessarily report that their thoughts influence their mental health or their reproductive choices.

In our sample, the majority of respondents reported that it was very important to use birth control within the next year to prevent a pregnancy with their partner. Furthermore, young men who were experiencing emotional responses to the losses associated with historical trauma reported that it was important for them to use birth control to prevent pregnancy. In addition, qualitative results suggest that the young men who did report that their emotional responses to losses influenced their decisions about sex were concerned about delaying fatherhood until they were ready for the responsibilities of being a parent. However, based on the briefness of the young men’s responses, they may have a difficult time making a connection between their feelings and their decisions about sex. These findings support the possibility that historical losses may influence contraceptive decision making among young AI men. While the results from this study demonstrate responsible decision making when it comes to using birth control, further investigation is needed to determine the extent to which young AI men associate use of birth control to prevent or plan a pregnancy to historical trauma and loss. Young AI men who are experiencing emotional problems due to historical trauma may have difficulty expressing their feelings or articulating their thoughts on the subject and how it
influences their contraceptive use. Thus, it may be that conducting focus groups or probing further during individual in-depth interviews regarding the relationship between birth control and feelings and thoughts related to historical trauma and loss may provide more insight into how to best address pregnancy prevention and planning with young AI men.

LIMITATIONS

There are limitations to this study. Responses were elicited from young AI men ages 18 to 24 years from the Fort Peck Tribes and cannot be generalized to other AI populations. Furthermore, the use of purposive sampling weakens the validity of the study’s statistical findings, which may also make it difficult to generalize to other young men who are members of the Fort Peck Tribes. Data were derived from self-reports, which may be restricted to opinions or feelings rather than being based on facts or evidence. The historical loss measures were originally designed to assess grief and loss in older AI populations, with only limited application to younger AI populations in other studies (Whitbeck et al., 2004; 2009). Thus, more research is needed to determine how to appropriately measure historical losses and their impact on the emotional well-being of young AIs. Finally, the young AI men who participated in the study were only asked questions about their intention to use birth control to prevent pregnancy, and were not asked questions regarding whether they wanted their partner to get pregnant. Thus, the study’s findings are limited to young AI men's intention to prevent pregnancy; they cannot be applied to their overall feelings and attitudes towards pregnancy.

CONCLUSION

This study revealed that young AI men do consider it important to use birth control with their partner in order to prevent pregnancy. However, they are less likely to consider birth control important as they transition into adulthood. This finding suggests that providing birth control counseling, education, and services may be most effective when AI men are in their early to middle teenage years. In addition, some young AI men report experiences of historical trauma and loss, as well as emotional responses to these losses, which influence the meaning they place on using birth control to prevent pregnancy. This study underscores the importance of further examining the interactions between mental health and sexual and reproductive health among young AI men. Further exploratory research, such as in-depth qualitative interviews, focus groups, and research with an intergenerational sample of AI men, may reveal deeper insights into how aging influences AI men’s concepts of historical trauma and loss in relation to pregnancy prevention and planning. In addition, qualitative and intergenerational study designs may also assist in understanding how historical trauma and loss are internalized by AI men, and how this internalization influences sexual and
reproductive choices. Such research could inform the design of therapeutic interventions to address both young AI men's sexual and reproductive health and their emotional and mental well-being. For example, as a result of this two-year exploratory study, the Fort Peck Tribal Health Department, in partnership with Montana State University, has designed an intervention to educate young AI males about sexual and reproductive health and teach them effective strategies for communicating with their sex partners about topics related to sexual and reproductive health such as condom use, conflict resolution and pregnancy prevention. This intervention is now being implemented and evaluated for effectiveness with AI men ages 18 to 24 years living on the Fort Peck Reservation. One of the outcomes explored in The Fort Peck Men’s Sexual Health Intervention and Evaluation Study is the extent to which men’s emotional health (e.g., feelings of loss or sadness) influences their sexual decision making, use of contraception, communication with sex partners, and concept of healthy relationships. This intervention study aims to provide strategies for working with young AI men on topics related to their emotional health and its influence on their sexual and reproductive health.

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REFERENCES


TRIBAL RECOMMENDATIONS FOR DESIGNING CULTURALLY APPROPRIATE TECHNOLOGY-BASED SEXUAL HEALTH INTERVENTIONS TARGETING NATIVE YOUTH IN THE PACIFIC NORTHWEST

Stephanie Craig Rushing, PhD, MPH, and David Stephens, BA

Abstract: Media technologies, including the Internet, cell phones, and video games, offer new avenues to reach Native youth on sensitive health topics. Project Red Talon, a sexually transmitted disease (STD)/HIV prevention project that serves the 43 federally recognized tribes in Oregon, Washington, and Idaho, used community-based participatory research methods in partnership with the Northwest tribes to review existing technology-based interventions and generate recommendations for designing interventions that reflect the culture, needs, and organizational capacities of participating tribes and Native youth. These findings are now being used to guide the development of technology-based health interventions targeting American Indian/Alaska Native teens and young adults.

INTRODUCTION

The sexual and reproductive decisions of American Indian and Alaska Native (AI/AN or Native) teens and young adults are shaped by unique social norms and sexual contexts that include both traditional and contemporary cultural values. Influenced by years of federal policies designed to exterminate their populations, Native communities often view the arrival of new life favorably, regardless of the parent’s age. High teen pregnancy and sexually transmitted disease (STD) rates indicate that sexual activity in AI/AN communities starts earlier than among other American teens, and often occurs without the use of protective measures. Environmental factors such as poverty, geography, and inadequate health services further exacerbate the adverse sexual health outcomes that many AI/AN youth experience.

Until quite recently, few sexual health interventions were designed for or evaluated in Indian Country. As a result, most Native youth do not receive sufficient reproductive health education and support. Media technologies like the Internet, cell phones, and video games offer new ways to bridge
this gap in ways that are familiar, accessible, and culturally appropriate for Native youth. Many approaches can be tailored to the maturity and interests of the individual, can be disseminated broadly regardless of geographic location, and can be privately accessed when and where the individual is ready (Bennett & Glasgow, 2009; Coyle, Doherty, Matthews, & Sharry, 2007; Lustria, Cortese, Noar, & Glueckauf, 2009; Portnoy, Scott-Sheldon, Johnson, & Carey, 2008). Media technologies thus hold great promise for public health practitioners seeking to reach Native youth, as vehicles for education and intervention related to sexual and reproductive health (Bull, Phibbs, Watson, & McFarlane, 2007).

Project Red Talon has provided capacity-building assistance on STD/HIV prevention and surveillance to the 43 federally recognized tribes in Oregon, Washington, and Idaho for over two decades. In response to tribal interest, Project Red Talon surveyed over 400 Native youth on their media technology use and online health information seeking in 2009 (the Native Youth Media Survey), conducted a systematic literature review to identify available technology-based interventions, and facilitated a variety of community-based participatory research (CBPR) activities to generate recommendations for designing technology-based interventions that would best align with the culture, needs, and organizational capacities of tribes in the Pacific Northwest. Findings from the Native Youth Media Survey have been reported elsewhere in the literature (Craig Rushing, 2010; Craig Rushing & Stephens, 2011). This paper will share findings from the study’s literature review and CBPR activities.

Community-based Participatory Research in Indian Country

Respecting Indigenous research methods requires that communities have direct input in “developing and defining research practices and projects that relate to them” (p. 503), defining for themselves what is and what is not acceptable research (Battiste, 2008). Such a relationship can be achieved by using community-based participatory research (CBPR) methods that involve communities in selecting the scope and design of the study, the collection of data, the interpretation of research findings, and the dissemination of results (Minkler & Wallerstein, 2003). Additionally, there are several distinct benefits to using CBPR in Indian Country, including that it reflects and acknowledges tribal sovereignty, self-determination, and self-governance; allows research to occur in circumstances where it otherwise wouldn’t; and better aligns with traditional research approaches. In their curriculum on Research that Benefits Native People, the National Congress of American Indians (2009) describes traditional research practices as:

- based on the collective wisdom of community members, built through careful observation and experiences of natural patterns of life
- learned, transmitted, and retained in the telling of stories
complex, interrelated, and based on diverse conditions

CBPR mirrors the values and strengths of many AI/AN nations, including respect for community processes and consensus, sincere equal partnership, and the ecological view of the individual as intricately linked with family and tribe. In CBPR, equal weight is given to both scientific and Indigenous expressions of knowledge (Cochran et al., 2008; Forster et al., 2007), employing both Western and cultural lenses in the interpretation of data (Warner & Grint, 2006). CBPR acknowledges that “research is not culturally neutral” (p. 12), and that Indigenous knowledge is a necessary component of the research process (National Congress of American Indians, 2009). Consequently, CBPR has become an informal code of conduct for most research and surveillance now done in Indian Country.

Background on Technology-based Interventions

Media technologies, including the Internet, cell phones, and video games, are increasingly being used to disseminate health information and teach users new skills. To support healthy behavior change, research in the field suggests that technology-based interventions incorporate several important components, including: (a) messages that are tailored to the needs of the user; (b) features that enhance social support and communication; (c) content that is interactive and multimedia; (d) features that promote repeated use of the intervention; and, like other behavioral interventions, (e) content that addresses the core risk and protective factors associated with health outcomes (Craig Rushing, 2010; Noar, Black, & Pierce, 2009).

Health messages can be tailored to an individual by eliciting information from the user, and then using that information to selectively display content in a manner that is relevant or engaging (Baylari & Montazer, 2009). Technology-based interventions have tailored their content using a variety of criteria, including users’ age, gender, race/ethnicity, sexual orientation, stage of change, perceived needs, and reported risk factors (Lustria et al., 2009). Tailored content can be used to bypass material that does not reflect the user’s individual needs, and can thus reduce intervention time requirements and enhance user retention (Kiene & Barta, 2006). Software and information technologies now make it possible to provide tailored interventions to an entire population, producing “mass customization” (Cobb, Graham, Bock, Papandonatos, & Abrams, 2005). Gaming research similarly suggests that integrated assessment tools and responsive adaptation can improve learning and cognition (Wilson et al., 2009). Assessment tools that provide immediate feedback give learners a clear understanding about how they are doing on the task, help students identify errors, and improve understanding and motivation to stay on task (Wilson et al., 2009).
Tailoring is theoretically supported by the Transtheoretical Model (Prochaska, DiClemente, & Norcross, 1992). According to the model, behavior change involves progression through a series of predictable, though not necessarily sequential, stages. By understanding what processes are present at each stage, interventions can be aligned to the needs of individuals at any point along the continuum. Stage-based interventions have been shown to dramatically increase successful recruitment, retention, and completion, and promote movement through successive stages (Di Noia, Contenko, & Prochaska, 2008). Tailoring is also supported by research in the communication and learning fields. Skinner and colleagues found that tailored information is more likely to be read, understood, perceived as personally relevant, and remembered (Skinner, Campbell, Rimer, Curry, & Prochaska, 1999). The literature suggests that learners experience greater success in learning environments that adapt to and support their individual learning orientations, and that patient satisfaction and care can be optimized by integrating the patient’s interests, strengths, and ideas into the treatment process (Baylari & Montazer, 2009; Coyle et al., 2007). As a result, computer tailoring has the potential to enhance both the reach and effectiveness of behavioral interventions (Lustria et al., 2009).

Media technologies offer a variety of tools to instill social support and communication between users, including e-mail, instant messaging, text messaging, discussion boards, blogs, chat rooms, and social networking. The literature suggests that virtual peer-to-peer interaction can support healthy behavior change by creating and reinforcing positive social norms (Cobb et al., 2005; Gerber, Solomon, Shaffer, Quinn, & Lipton, 2007; Rhodes, 2004). Technology-based interventions are now being designed to facilitate sensitive conversations between adolescents and their parents, between adolescents and their health care providers, between peers, and between sexual partners. Virtual “discussions” between experts and peers can make learning a dynamic, two-way experience (Barak & Fisher, 2001; Baylari & Montazer, 2009). Providing expert feedback within tailored interventions has been shown to be more effective for helping smokers quit than providing tailored messages alone (Dijkstra, 2005).

Media technologies can also incorporate a wide variety of interactive design elements, including graphics, animation, photos, videos, sounds, click-through modules, games, quizzes, surveys, polls, and links. Hypertext learning environments allow users to access multiple sources of information, enriching the informational experience (Bull et al., 2007). The selection, pace, and depth of information is controlled by the learner, meeting his or her unique educational needs (Coyle et al., 2007). These technologies accommodate diverse preferences and learning styles by presenting information in multiple ways—via text, audio, and visual elements (Ito, Kalyanaraman,
Several studies support the use of multimedia platforms to enhance learning, user satisfaction, and behavior change (Daft & Lengel, 1986; Liu, Liao, & Pratt, 2009; Mayer & Moreno, 1998). Just as seen in face-to-face treatment, the intensity and duration of technology-based interventions appears to be closely associated with subsequent health outcomes (Cobb et al., 2005). In follow-up studies of smoking-cessation Web sites, those who successfully quit smoking logged in more frequently, spent more time online, and viewed more pages than those who continued to smoke (Cobb et al., 2005). It is not yet known what frequency and intensity are needed for technology-based interventions to modify behavior, but repeat use is clearly an important component of such programs.

To achieve this level of use, technology-based interventions must incorporate features that promote repetition. Retention tools (like reminder systems, personal contact with participants giving positive feedback, and incentives for returning—raffles, point systems, or giveaways) and compelling design features (like content that is new and salient, user-generated, and/or entertaining and interactive) have been reported by several investigators (Bull, Lloyd, Rietmeijer, & McFarlane, 2004; Bull, Vallejos, Levine, & Ortiz, 2008). Other studies have incorporated booster sessions to reinforce information and maintain program effects (Bull, Pratte, Whitesell, Rietmeijer, & McFarlane, 2009; Card & Kuhn, 2006; Metcalf et al., 2005; Pedlow & Carey, 2004). Media interactivity has been found to increase user retention (Hurling, Fairley, & Dias, 2006), and gaming researchers have found that learner control (the ability to dictate the pace and sequence of activities), mystery (gaps in knowledge), and challenge can improve learning attitudes, motivation, and cognition (Wilson et al., 2009).

METHODS

Founded in 1972, the Northwest Portland Area Indian Health Board (NPAIHB) is a tribally operated non-profit organization that provides health research, technical assistance, and policy advocacy on behalf of its member tribes. Housed within the NPAIHB’s Tribal Epidemiology Center, Project Red Talon works to reduce STD/HIV infections through research, surveillance, and health promotion practices.

In 2005, Project Red Talon formed the Red Talon STD/HIV Coalition at the request of tribal health advocates to work collaboratively across Northwest tribes to reduce STDs and improve sexual health outcomes. Recognizing the need to provide better reproductive health education to Northwest teens and young adults, the group frequently reviewed mainstream STD/HIV prevention resources and interventions, but repeatedly found that their content did not reflect the life experiences of rural,
Native youth. Interested in harnessing the privacy, reach, and customizability of technology-based interventions, the Red Talon STD/HIV Coalition included this research activity as an action item in 2009: “Identify innovative STD/HIV prevention strategies using computer-based programs and social networking sites; explore their possible relevance and utility in Indian Country” (Project Red Talon, 2009).

To inform the selection and development of culturally appropriate technology-based health sexual health interventions for youth, coalition members felt they needed to know more about youths’ current use of media technologies (types of technologies used, frequency and duration of use, preferred media features and activities) and to what extent they search online for health information (Craig Rushing & Stephens, 2011). Members were also interested in learning about the types of technology-based health interventions that were currently available in the published literature, their effectiveness, and organizational resources that would be needed to implement them. Members agreed that a Native Youth Media Survey and literature review would be useful activities to generate this information.

To ensure human protections throughout the research process, the protocol was submitted to the Portland Area Indian Health Service’s Institutional Review Board (PA IHS IRB - #09-P-03) and Portland State University’s (PSU) Human Subjects Research Review Committee (HSRRC - #09880). Approval was obtained from both committees prior to data collection. Project Red Talon staff then worked with coalition members and tribal health educators to carry out the Native Youth Media Survey. Survey methods and results are reported elsewhere (Craig Rushing, 2010; Craig Rushing & Stephens, 2011). The literature review was simultaneously completed by Project Red Talon staff.

Community-based participatory research (CBPR) activities took place throughout the year-long project (see Table 1). Because the study was conducted regionally, rather than with a single Northwest tribe, Project Red Talon staff sought input from project stakeholders multiple times in multiple settings. tribal coalition members, Native youth, and topical experts were all involved in shaping the study’s scope and design, contributed to data collection efforts, reviewed qualitative and quantitative data, offered recommendations for selecting and adapting technology-based interventions, reviewed draft reports and manuscripts, and helped disseminate study findings. This iterative process helped ensure resultant recommendations were relevant to the diverse needs and capacities of our Northwest tribes, while maintaining adherence to CBPR principles.
<table>
<thead>
<tr>
<th>Location, Date</th>
<th>Informant Type, Demographics</th>
<th>Research Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Talon Coalition Meeting, Portland, OR January 7, 2009</td>
<td>Tribal health advocates: 15 people (40% M, 60% F) representing 1 NW tribe, 5 tribal organizations, and 3 partnering agencies.</td>
<td>Finalized STD/HIV Action Plan, which included this research activity as an action item, after two prior meetings.</td>
</tr>
<tr>
<td>January-July 2009</td>
<td>8 community partners and topical experts</td>
<td>Literature review</td>
</tr>
<tr>
<td>NW tribe March 31, 2009</td>
<td>12 youth, 3 parents</td>
<td>Piloted survey tool with teens and their parents</td>
</tr>
<tr>
<td>NW Indian Youth Conference, Spokane, WA April 3-5, 2009</td>
<td>196 Youth: 37% Male, 63% Female</td>
<td>Collected survey data</td>
</tr>
<tr>
<td>Red Talon Coalition Meeting, Seaside, OR April 8, 2009</td>
<td>Tribal health advocates: 8 people (100% F) representing 2 NW tribes, 2 NW tribal organizations, and 2 partnering agencies.</td>
<td>Participants were given copies of the survey and discussed potential data collection strategies and sites.</td>
</tr>
<tr>
<td>NPAIHB Quarterly Board Meeting, Grand Ronde, OR April 20-23, 2009</td>
<td>Delegates to the Northwest Portland Area Indian Health Board, representing 43 member tribes.</td>
<td>Shared progress to date, discussed data collection strategies and sites.</td>
</tr>
<tr>
<td>Tribal School A</td>
<td>81 Youth, 48% male, 52% female</td>
<td>Collected survey data</td>
</tr>
<tr>
<td>Tribal School B</td>
<td>28 Youth, 68% male, 32% female</td>
<td>Collected survey data</td>
</tr>
<tr>
<td>Tribal School C</td>
<td>16 Youth, 44% male, 56% female</td>
<td>Collected survey data</td>
</tr>
<tr>
<td>Tribal School D</td>
<td>43 Youth, 42% male, 58% female</td>
<td>Collected survey data</td>
</tr>
<tr>
<td>NPAIHB Quarterly Board Meeting, Tulalip, WA July 22, 2009</td>
<td>Delegates to the Northwest Portland Area Indian Health Board, representing 43 member tribes.</td>
<td>Shared progress to date, discussed preliminary data.</td>
</tr>
<tr>
<td>Native STAND Youth Summit, Chehalis, WA July 27-31, 2009</td>
<td>30 youth, 2 adult mentors</td>
<td>Existing media interventions were described and demoed. Group discussions were used to gauge interest in available methods/modalities.</td>
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<table>
<thead>
<tr>
<th>Location, Date</th>
<th>Informant Type, Demographics</th>
<th>Research Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working with Native Youth training, Portland, OR August 11-13, 2009</td>
<td>65 teachers, parents, and health educators</td>
<td>Existing media interventions were described, demonstrated, and discussed. Small and large group discussions were used to elicit opinions and ideas about tech interventions and cultural considerations.</td>
</tr>
<tr>
<td>November-December 2009</td>
<td></td>
<td>Individual data reports were returned to participating tribes.</td>
</tr>
<tr>
<td>Chemawa Indian Boarding School, Salem, OR November 23, 2009</td>
<td>60 high school students</td>
<td>Existing media interventions were described and demoed. Group activities were used to gauge interest in available methods/modalities.</td>
</tr>
<tr>
<td>Adolescent Health Alliance, Salem, OR December 9, 2009</td>
<td>Tribal health advocates: 35 attendees, representing seven NW tribes, three Native youth treatment centers, one Urban Indian health clinic, NPAIHB, two universities, and three divisions of the Oregon State Department of Human Services.</td>
<td>Participants reviewed and discussed survey data, technology-based interventions (abstracts, photos/demos, and comparison charts), and the merits and drawbacks of various strategies. Attendees then prioritized options and offered recommendations for designing culturally appropriate interventions.</td>
</tr>
<tr>
<td>Tribal school board January 20-22, 2010</td>
<td>10 tribal school administrators</td>
<td>Discussed school's data and strategies to disseminate findings.</td>
</tr>
<tr>
<td>Adolescent Health Alliance, Shelton, WA February 24, 2010</td>
<td>Tribal health advocates: 47 people representing 18 NW tribes, one Native-specific youth treatment center, two tribal organizations, one university, and two divisions of the Washington State Department of Human Services.</td>
<td>Participants reviewed and discussed survey data, technology-based interventions (abstracts, photos/demos, and comparison charts), and the merits and drawbacks of various strategies. Attendees then reviewed and refined recommendations for designing culturally appropriate interventions.</td>
</tr>
<tr>
<td>35th annual NW Indian Youth Conference April 2010</td>
<td>600 AI/AN junior and senior high school students</td>
<td>Existing media interventions were described/demoed. Group discussions and activities were used to gauge interest in available methods/modalities.</td>
</tr>
<tr>
<td>NPAIHB Quarterly Board Meeting, Cow Creek, OR April 20, 2010</td>
<td>Delegates to the Northwest Portland Area Indian Health Board, representing 43 member tribes.</td>
<td>Shared progress to date; discussed priorities and recommendations for designing culturally appropriate interventions.</td>
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</table>
CBPR with Tribal Coalitions

In the Pacific Northwest, tribal coalitions serve the dual purpose of engaging tribes in planning and outreach, while providing direction to NPAIHB staff on desired goals and activities for the region as a whole. These coalitions meet at rotating locations throughout the Northwest, and attendance typically varies from 15-45 members. To maximize participation, meetings are scheduled in conjunction with other relevant tribal gatherings or trainings, and travel expenses for attendees are reimbursed by the NPAIHB. In 2009, the Red Talon STD/HIV Coalition merged with three other planning groups to create a more holistic body, forming the Northwest Native Adolescent Health Alliance.

Coalition members are well aware of community norms, appropriate messages, traditional teachings, and effective strategies for reaching high-risk populations. As a result, they are regularly called upon to guide the development of educational materials produced by the NPAIHB. Meetings typically include a variety of partners, including tribal health advocates (health directors and educators, community health representatives, RNs, and youth prevention staff) and representatives from regional and national Indian Health Service programs, state and county Health Departments, Universities, and other tribal programs and partners.

During the course of this year-long project, tribal coalition meetings were held quarterly. At the first two meetings, participants selected the research topic, reviewed survey instruments, and brainstormed data collection strategies and sites. Coalition members then administered the survey in their local communities, or facilitated its administration by Project Red Talon staff.

When these activities were complete, two additional coalition meetings were convened to review survey data and discuss identified interventions. The first meeting had 35 attendees, representing seven Northwest tribes, three Native youth treatment centers, one Urban Indian Health clinic (NARA), two universities (Oregon Health Sciences University, Portland State University), and three divisions of the Oregon State Department of Human Services (HIV/STD/Tuberculosis, Indian Education, Alcohol and Mental Health). The second meeting was attended by 47 people representing 18 Northwest tribes, one Native youth treatment center, two tribal organizations (the NPAIHB, South Puget Intertribal Planning Agency), one university (University of Washington), and two divisions of the Washington State Department of Human Services (HIV/STD/Tuberculosis, Tobacco Prevention).

Participants at the final two meetings discussed the merits and drawbacks of available intervention strategies, prioritized options in light of resultant data and community experience, and proposed and refined recommendations for designing culturally appropriate interventions. Comparison charts, demonstrations, and visual examples of available interventions were provided.
to support group discussion. Detailed meeting minutes were taken by Project Red Talon staff to capture participants’ input, and an automated response system was used at the final meeting to poll attendees on possible intervention designs.

CBPR with Native Youth

Project Red Talon staff also sought input from Native teens and young adults at several points throughout the study to inform the selection of technology-based interventions. Project staff piloted the survey tool with 10 teens and parents from a Northwest tribe, and integrated their suggestions before administering it regionally. Teens and young adults at all surveying sites were invited to participate in the distribution and collection of surveys, pens, and raffle tickets, and seemed to take interest in both the survey process and the findings that would emerge.

Informal formative research was carried out with 25 high school students attending the 2009 Native STAND Youth Summit, with 60 students attending Chemawa Indian School, a Bureau of Indian Education residential school, and with over 600 AI/AN junior and senior high school students attending the 35th annual Northwest Indian Youth Conference. At each of these gatherings, a variety of existing media interventions were shown or described to attendees, and interactive discussions and activities were used to gauge student interest.

CBPR with Community Partners and Topical Experts

Additionally, Project Red Talon staff consulted with community partners and topical experts to ensure resultant data would be useful and relevant to their work, including staff from the Indian Health Service’s National STD Program, Native Wellness Institute, and State Health Departments in Oregon and Washington. Several regional meetings were also used to inform community stakeholders about the project’s progress, and to seek participants’ input and ideas. Feedback was gathered from 65 teachers, parents, and health educators who attended a three-day training on Working with Native Youth (August 11-13, 2009). Tribal delegates to the NPAIHB and members of the NPAIHB’s Behavioral Health Committee were consulted quarterly throughout the year-long project.

Literature Review on Technology-based Sexual Health Interventions

The literature review was carried out by study co-authors Stephanie Craig Rushing, Director of Project Red Talon at the NPAIHB, and David Stephens, a part-time student intern. To locate appropriate articles, key terms were used in academic search engines (i.e. Academic Search Complete, Cochrane Library, PubMed, etc.), including technology, Internet, online, computer-based, cell phone, text message, and video game. These words were cross-referenced with terms like health promotion,
health intervention, risk-reduction, and terms like sexual health, STD, pregnancy, contraception, condom, adolescent, teen, or young adult. Resultant studies were screened in several stages using explicit inclusion criteria, referencing the full-text article when necessary.

Twenty-nine interventions were selected for systematic review based on their delivery method (computer, Internet, cell phone, video game, interactive video/DVD), health focus (STD, HIV, or pregnancy prevention; abstinence, condom or contraception use; STD/HIV testing), and intended outcome (changes in behavior, knowledge, attitudes, perceptions, or skills). Both researchers coded the interventions independently on variables of interest to the study in a Microsoft Excel spreadsheet (see Table 2 and Craig Rushing [2010] for intervention matrices and operational definitions). Variables included:

- Study Methods: aims, study design, participant recruitment.
- Intervention Design: description, theoretical framework, purpose/health focus, implementation setting, duration, message content, message tailoring criteria, features and modalities, user control, privacy.
- Target Population: age, gender, ethnicity, socioeconomic status.
- Outcomes: changes in behavior, knowledge, attitudes, perceptions, skills.
- Results: process or utilization data, retention, user satisfaction.
- Organizational Requirements for Implementation: funding, space, incentives.
- Technical Requirements for Implementation: software, equipment.
- Personnel Requirements for Implementation: number, skills/training, gender.

Operational definitions for each variable were summarized to ensure they were consistently applied throughout the process. On those occasions when the published literature was not sufficient to complete the matrix for a particular intervention, the Principal Investigator contacted the intervention’s corresponding author with follow-up questions via e-mail or phone. Thirteen out of 16 investigators responded to such inquiries, answering questions directly or sending other pertinent documents for review.
Table 2
Technology-based Interventions Included in the Systematic Review

<table>
<thead>
<tr>
<th>Delivery Method</th>
<th>Intervention</th>
<th>Author</th>
<th>Youth</th>
<th>Adults</th>
<th>HIV+</th>
<th>MSM*</th>
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<tbody>
<tr>
<td><strong>Computer-based Modules</strong></td>
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<tr>
<td></td>
<td>1. It’s Your Game (IYG)</td>
<td>(Shegog et al., 2007; Tortolero et al., 2008)</td>
<td>X</td>
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<td></td>
<td>2. Let’s Talk About Sex</td>
<td>(Ito et al., 2008)</td>
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<td></td>
<td>4. Sexual Risk Reduction</td>
<td>(Kiene &amp; Barta, 2006)</td>
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<tr>
<td><strong>Computerized Risk Assessment/Diagnostic Tools</strong></td>
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<td></td>
<td>5. Computer-assisted Motivational Intervention (CAMI)</td>
<td>(Gold, Chiappetta, Young, Zuckoff, &amp; DiClemente, 2008)</td>
<td>X</td>
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<td></td>
<td>6. Youth Health Provider</td>
<td>(Paperny, 1997)</td>
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<td></td>
<td>7. Aid for Contraceptive Decision-making (ACD)</td>
<td>(Chewning et al., 1999)</td>
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<td><strong>Internet Class</strong></td>
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<td></td>
<td>8. Health Info. Consumer Skills</td>
<td>(Kalichman et al., 2006)</td>
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<tr>
<td><strong>Informational Web Site</strong></td>
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<tr>
<td><strong>Internet-based Modules</strong></td>
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<td></td>
<td>10. Keep it Real</td>
<td>(Bull et al., 2007; 2008; 2009)</td>
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<td></td>
<td>11. Trust Yourself, Reduce Your Risk</td>
<td>(Roberto et al., 2008; Roberto, Zimmerman, Carlyle, &amp; Abner, 2007; Roberto, Zimmerman, Carlyle, Abner, et al., 2007)</td>
<td>X</td>
<td></td>
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<td></td>
<td>12. +CLICK (adapted from IYG)</td>
<td>(Markham, Shegog, Leonard, Bui, &amp; Paul, 2009)</td>
<td>X</td>
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<td></td>
<td>13. Queermasters</td>
<td>(Kok, Harterink, Vriens, de Zwart, &amp; Hospers, 2006; Mikolajczak, Kok, &amp; Hospers, 2008)</td>
<td>X</td>
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<td></td>
<td>14. Smart Sex Quest</td>
<td>(Bull et al., 2004)</td>
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<td></td>
<td>15. WRAPP Internet Intervention</td>
<td>(Bowen, 2005; Bowen, Williams, Daniel, &amp; Clayton, 2008)</td>
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<table>
<thead>
<tr>
<th>Delivery Method</th>
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<th>Author</th>
<th>Youth</th>
<th>Adults</th>
<th>HIV+</th>
<th>MSM*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chat Room</td>
<td>16. PowerON</td>
<td>(Moskowitz, Melton, &amp; Owczarzak, 2009a;b)</td>
<td></td>
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<td>X</td>
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<td>Virtual World</td>
<td>17. Sexual Health Sims - Second Life</td>
<td>(Beard, Wilson, Morra, &amp; Keelan, 2009)</td>
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<tr>
<td>E-mail-based</td>
<td>18. Online Prevention Program</td>
<td>(Lau, Lau, Cheung, &amp; Tsui, 2008)</td>
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<td>X</td>
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<td></td>
<td>19. STDTest.org &amp; syfilistest.nl</td>
<td>(Koekenbier, Davidovich, van Leent, Thiesbrummel, &amp; Fennema, 2008; Levine, Scott, &amp; Klausner, 2005)</td>
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<td></td>
<td>20. IWanttheKit.org</td>
<td>(Owens et al., 2009)</td>
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<td>Online STD Testing</td>
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<td>Cell Phone</td>
<td>21. Cell Phone Reminders</td>
<td>(Puccio et al., 2006)</td>
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<td>X</td>
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<td>Text Messaging Service</td>
<td>22. Hookup &amp; TeenSource</td>
<td>(Woodruff, 2009)</td>
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<td></td>
<td>23. SexInfo</td>
<td>(Levine, McCright, Dobkin, Woodruff, &amp; Klausner, 2008)</td>
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<td></td>
<td>25. Text to Change</td>
<td>(Text to Change, 2009)</td>
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<td>27. Video to Promote Dual Methods</td>
<td>(Roye, Perlmutter Silverman, &amp; Krauss, 2007)</td>
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<tr>
<td>Video Game</td>
<td>28. Baby Game and Romance</td>
<td>(Paperny &amp; Starn, 1989)</td>
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<td></td>
<td>29. Life Challenge</td>
<td>(Thomas, Cahill, &amp; Santilli, 1997)</td>
<td></td>
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*MSM = Men who have sex with men
RESULTS

Literature Review

As shown in Table 2, 29 interventions fulfilled the project’s inclusion criteria for systematic review (see Appendices of Craig Rushing [2010] for intervention abstracts and additional matrices). Reviewed articles included preliminary feasibility and usability studies, randomized controlled trials, quasi-experimental studies, and non-experimental utilization reports. Study participants varied in age, gender, ethnicity, and sexual orientation. Twenty-one interventions targeted young adults, seven targeted men who have sex with men, and four targeted people who were HIV-positive. Most of the interventions included in the review specifically addressed sexual risk factors, but two addressed a wide range of health topics pertinent to youth (like sexual activity, alcohol use, marijuana use, substance abuse, sexual abuse, contraception, and suicide attempts). None of the interventions were designed for AI/AN populations, and none of the evaluation studies included a significant number of AI/AN participants.

Altogether, 22 of the interventions were delivered using a computer or CD-ROM, 12 required Internet access, four were delivered via a cell phone using text messages, two were primarily video-based, and three solely involved a computer-based video game. The interventions were implemented in a variety of settings (e.g., clinics, schools, community centers, at home), and were administered by a range of trained and untrained personnel (e.g., clinicians, health educators, teachers, or self-administered). Many included messages or visual content that was aligned to the users’ age (n = 29), gender (n = 13), race/ethnicity (n = 5), sexual orientation (n = 7), stage-of-change (n = 4), self-identified informational needs (n = 9), or reported risk factors (n = 14). To create tailored content, 18 imbedded risk, needs, or readiness assessments directly into the program. Slightly fewer (n = 13) incorporated “virtual” interactions with a health care provider or user-generated goal-setting activities or self-monitoring tools. Twenty-two included skill-building exercises or personal development tools, like goal-setting activities, boundary-setting activities, condom demonstrations, or activities that helped users practice healthy communication skills. Fourteen required users to participate in multiple sessions, 15 involved interactions with peers or peer role models, and 15 involved virtual or in-person communication with health experts. Most of the interventions (n = 21) were interactive, requiring active participation by the user (i.e., as opposed to passively reading text or watching a video). Fewer (n = 12) were intensely multimedia, integrating text, audio, video, games, quizzes, and links to other sources within the intervention.

The interventions reported varying levels of effectiveness, and tracked a variety of cognitive and behavioral outcomes. Only one (3%) reported changes in perceived sexual risk or consequences, three (10%) reported changes in intention or motivation, and three (10%) reported changes in
perceived peer norms or behaviors. Ten (34%) interventions reported changes in participant knowledge about STDs, HIV, or condoms, seven (24%) reported changes in sexual values or attitudes, and nine (31%) reported changes in participant skill or self-efficacy. Altogether, 12 (41%) reported changes in condom or contraception use, STD/HIV screening rates, or sexual activity (11 of which were statistically significant at the p<.05 level).

Despite this seemingly low level of effectiveness, fewer than half of the interventions were truly designed to assess behavioral outcomes. Instead, many were intended to evaluate the intervention’s acceptability and feasibility, and thus involved small sample sizes, did not track behavioral outcomes, or did not assess changes in behavior over time. Thirteen (45%) were evaluated using a cohort or non-experimental design to test preliminary effectiveness, acceptability, or utilization rates. Thirteen (45%) were evaluated using randomized controlled trials, and three (10%) were evaluated using non-randomized controlled trials. Studies that did include follow-up with a sufficient number of participants showed promising changes in knowledge, attitude, and behavior.

CBPR Recommendations for Intervention Selection and Adaptation

After reviewing data from the Native Youth Media Survey, abstracts describing available technology-based sexual interventions, charts comparing their features and effectiveness, and photos or demonstrations of available programs, tribal coalition members discussed the merits and drawbacks of available strategies, prioritized options in light of resultant data and community experience, and proposed recommendations for designing culturally appropriate interventions. During these meetings, participants identified several traits that they felt ought to be considered when designing or adapting interventions. Specifically, interventions should:

• **Contain Accurate Age- and Gender-Appropriate Content.** Interventions should contain gender-specific information and age-appropriate content for younger and older youth, using the tailoring capabilities of computer-based technologies. Health information should be monitored and “medically accurate.”

• **Start Early and Encourage Abstinence.** Prevention messages should target pre- and young teens. We need to start “when children are younger,” before they are sexually active, and be sure to include “a bigger focus on abstinence.”

• **Be Holistic and Real.** Participants noted that many existing technology-based interventions did not address other important adolescent health issues. Interventions targeting Northwest AI/AN youth should be more holistic. Early sexual debut, substance abuse, violence, and suicide are symptoms of deeper social and emotional challenges,
including poverty, discrimination, and sexual abuse. Interventions targeting AI/AN youth must be real, reflect the unique life experiences of Native youth, and address the root social determinants of their health.

- **Be Based in Culture.** Interventions targeting Northwest AI/AN youth should incorporate cultural materials, “like tribal stories or history to teach important concepts.” None of the interventions reviewed by participants contained text, photos, or design elements specific to AI/ANs.

- **Focus on Assets and Skills.** Instead of stigmatizing sexuality, interventions should focus on “positive messages and protective factors,” including both the physical and “emotional aspects of relationships.” It is important for interventions to demonstrate and allow youth to practice important skills (like refusal skills, condom negotiation skills, and how to use a condom), “get them involved in their own health and well-being,” and permit users to navigate through the content that most interests them.

- **Encourage Dialogue While Maintaining Privacy.** Interventions should include content that supports dialogue with trusted adults (“not necessarily parents”), and “ways for local adults to provide follow-up if a teen needs additional resources.” Participants also felt that youth should be able to access private, “confidential” information and services.

- **Be Interactive.** Interventions should incorporate a wide range of interactive features, like quizzes and games, as well as the ability to contact or converse with experts. Participants particularly liked the interventions that had a human voice guiding teens, “making the social interactions more realistic.”

- **Incorporate Evaluation Plans.** New programs should also incorporate evaluation strategies to continuously monitor their use and “measure their effectiveness.”

Participants also identified several potential barriers that they felt ought to be considered when designing or adapting technology-based interventions for AI/AN youth. These included:

- **Staffing and Intervention Setting.** Participants expressed concern about interventions that were labor intensive, and interventions that required technical expertise or multiple people to implement. To be most widely implemented, interventions should be flexibly designed for use in home, community, or clinic settings. If interventions are designed to be implemented by local health educators, they must be easy to pick up and ready to use.
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.
Stephanie Craig Rushing, PhD, MPH
Northwest Portland Indian Health Board
2121 SW Broadway, Suite 300, Portland, OR  97201
E-mail: scraig@npaihb.org

REFERENCES


**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.
PHOTOVOICE FOR HEALTHY RELATIONSHIPS: COMMUNITY-BASED PARTICIPATORY HIV PREVENTION IN A RURAL AMERICAN INDIAN COMMUNITY

Susan F. Markus, MS, LPC

Abstract: This article provides an example of a culturally responsive, community-based project for addressing social determinants of health in rural American Indian (AI) communities through: 1) empowering youth and community voices to set directions for HIV, sexually transmitted infections, and unintended pregnancy prevention and education efforts; 2) using Photovoice to promote healthy relationships among AI youth; 3) using the socioecological model (Centers for Disease Control and Prevention, 2004; 2011) as a framework for organizing the creation and subsequent sharing of Photovoice messages from individual empowerment, to relationships, communities, institutions, and general society; and 4) framing analysis of Photovoice projects in alignment with Bell’s (2010) model of storytelling for social justice that connects narrative and the arts in anti-racist teaching. A discussion on future steps and recommendations for future research is provided.

The Wind River UNITY Photovoice for Healthy Relationships project is a participatory action research project of The Wyoming Health Council and the Wind River UNITY youth council that began in 2010 with the development of Photovoice stories, and continues with sharing of the stories for prevention and education purposes. The project is funded by the Wyoming Department of Health HIV Prevention Program and a mini-grant from the Region VIII Office on Women’s Health. Photovoice consultation has been provided by Dr. Kent Becker, Professor of Counselor Education at the University of Wyoming College of Education. The Wyoming Health Council is a private, nonprofit organization committed to providing access to reproductive health supplies, services, and education in Wyoming. The participant co-researchers are a group of 18- and 19-year-old American Indian (AI) members of Wind River UNITY (United National Indian Tribal Youth) in Wyoming.
Wind River UNITY is part of a national organization that empowers AI youth to be leaders in their communities by educating about and supporting healthy lifestyles, heritage, the environment, and community service. In this project, young AI UNITY members engaged in storytelling through photography and written narratives and, in turn, are sharing their stories for disease prevention and health promotion with their peers and community members. Their perspectives illuminate powerful, poignant, hopeful, clear paths to preventing HIV, sexually transmitted infections (STIs), and unintended pregnancy.

This article provides information about 1) amplifying voices of community members to set directions for community-based prevention of HIV, STIs, unintended pregnancy, and related risks on the Wind River Indian Reservation in Wyoming; 2) how the Wind River UNITY Photovoice for Healthy Relationships project was carried out; 3) emergent themes of the project within Bell’s (2010) framework of *Storytelling for Social Justice*; 4) how the project is used in education about healthy relationships in culturally responsive prevention of HIV, STIs, and unintended pregnancy; and 5) lessons learned and future directions.

**GUIDING FRAMEWORKS**

The overarching focus of the Wind River Photovoice for Healthy Relationships project is twofold: First, we set out to empower young AI people to learn about the role of healthy relationships in the prevention of HIV, STIs and unintended pregnancy by participating in a Photovoice project that helped them explore their own experiences with healthy relationships. Second, we envisioned sharing the Photovoice stories with other youth, as well as with parents and others who influence youth, community members, and society at large to emphasize the importance of integrating cultural responsiveness in all health promotion and disease prevention activities. With knowledge about health disparities among marginalized populations driving the need for this work, we hoped to highlight and address disparities in HIV, STI, and unintended pregnancy rates among young AI people in Wyoming. Thus, we framed our work within the perspectives of public health and social justice.

**Public Health Frameworks**

We used public health frameworks provided by the Centers for Disease Control and Prevention (CDC) and the World Health Organization to conceptualize and facilitate the project. First, we focused on addressing social determinants of health (CDC, 2008; Commission on Social Determinants of Health, 2008); second, we focused on mobilizing the project within the socioecological model of disease prevention and health promotion (CDC, 2004; 2011).
Social Determinants of Health

Reducing health disparities is a key focus of the National Center for HIV, STD and TB Prevention (CDC, 2008). Health disparities are intricately connected to social determinants of health (CDC, 2008; Commission on Social Determinants of Health, 2008), and social justice is key to reducing these disparities. Indeed, the Commission on Social Determinants of Health (2008) states:

Social justice is a matter of life and death. It affects the way people live, their consequent chance of illness, and their risk of premature death… inequities in health, avoidable health inequalities, arise because of the circumstances in which people grow, live, work, and age, and the systems put in place to deal with illness. The conditions in which people live and die are, in turn, shaped by political, social, and economic forces. (p. 3)

Because social justice is integrally connected with reducing health disparities, for this project, we chose a participatory action research (PAR) format because of its commitment to social action (Smith, Rozenzweig, & Schmidt, 2010). Indeed, PAR research is conducted with, not on, participants, and every PAR study is structured uniquely (Smith et al., 2010).

Socioecological Model

To address social determinants of health by imparting social justice where people grow, live, work, and age, and, we hoped, to provide the impetus for change in political, social, and economic forces, we organized the Wind River UNITY Photovoice for Healthy Relationships project within the socioecological model of change for disease prevention and health promotion (CDC, 2004; 2011). The model, as shown in Figure 1, depicts how both risks and protective factors can move through layers of ecological systems, from individuals, to relationships, to communities, to institutional/structural policies and laws, and, finally, to society (CDC, 2004; 2011). In the Photovoice project, participant co-researchers were empowered with knowledge about the role of healthy relationships in preventing HIV, STIs, and unintended pregnancy, and were then encouraged to think about reaching various audiences throughout the layers of the socioecological model with their stories.
Social Justice Frameworks

Photovoice

Photovoice is a group process that engages people in telling their stories through photography to increase community awareness about an issue and, potentially, to mobilize change (Wang & Burris, 1997). The facilitator’s role in Photovoice is to encourage storytelling and group reflection about pictures to identify emergent themes, and empowerment of participants is one of the key goals (Wang & Burris, 1997). The theoretical underpinnings of Photovoice are Paulo Freire’s Critical Pedagogy and Critical Race Theory (CRT). In this study, we applied Bell’s (2010) CRT-informed Storytelling for Social Justice schema for organizing emergent themes from the photo stories in the data analysis phase of the research project.

Freirian Critical Pedagogy

With roots in literacy education (Freire & Macedo, 1987), and affecting educational, health, economic, and social realms, Paulo Freire’s Critical Pedagogy is often the most recognized theoretical underpinning of storytelling and directly imparts change through all layers of the socioecological model. Freire, a Brazilian educator, worked with oppressed people in equalized relationships to empower them to critically examine their situations and transform their own lives (Freire, 1970). The process is similar to that of Photovoice; empowerment and a sense of community emerge as teachers and students work together to examine, analyze, and explore the meanings behind photographs and scenes from their environments (Higgins, 1997).
Critical Race Theory

CRT has roots in legal scholarship to challenge structural racism, Anglo-American ethnocentrism, and universally accepted truths upon which the legal system is built (Ladson-Billings & Tate, 1995). CRT has a fundamental commitment to social justice and the elimination of all forms of subordination and posits that experiential knowledge and counter narratives of people of color are critical in creating social justice (Ladson-Billings & Tate, 1995).

Bell’s Storytelling for Social Justice

Building on the foundation of CRT, Bell (2010) developed a model of *Storytelling for Social Justice* that connects narrative and the arts in a group process for anti-racist teaching. The progression of narratives explored through Bell’s group process are:

1) *Stock narratives*, or widely accepted accounts of history and stereotypes that rationalize racism and perpetuate social inequities (Bell, 2010). Stock narratives have been taught from a Westernized view in schools, perpetuating stereotypes about AIs and preventing AI youth from seeing themselves in their schooling (Nieto & Bode, 2008).

2) *Concealed narratives* or *Counter narratives* of marginalized groups that are historical stories hidden under stock stories and tend to be unrecognized in dominant society (Bell, 2010).

3) *Stories of resistance* that highlight the women and men (beyond often-tokenized heroes in dominant culture, such as Dr. Martin Luther King, Jr.) who are heroic in their courage to stand up against oppression and counter the stock narratives; and,

4) *Emergent/transformative narratives* that challenge stock stories and weaken cycles of structural racism by empowering people to imagine an inclusive, socially just society for all (Bell, 2010).

THE PROBLEM

Wyoming’s AI youth face complex challenges, related to historical trauma and contemporary racism, that increase their risk for HIV, STIs, and unintended pregnancy. With intergenerational grief as a backdrop and disparities due to ongoing structural racism as the landscape, young AI people face interrelated risks of substance abuse and trauma. In addition, young people in Wyoming—both AI and non-AI—face HIV/AIDS risks related to the geographic and cultural challenges of living in a rural frontier area.
Historical Trauma and Historical Trauma Response

A myriad of interrelated experiences culminate in higher rates of poor health and shorter life expectancy among AIs than among members of other racial/ethnic groups in the U.S. (U.S. Commission on Civil Rights, 2004). These issues are rooted in and perpetuated by AI people’s experiences since first contact with Europeans, including genocide, ethnocide, forced removal from Tribal lands and livelihood, and children being taken from the care of their families and Tribes to be placed in boarding schools where they experienced emotional, physical, and sexual abuse (Brave Heart, 2003; Brave Heart & DeBruyn, 1998; Dennis, 2009; Lowe, 2008, U.S. Commission on Civil Rights, 2004). Brave Heart (2003) explains:

Historical trauma (HT) is cumulative emotional and psychological wounding over the lifespan and across generations, emanating from massive group trauma experiences; the historical trauma response (HTR) is the constellation of features in reaction to this trauma. The HTR often includes depression, self-destructive behavior, suicidal thoughts and gestures, anxiety, low self-esteem, anger, and difficulty recognizing and expressing emotions. It may include substance abuse, often an attempt to avoid painful feelings through self-medication. (p. 7)

Boarding school experiences have created devastating effects on AI families today, as emotional, physical, and sexual abuse were inflicted upon and learned by AI children in these schools (Brave Heart & DeBruyn, 1998). “Spiritually and emotionally, the children were bereft of culturally integrated behaviors that led to positive self-esteem, a sense of belonging to family and community, and a solid American Indian identity. When these children became adults, they were ill-prepared for raising their own children in a traditional American Indian context” (Brave Heart & DeBruyn, 1998, pp. 63-64).

Historical Trauma Response and Interrelated Risks among AI Youth

Witnessing and experiencing trauma is connected with self-medication through substance use, and, in turn, with sexual assault and/or sexual behaviors that increase risk of HIV and STIs among AI women and youth (CDC, 2006; Dennis, 2009; Lowe, 2008; Vernon, 2001; Vernon & Jumper-Thurman, 2005). Marginalized populations continue to be at higher risk of sexual assault and related HIV infection than non-marginalized groups (CDC, 2006), and the rape/sexual assault rates are highest among AI and African American populations (Ellison, 2003). Girls who report experiencing dating violence are almost three times more likely to test positive for STIs than non-abused girls (Decker, Silverman, & Raj, 2005), and AI youth have higher rates of STIs than any other ethnic group (Vernon, 2001). Self-medication to relieve pain associated with historical trauma
and experiencing and/or witnessing traumatic events can reduce inhibitions and perceptions of risk, causing protective factors to be minimized and creating a cyclical risk for HIV, STIs, and unintended pregnancy (Vernon, 2001).

### Intersection of structural educational inequalities, poverty, and health disparities

Schools have historically produced and reproduced social inequalities in society (Ndimande, 2010). Disparities in outcomes on key indicators of educational performance are noted when children of color are compared with White students. The National Assessment of Education Progress from 1992-2003 found that White and Asian students scored higher than Hispanic, African American, and AI students on most academic indicators (Peterson, 2005). Faircloth and Tippeconnic (2010) found strikingly high dropout rates among AI students in U.S. states with high concentrations of AIs.

Nieto and Bode (2008) express that:

Ethnocentrism is found in our history books, …[and] monocultural education is the order of the day in most of our schools. Because viewpoints of so many are left out, monocultural education…deprives all students of the diversity that is part of our world. (pp. 48-49)

When delivered from a viewpoint that does not integrate all students’ cultural worldviews, education has been used as “a tool for forcibly changing, and in some cases, destroying indigenous cultures” (Stavenhagen, 2008, p. 165). Racial disparities intersect with poverty, and the poorest non-White children are often marginalized in schools (Nieto, 2003; Shields, 2004). According to Lee (2002), inequality in education creates “lifetime consequences” (p. 3). Youth who face discrimination and oppression are at higher risk of teen pregnancy, STIs, and HIV (Davis, 2003). Poverty, inequalities in health and education, and language and cultural barriers all play a role in these disparities (CDC, 2009). When students drop out of school, they may not receive preventive health education. Dennis (2009) reported that rates of exposure to sexuality education topics, number of years of school, and grade levels completed are all low among AI students. In addition, like other youth in the state, AI youth face challenges related to risk behaviors and to the rural, frontier nature of Wyoming’s geography and population.

### Youth Risk Behaviors in Wyoming

There is a dangerous interplay among high rates of dating violence, sexual abuse, sexual coercion, substance abuse, and youth risk behaviors in Wyoming. These risks may be exacerbated among AI youth by historical and contemporary experiences of racism and trauma, and by witnessing trauma.
Trauma, Violence, and Sexual Coercion among Wyoming Youth

A major portion of the Wind River Indian Reservation is located in Fremont County, Wyoming. The average teen birth rate in Fremont County is 74.5 per 1,000 teen girls, the highest in the state (Kids Count, 2007). Mylant and Mann (2008) found strong correlations among teen pregnancy, intimate partner violence, and substance abuse rates among teen mothers, and Wyoming has the second highest percentage in the nation of high school students responding “yes” to the question: “Have you ever been physically forced to have sexual intercourse when you did not want to?” (CDC, 2010). The Wyoming Youth Risk Behavior Survey indicates high rates of dating violence among Wyoming youth. In 2011, 14.2% of Wyoming high school students reported having been hit, slapped, or physically hurt on purpose by their boyfriend or girlfriend during the past 12 months, up from 7.9% in 2003 (Hill, 2011).

Substance Abuse among Wyoming Youth

In 2011, 47.9% of Wyoming high school students reported they had engaged in intercourse, and 26.7% of those reported substance use before their last intercourse (Hill, 2011). The 2006 National Survey of Drug Use and Health Report found that rates of methamphetamine use among youth ages 12 to 17 years were highest in the rural states of South Dakota, Montana, North Dakota, and Wyoming (Office of Applied Studies, 2006). Further, AIs experience the highest rates of methamphetamine abuse among all ethnicities, creating negative ripple effects throughout communities (Partnership for a Drug-Free America, 2009).

Rural Frontier Challenges

In rural areas in the U.S., HIV prevention programs lag behind those in urban areas due to stigma associated with HIV and high-risk groups; geographic isolation that hinders access to preventive, medical, and social services; and overall low HIV rates (Williams, Bowen, & Horvath, 2005). These challenges are indeed present in Wyoming.

Isolation and Related Access Challenges

Wyoming’s frontier (5.8 persons/square mile) population of 536,626 is spread over 97,100 square miles (U.S. Census Bureau, 2010). The lack of services within rural communities means driving long distances to reach assistance, which is sometimes completely inaccessible due to harsh weather and rugged terrain. Services that are not community based often are not specifically tailored to a community’s unique population (Castaneda, 2005)—an especially important consideration when working with AI populations, who have experienced pervasive trauma when ethnocentric values...
were imposed upon them. Further, for AI populations, access issues are compounded by poverty. According to Lowe (2008), 31.6% of the AI population in the U.S. lives below the poverty level, and “poverty is associated with poor access to primary and preventive health care and services” (p. 231).

**Stigma**

According to the Center for AIDS Prevention Studies (2006), a powerful stigma is associated with homosexuality and HIV/AIDS in many rural areas; as a result, young gay men feel forced to hide their homosexuality and to travel to urban areas or turn to the Internet to seek partners, thus increasing their risk of becoming infected with HIV. Meanwhile, only 22% of all Wyoming high schools provide support in the form of Gay Straight Alliances (Wyoming Department of Education, 2010).

**AMPLIFYING COMMUNITY AND YOUTH VOICES TO SET DIRECTIONS**

Cross (2003) states:

> We must reframe our professional thinking about culture, and we must move from thinking of diversity as a problem to solve to seeing culture as one of our greatest assets for healing and mental wellness… I challenge you to tap into the richness of culture as a resource and to meet people where they are most closely engaged in meeting their needs. I also challenge you to help our children find the strengths, positive emotions, and mental wellness that are part of every culture. (p. 359)

Ethnocentrism in educational, health, and social service settings results in services that are incongruent with non-dominant cultural values and ways of being. Too often, solutions are placed onto people, especially youth, without inviting them to share their voices and work collaboratively toward solutions. Literature highlights the importance of building individual, community, and societal relationships in order to partner with youth and communities to foster social change (Cross, 2003; Duncan-Anrade, 2009; Freire, 1970; Shields, 2004; Sleeter & Grant, 2009). With this in mind, the Wyoming Health Council consistently invites young people to be leaders in setting directions for disease prevention and health promotion in their own communities as part of various social justice-oriented PAR projects. Indeed, according to the Commission on Social Determinants of Health (2008), “political empowerment for health and health equity requires strengthening the fairness by which all groups in a society are included or represented in decision-making about how society operates, particularly in relation to its effect on health and health equity” (p. 158).
In 2009, the Wyoming Health Council engaged in dialogues with young people about sexuality education with funding from a Department of Health and Human Services Title X Family Planning Adolescent Expansion Grant. Focus/dialogue groups with AI college students brought vital, lively, optimistic, and humorous perspectives to the work. Participants reported that it had been rare in their adolescent years for an adult to have spoken with them about reproductive health, and most said they learned about sexuality and relationships from TV, movies, the Internet, and friends (Markus, 2010b). Participants felt that it would be valuable for parents, teachers, and other adults in the community to have tools to provide relationship guidance to children from an early age; they also noted that peer education was a powerful tool (Markus, 2010a). The group enthusiastically offered to do the educating, thus planting the seeds for the Photovoice project.

METHODOLOGY

The Wind River UNITY Photovoice for Healthy Relationships project was approved by the Institutional Review Board (IRB) at the University of Wyoming. The phases of the project were the creation of the Photovoice stories, analysis of the stories along the four phases of Bell’s (2010) model of Storytelling for Social Justice, and facilitation of a community strategizing session with participant co-researchers to develop plans for sharing the project for disease prevention, health promotion, and social change.

Participant Co-researchers

The participating co-researchers were three female and three male 18- to 19-year-old AI members and the advisor of the Wind River UNITY youth council. Information about the project was given to the advisor of the UNITY group, who shared information with all UNITY members. Those interested in participating notified the advisor, who referred the potential participants to the project.

Creating the Wind River UNITY Photovoice Stories

The creation of the Wind River UNITY Photovoice for Healthy Relationships project stories took place over 3 consecutive days on the Wind River Indian Reservation in Wyoming, during the summer of 2010. On Day 1, participants each made an informed decision about participating in the project by completing an IRB-approved consent form. Next, they engaged in education and discussion about preventing HIV, STIs, and unintended pregnancy, as well as the role of healthy relationships in prevention.
Next, participants learned about Photovoice as a storytelling approach to social activism and a way to amplify their own voices. Definitions of Critical Race Theory, master narratives, and counter narratives were explored and discussed. Digital cameras were purchased prior to the project for the participants’ use. Participants learned the basics of photography and experimented with moving in closer to objects and taking pictures from a distance, and began to think about using symbolism to depict a story (Becker, Lambert, Roberts, Bishop, & Covello, n.d.).

Participants completed the “All of Me” drawing (Becker et al., n.d.) to explore master and counter narratives about their group. Each participant drew an outline depicting him- or herself on large paper. On the outside of the line they wrote or drew assumptions and stereotypes people have about them. On the inside of the line, they wrote and drew their strengths, skills, and abilities; things they want others to know about them; and their hopes, dreams, and goals.

Next, participants explored what messages they hoped to share and with whom, using the CDC’s (2004; 2011) socioecological model. In the Photovoice project, the model provided a way for the participants to think about their project in terms of its potential to empower them as individuals, to help them develop and sustain healthy relationships, and, in turn, to advocate for themselves in their communities, institutions, and even in society at large. In facilitated discussion, the participants noted, for each layer of the model, who and what supports and presents challenges to their building and maintaining healthy relationships, and considered master narratives that perpetuate challenges as well as possible counter narratives that could be shared through Photovoice.

On Day 2, participants spent time on their own or in pairs or groups shooting their photos. They were again asked to consider what a healthy relationship means to them, who/what supports and/or presents challenges to them in building and maintaining healthy relationships, and what they need in order to build and maintain healthy relationships. Day 3 entailed a group process in which the participants brought their photos back to the group, added narratives, and put them into a PowerPoint presentation.

RESULTS

The Wind River UNITY photo narratives tell a collective story of enduring wisdom and strength of AI cultures, shining through and living on in each of the participants and their stories, as shown in Figures 2-4 (at the end of the article). The Photovoice project was developed for five purposes that follow the layers of the socioecological model as follows:

1) Individual: to empower the participants with increased knowledge of the role of healthy relationships in preventing HIV, STIs, unintended pregnancy, and interrelated risks;
2) **Individual and Relationships**: to empower the participants to explore and identify what a healthy relationship means to them, and how they are both supported and challenged in developing and maintaining healthy relationships;

3) **Individual, Relationships, and Community**: to use the finished Photovoice project to engage in peer education about the role of healthy relationships and cultural heritage in preventing HIV, STIs, unintended pregnancy, and related risks;

4) **Individual, Relationships, Community, and Institutional**: to educate community members, educators, and health and social service professionals about how young AI people view healthy relationships and the culturally responsive ways adults can support them in developing and sustaining healthy relationships; and

5) **Individual, Relationships, Community, Institutional, and Societal**: to empower the participants to advocate for social justice to reduce ethnocentrism that may be related to disparities in health and educational outcomes of marginalized populations.

### Analysis of the Photovoice Project

Four months after the photo stories were created, the group reconvened to participate as co-researchers in analysis. Each participant’s photo story, consisting of three to five photos, was viewed via PowerPoint, and the participant was invited to talk about his or her story in terms of what messages it portrayed about healthy relationships, as well as any master narratives it countered. Other group members were then invited, with the photographer’s permission, to share what meanings they connected with the photo story.

Bell’s (2010) model, with its theoretical underpinnings in CRT, engages people in creative storytelling for social justice within four types of narratives. The themes that emerged from the Wind River UNITY Photovoice for Healthy Relationships project naturally fit into this schema due to the group process and the CRT focus on master and counter narratives, as follows:

1) **Stock narratives**: The participants talked about stock narratives that view AI cultures as having substance abuse problems and high rates of teen pregnancy, and that view the two Tribes of the Wind River Reservation as enemies. As one participant highlighted in the analysis session:

   I think there is a belief that the Northern Arapaho and Eastern Shoshone tribes of the Wind River Reservation are “warring tribes” and that we can’t get along. But UNITY is made up of young people from both tribes. Some of us have one parent from each tribe. We all support each other and we are like brothers and sisters, all one family. We are peaceful. When I’m by myself and I see another UNITY member,
I feel so good inside—so connected to that person—I know we are all here for each other. I think that’s what UNITY means. (UNITY Photovoice participant, personal communication, December 30, 2010)

2) Concealed narratives: The Photovoice participants expressed that they rely on storytelling from their elders and multicultural educational opportunities to learn about AI and Tribal history that has been hidden by stock narratives. Knowledge of these stories strengthens their cultural identity and self-esteem. They expressed that the more they learn, the more they are determined to survive. One participant expressed,

People think we are incapable. That we are incapable of taking care of ourselves and each other. They think on the rez we are surrounded by negative stuff. They don’t even know how the government played a role in the alcoholism of our people. But we are keeping a strong spirit. A lot of us young people live a drug- and alcohol-free life because we know how those things have hurt our people over the years. It has been another way to try to do away with us. But we are still here! We keep a strong spirit and we take care of each other. The powwow helps us come together and celebrate. We are still here. We keep a strong spirit and we tell each other, “You can do it.” (UNITY Photovoice participant, personal communication, December 30, 2010)

And with regard to teen parenting, another expressed,

We do have teen pregnancy among our youth. But this isn’t about that. To me, this shows something else about healthy relationships in our culture. This shows responsibility, priorities, family. Our key is to honor the children and protect them. Even at a young age, the decision of having a child is sacred and a child is a sacred gift. Her child will be in her heart always. This shows the importance of supporting her as she is a mother to this sacred child. They are our responsibility too. We all have to support her and be her family. Even if she is so young—she needs our respect even more for the decision she has made to be the most important person, a mother. We have respect for our moms. Moms are honored. Their priority is teaching their children respect so we must be respectful of mothers. It all goes full circle. (UNITY Photovoice participant, personal communication, December 30, 2011)

And:

The circle is very important. Some people just see a teen mom and they are not respectful of her. And people think a powwow is just a powwow. But these things
are so important in healthy relationships. When you’re around that drum you just can’t use drugs or alcohol. Those songs mean so much. They mean we are all one with Mother Earth. When you are hearing the heartbeat of Mother Earth, you just can’t think about being disrespectful to yourself or anyone or anything else. Even the animals. The drum is made from deer and elk. It shows respect to that animal. Respect to all Native tribes. We are all one. There is no division. That is why the circle is so important. (UNITY Photovoice participant, personal communication, December 30, 2011)

3) **Stories of resistance**: Through the Photovoice project, the co-researchers expressed that their heroes and sheroes support them in building and maintaining healthy relationships. Historical chiefs, sub-chiefs, current Tribal leaders, youth council advisors, ancestors, parents, elders, siblings, and peers are all a part of one connected family upon whom they rely for strength and wisdom for engaging in healthy relationships. Drumming, singing, and dancing at powwows; listening to the stories of their elders and Tribal leaders; learning their native language; and sharing this knowledge with others are all ways to perpetuate stories of resistance. For example, one participant stated:

> There’s a wealth of knowledge from our elders and chiefs. We carry their spirits within and we honor their struggles and their pride. A way to do this is through teaching our children—they are our first priority. We can all carry the legacy by sharing their wisdom with our children. Their pride, their wisdom—hold it in your heart—we are descendents of Chief Washakie-and his leadership is always within us. It’s not about bragging rights to say we’re Indians—it is about honor and pride and carrying their legacy on. We come from great people. (UNITY Photovoice participant, personal communication, December 30, 2011)

And:

And that circle at the powwow is also very important and has meaning about our youth. The ones who are in the circle—drumming, singing, dancing—they are in a safe place with a community around them. They are sacred. We want all of our children to be in that circle. The farther you are from that circle, the more you are subject to those stereotypes of drugs and alcohol and other risks. We want to bring our children and our youth into that circle. So UNITY and powwows are a way to bring them back into the circle. We are setting an example and when people see that, and they feel it, they also want to be in that circle, be a part of the family. (UNITY Photovoice participant, personal communication, December 30, 2011)
Emergent/transformative narratives: The Photovoice project allowed a powerful story of transformation to emerge for the young co-researchers, especially with regard to hope for healing from historical trauma. The enduring strength and wisdom of AI cultures is expressed by the natural emergence of Indigenous culture in every participant’s photo story, and by the words of one of the participants:

Lots of us young people are trying to be fluent speakers of our language. Whenever you speak your own language it brings pride. I want to be able to say I’m a fluent speaker. In boarding school days we died if we spoke our language. We are still here. We are still here! And there’s the importance of knowing who we are—we learn our language, follow dances, learn songs, follow prayers. When you pray in your own language it makes our whole world brighter. If we could all be free to pray in our own languages, it could be so powerful and peaceful. (UNITY Photovoice participant, personal communication, December 30, 2011)

Sharing of the Wind River UNITY Photovoice for Healthy Relationships Project

In April 2011, the Wind River UNITY Photovoice for Healthy Relationships project was presented at the University of Wyoming’s 15th Annual Shepard Symposium on Social Justice. In the late summer of 2011, the Wind River UNITY Photovoice for Healthy Relationships Art Reception and Community Conversation was held at the Intertribal Center at Central Wyoming College in Riverton, Wyoming. Community members and leaders of the Wind River Indian Reservation and Fremont County, including parents, grandparents, Tribal leaders, college counselors, teachers, youth, and community mental health providers attended this event, which entailed an art exhibition featuring the Photovoice project. A community dialogue followed the art reception, during which audience members discussed their reactions to the display and, in turn, discussed community strategies for next steps in addressing HIV, STIs, unintended pregnancy, and related youth risks.

Strategies developed by the community and the Photovoice co-researchers involved identifying additional community events and group meetings at which to present the project, as well as clarifying a key take-away message of the project. The overall message they identified is that it is vitally important to integrate AI values and historical and contemporary cultural wisdom in a culturally congruent manner when providing sexuality education to young AI populations. Indeed, the Photovoice project and its analysis highlight that AI youth draw heavily on their cultural heritage for wisdom and support in building and sustaining healthy relationships. Having strong adult AI role models who promote this wisdom, in turn, has empowered the Wind River UNITY Photovoice co-researchers to become positive role models for their younger peers.
As a result of this initial strategizing session, the Photovoice project was presented at the 2nd Annual Native American Education Conference on the Wind River Reservation in October 2011, in which UNITY shared with educators the importance of honoring and supporting cultural heritage as an integral part of education for AI youth. Planning is currently underway for the Wind River UNITY Photovoice co-researchers to provide presentations on healthy relationships in community schools in a peer education format that will provide education and support for younger AI children with a focus on strengthening and supporting the wisdom of AI cultural heritage.

**DISCUSSION**

This project highlights several important themes to consider for working with AI populations in HIV, STI and unintended pregnancy prevention and education. The lessons that we learned from this project are:

- **Invite the voices of youth**: This project highlights the vital importance of integrating the wisdom and strength of young people in setting directions for and implementing HIV, STI, and unintended pregnancy prevention programs among rural frontier AI communities. Inviting the leadership of young people brought a fresh, optimistic, healing perspective to the work. Providing a venue for the young people to share their views in a safe environment allowed for powerful messages to emerge.

- **Provide opportunities for nonverbal creative expression**: Photovoice fits well within AI cultures, as storytelling is a powerful key to cultural survival. The intergenerational stories that are passed on “are not fairy tales or entertaining stories for children—they are lived values that form the basis for Indigenous governance and regeneration. Experiential knowledge and living histories…comprise part of the core teachings that Indigenous families transmit to future generations” (Corntassel, Chaw-win-is, & T’lakwadzi, 2009, p. 137). The visual stories that are told through Photovoice are also a strong fit for facilitating communication among AI youth, caregivers, and elders, as they allow stories to be told without verbally speaking the message. For disenfranchised populations whose voices and language have historically been oppressed and denied, Photovoice can send a powerful visual message.

- **Integrate cultural heritage into the fabric of the work**: Reactions to the Wind River UNITY Photovoice stories tend to be powerful and emotional. An unintended emergent theme of the Wind River UNITY project is that of hope for healing from historical trauma and grief. Community members shared that the display brings them hope and a sense of pride that their ancestors, cultural values, and wisdom about healthy relationships (e.g., respect, peace and harmony) live on in their young people. This finding emphasizes how
reducing health disparities may be possible through culturally responsive empowerment and a focus on positive social determinants of health (e.g., cultural heritage) in health promotion and prevention activities. A key pathway to healing, and, potentially, improved health and educational outcomes is the message that the wisdom and strength of AI cultures lives on in the young people. The co-researchers believe this is an important message to maintain within themselves for empowerment and to share with others with whom they have relationships, as well as with community members, educators, and policy makers, through all layers of the socioecological model.

**Continue to learn.** Future research is needed to determine the efficacy of prevention and education efforts that are based on Photovoice projects, especially in the realms of reducing rates of HIV, STIs, and unintended pregnancy, as well as disparities in health and educational outcomes of marginalized populations. Likewise, more research is needed to learn about the effectiveness of Photovoice projects in bringing attention to social determinants of health, countering master narratives, increasing cultural competency in education and prevention of HIV/STIs and unintended pregnancy, and, in turn, reducing health disparities. Finally, research is needed to examine the benefits of Photovoice projects with additional populations and additional social determinants of health.

**Figure 2**

Wind River UNITY Photovoice for Healthy Relationships - Example 1

POWERFUL PEACE

Grand entry on a Friday night. 
It only means one thing.

Pow-wow season is here.

The smell of frybread and smoked buckskin in the air.

Dancers from different tribes come together to celebrate

a time of welcoming.

JUST IMAGINE

I want to go back, go back in time
To see the days that are no longer here
To see the days that are just pictures in my mind
To the pictures that always bring tears
I just want to re-live the camping and hunting days
The days of fearless and worry free
The days of when we were proud to be Native Americans
Not proud to be a gangster wanna-be
haha

FEELING FREEDOM

There is a time – any second or moment or day - when everyone has that kid inside of them. Just want to be free from all! The mess or the hurt. But there is a toy, Frybread, loving for forgetting all the things you were mad about. You know you can't hide it, that kid inside of you. Let the happiness come out. Be yourself again. Love the feeling. You don't have to be grown up that moment /day / second. Love your Self.
Figure 3
Wind River Unity Photovoice for Healthy Relationships - Example 2

**THE SYMBOL OF MY PEOPLE**

Traveling throughout the United States, I have had the honor of representing my tribe at different events.

No matter where I go, I always take something that reminds me to be proud of my identity and where I come from.

Whenever I go to a pow-wow or cultural event, it feels good knowing that my tribe’s legacy is being continued.

**HARMONY**

One of my heroes is my sister because she knows how to walk in two worlds with honor.

When she went off to school, she was able to maintain her culture while pursuing her educational goals.

**A POWER HIGHER THAN YOU**

Healthy Relationships will remain stronger when you have a solid spiritual base. Two people working together toward a positive direction. I see Creator all around us.

Figure 4
Wind River Unity Photovoice for Healthy Relationships - Example 3

**CHIEF WASHAKIE**

Washakie, Chief of the Eastern Shoshone Tribe, Lead his people to victory when he won the Warm Valley from the United States government. They told him that he and his people could choose wherever they wanted to live, and Washakie chose the Warm Valley.

Now, the Eastern Shoshone people share the Wind River Reservation with the Northern Arapaho Tribe.

If Washakie were alive today, he would have wanted his people to have good relations with their neighbors, the Arapaho.

**CHIEF WASHAKIE AND HIS SUB-CHIEFS**

Healthy Relationships include people following the wisdom and advice of elders and leaders. Our Chiefs are looking down upon us every day.
REFERENCES


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TOOLS FOR *IINA* (LIFE): THE JOURNEY OF THE *IINA* CURRICULUM TO THE GLITTERING WORLD

Vivian Arviso, MA, Dorinda Welle, PhD, GloJean Todacheene, MA, Janet Slowman Chee, PhD, Gloria Hale-Showalter, MA Ed, Shirley Waterhouse, and Susie John, MD, MPH

**Abstract:** This article presents the participatory curriculum development process and foundational Diné (Navajo) concepts that inform the *Iina* (Life) curriculum, designed for grades 4-6 by a group of Diné educators to strengthen resiliency by addressing children’s health, relationships, identity, and sense of the future, utilizing core concepts from Diné oral tradition. Rather than develop a curriculum relying only on experts, and rather than utilize existing American Indian curricula addressing specific risk behaviors or diseases, we facilitated a dialogue with a range of community members to identify core concepts from Diné oral tradition that could provide young people with a perspective on life and its conflicts and challenges, tools for building respectful and supportive relationships, and stories to inform their sense of themselves, the Diné People, and their shared future. The Ways of Life: Iina Project will make the curriculum available in 2012. We offer reflections for other tribes interested in adopting a similar curriculum development process.

**INTRODUCTION**

This article presents the community-based development process and foundational concepts of the Ways of Life: *Iina* curriculum, designed for grades 4-6 by a group of Diné (Navajo) educators to address children’s health, relationships, identity, and sense of the future, utilizing core concepts from Diné oral tradition. The curriculum is currently in final development, to be made available in 2012. Here we describe our unique, multiple strategies for developing a Diné-based curriculum and a facilitative policy environment that, together, could transform the education of Diné young people. We are already receiving extensive interest about the curriculum, as well as requests for
advance guidance on how to modify the Diné-specific curriculum for other tribes. In this article, we reflect on this curriculum development process, and discuss how other American Indian (AI) communities could adopt a similar process.

The education literature acknowledges that curriculum development is best informed through a participatory process that elicits the community’s available knowledge and makes that knowledge relevant to the future of the community (Taylor, 2004; Wiles, 2008). Briefly in the late 1970s, and again in the 1990s, there was widespread interest in community-based AI curriculum development (Coburn, 1976; Yazzie, 1999). As an archive of materials became available during these periods of ample federal funding, educators more commonly sought to modify rather than develop new curricula.

More recently, federal public health funding has stimulated curriculum development for disease prevention and health promotion. Health curricula which focus on the prevention of one specific disease or risk behavior can leave classroom teachers with tough choices. Educators with little, if any, freedom to augment the standardized and mandated content of instruction are faced with selecting from a number of relevant prevention curricula related to diabetes, HIV, drug and alcohol abuse, and suicide in AI communities where all or most of these public health concerns are acute (LeMaster & Connell, 1994). AI youth health issues can rarely be addressed community by community, language by language, tradition by tradition, and instead are addressed through generalized “AI” curricula that, while intending to speak to all AI youth, speak directly to very few of them (Arviso et al., 2010).

Tribal government plays a crucial role in preventing risk behaviors and promoting young people’s health. Tribal policy can be understood as each nation’s curriculum for self-determination, enacted in sometimes tense relation to state and federal policies. In this political arena, the health and welfare of AI youth are literally at stake. For example, a decade of research with First Nations tribes in Canada suggests that those tribal governments which invest in youth education, youth employment, language learning, and identity development evidence dramatically lower rates of youth suicide compared to Nations which do not make these investments (Chandler, Lalonde, Sokol, & Hallett, 2003). In addition, those First Nations governments which promoted a positive vision of the tribe’s future, rather than emphasizing the tragedies and atrocities of the past, evidence lower youth suicide rates (Chandler et al., 2003). These findings suggest that curriculum alone, no matter how well designed, cannot achieve the goal of improved health, unless combined with policy measures and commitments by tribal government to effect a community environment that supports positive health behaviors.
THE CURRENT STATE OF DINÉ CURRICULUM AND RESOURCES

Passage of the 1972 Indian Education Act and the 1975 Indian Self-Determination and Education Assistance Act institutionalized self-determination in Indian education (Reyhner & Eder, 2004). Passage of the Native American Languages Act in 1990, and the 1991 release of the U.S. Secretary of Education’s report from the Indian Nations at Risk Task Force, spurred a second wave of interest in Indian education and language learning (Reyhner, 2006), but with subsequent funding cuts, the implementation of self-determination in Indian education remains a challenge.

Although the Navajo Nation has an education code and Diné standards for language and culture, there is no one existing curriculum that is mandated for schools. Over the past four decades, federal and tribal funding has supported significant curriculum endeavors with varying levels of implementation. As a result, a massive amount of lower elementary-level bilingual and cultural materials have been produced, ranging from picture books, topical readers, and subject materials to posters, videos, and DVD supplemental materials.

Diné language and culture teachers are known to modify and create materials based on their own differing personal perspectives about Diné tradition. In many classrooms, handouts that diagram basic Diné concepts such as The Four Directions, the Basket, or the Cornstalk have become the primary materials for language and culture lessons. Understandably, teachers have found it difficult to relate this system of symbols, locations, objects, colors, and domains of life into practical strategies for young people’s everyday lives. As a result, instruction often “preserves” knowledge of a symbolic system, while reducing its significance and application as a living, dynamic knowledge base. This preservation effort, unfortunately, has lent itself to public criticism of Diné-centered curriculum.

FORMING THE VISION FOR THE IINA CURRICULUM

Curriculum can be understood as a “plan for learning consisting of two major dimensions: vision and structure” (Wiles & Bondi, 1984). Vision for a curriculum needs to be grounded in an understanding of the social conditions in which learning takes place and which education can and should aim to transform. A curriculum working group can serve to structure a balanced dialogue between education practitioners and community members who bring their various concerns to the process. Wiles (2008) describes the essential function of a working group:

The leader is helping the community contemplate what education is supposed to do. A purely maintenance role, refining what we have always done, or just meeting state standards, falls far short of understanding the nature of real curriculum work. Through sorting, prioritizing, analyzing, and deciding, a common reality begins to emerge. (p. 31)
With this idea in mind, the first step in *Iina* curriculum development involved forming a working group of seasoned Diné educators with extensive, successful experience working with Diné youth within the Navajo Nation. The *Iina* working group consisted of the following members, all Diné women whose careers have spanned a number of roles in and beyond that of educator.

- Vivian Arviso, MA, Director of Ways of Life: *Iina*; educational consultant, with 50 years experience in Indian education. Former Executive Director of Navajo Nation Division of Education. Honorary Doctorate, Sinte Gleska University. Member of Tohatchi Chapter.

- Shirley Waterhouse, HIV Health Educator, Navajo Nation HIV Prevention Program, Tuba City, Arizona. Established funding for HIV services on the Navajo Nation and helped found the Navajo Nation HIV Prevention Program. Member of Tuba City Chapter.

- Susie A. John, MD, MPH, Medical Officer, Teen Life Center, Shiprock, New Mexico. Has over 20 years in Indian Health Service, including position as CEO for Tuba City Indian Medical Center and Crownpoint Director of Community and Preventive Health Services. Member of Beclabito Chapter.

- Gloria Hale-Showalter, MA, Ed. Education Program Administrator, Chinle Agency, Bureau of Indian Education. Has 33 years of experience in education as a public school superintendent, federal programs director, Indian education director, school principal, and classroom teacher on the Navajo Nation in Arizona and New Mexico. 2008 New Mexico Indian Educator of the Year. Member of Oak Springs Chapter.

- GloJean B. Todacheene, MA. Navajo Nation Councilwoman (2007-2011), Shiprock Chapter, Shiprock, NM. Re-elected member of San Juan County Commissioners. A former principal for 11 years, with 14 years as a high school educator teaching life skills to Diné students. 1994 recipient of the Milken Family Foundation Award for Excellence in Education. Member of Shiprock Chapter.

- Janet Slowman-Chee, PhD. Former Director of Special Education, Central Consolidated School District, Shiprock, New Mexico. Has 29 years of experience as former school superintendent, school psychologist, college faculty member, and program administrator on the Navajo Nation in Arizona and New Mexico. Member of Tecenospos Chapter.

Working group members represent a diversity of educational journeys, life experiences, perspectives on Diné education, and were variously raised in traditional and/or Christian families. Members brought to the project a collective concern about Diné youth engaging in risk behaviors and being subject to negative forces in the community and in their families. Throughout their professional careers, working group members have been aware of challenges facing Diné society, and of the external influences of modern America on youth. They brought a deep concern about cultural loss of oral traditions—especially in terms of Diné language, guiding concepts, respect,
and relationships—and of families’ and schools’ ability to teach these to the next generation. These were not just abstract concerns, but real concerns about an appalling way of life that is widespread in Diné society.

With this shared experience, the working group discussed the many reports in the *Navajo Times* and other news sources which detailed dramatic increases in family violence. Comparing their various observations across multiple generations of Diné youth and multiple decades of Diné education strategies, the working group members also noted that previous generations of Diné youth were strongly impacted by alcohol abuse, and that recent generations were additionally impacted by illicit drugs like methamphetamine, crack, and heroin.

The next stage was to consider the behavioral data on youth in New Mexico. According to the national Youth Risk and Resiliency Survey (Centers for Disease Control and Prevention [CDC], 2009), high school youth in New Mexico were twice as likely as the national average to have ever used marijuana, any form of cocaine, ecstasy, and heroin, and were twice as likely to have injected an illegal drug. New Mexico youth evidenced higher than the national rates in risk behaviors related to violence, suicide, and alcohol use, as the findings in Table 1 show:

<table>
<thead>
<tr>
<th>Risk Behavior</th>
<th>New Mexico Rate</th>
<th>National Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carry a weapon on school property</td>
<td>8.1%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Not go to school because of feeling unsafe</td>
<td>7.2%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Be in a physical fight on school property</td>
<td>15.0%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Feel sad or hopeless</td>
<td>29.7%</td>
<td>26.1%</td>
</tr>
<tr>
<td>Seriously consider attempting suicide</td>
<td>13.1%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Attempted suicide in past 12 months</td>
<td>9.7%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Carried a weapon in past 30 days</td>
<td>27.4%</td>
<td>17.5%</td>
</tr>
<tr>
<td>Carried a gun in past 30 days</td>
<td>10.8%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Had at least one drink of alcohol on school property in past 30 days</td>
<td>8.0%</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

* CDC, 2009
To understand risk behaviors of Diné youth, the group examined the New Mexico Youth Risk and Resiliency Survey (YRRS) report (New Mexico Department of Health, 2007) and compared rates of risk behaviors in those counties with predominantly Diné youth (San Juan, McKinley, and Cibola Counties) to rates statewide. The 2007 YRRS demonstrated health disparities for Diné youth, who evidenced higher rates of risk behaviors and vulnerability than youth statewide in the following areas:

<table>
<thead>
<tr>
<th>Risk Behavior</th>
<th>San Juan County Rate</th>
<th>McKinley County Rate</th>
<th>Cibola County Rate</th>
<th>New Mexico Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempted suicide (last 12 months)</td>
<td>16.9%</td>
<td>16.3%</td>
<td>18.6%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Skipped school because felt unsafe (last 12 months)</td>
<td>12.0%</td>
<td>15.1%</td>
<td>8.1%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Physical fight at school (last 12 months)</td>
<td>41.4%</td>
<td>32.6%</td>
<td>35.6%</td>
<td>37.1%</td>
</tr>
<tr>
<td>Sexual intercourse before age 13</td>
<td>8.6%</td>
<td>6.2%</td>
<td>14.9%</td>
<td>7.7%</td>
</tr>
<tr>
<td>Ever forced to have sexual intercourse</td>
<td>11.3%</td>
<td>8.5%</td>
<td>5.1%</td>
<td>9.2%</td>
</tr>
<tr>
<td>Persistent feelings of sadness and hopelessness (last 12 months)</td>
<td>38.7%</td>
<td>30.4%</td>
<td>31.5%</td>
<td>30.8%</td>
</tr>
<tr>
<td>Has been offered, sold, or given drugs on school property (last 12 months)</td>
<td>33.4%</td>
<td>32.7%</td>
<td>32.3%</td>
<td>31.3%</td>
</tr>
<tr>
<td>Ever had sexual intercourse</td>
<td>49.4%</td>
<td>40.0%</td>
<td>62.6%</td>
<td>45.7%</td>
</tr>
</tbody>
</table>

* New Mexico Department of Health, 2007

These data only confirmed that Diné youth needed a curriculum to build the foundations for resiliency at home and in school.

**CONSULTING WITH THE HATALTHI**

The Iina working group consulted throughout the development process with the officers of the Diné Hatalthi Association, the longtime reservation-wide organization of Diné ceremonial practitioners. At the community level, the Hatalthi regularly witness the erosion of Navajo language and traditional knowledge. They described a resulting loss of confidence among youth and adults in
understanding the world from a traditional Diné perspective. The Hatalthi expressed concern at the difficulties that contemporary parents and grandparents have in transmitting traditional knowledge to their children.

Community members and families depend on the Hatalthi as the intellectual repositories for the oral tradition of the Diné people. Individuals and families seek out Hatalthi for intervention and guidance in a number of aspects of everyday life: health, wellness, family relationships, and material concerns (e.g., unemployment, livelihood). The Hatalthi expressed frustration that family members often lack knowledge of how to assist in tasks related to ceremonies. To their expert perspectives, such knowledge is obvious, but it is not always easily available to untrained individuals. They were frank and open about their dismay that young people “have no ears” (i.e., are unable to listen and learn) and lack parental guidance. Thus, the Hatalthi struggle to stave the erosion of traditional knowledge and to find effective ways to bolster the Diné public with a basic foundation for understanding, let alone applying, Diné guiding concepts.

Frequently invited to be guest speakers in Diné language and culture classrooms, the Hatalthi described their own challenges to develop student interest in and knowledge of the Diné oral tradition. They characterized their own teaching experiences in schools as sometimes frustrating, other times successful. Although they experienced warm welcomes at the classroom level, they sometimes were met with lukewarm acceptance by school administrators who were ambivalent about the teaching of Diné language and culture. Many expected the Hatalthi to utilize a more “traditional” teaching approach rather than their own innovative methods of engaging students. During meetings with the Hatalthi, working group members learned to differentiate between what the Hatalthi called “esoteric knowledge” (i.e., knowledge related to ceremonial practices) and traditional knowledge relevant for living a long and happy life. A profound standard for life, known as Saah Naaghai Bikeh Hozho, emerged as an effective framework for the curriculum. A Diné College instructor explained:

The whole idea is that there is an order to nature, an order in how things interact. The sky—the sun is warm, there is rain, wind and air, life comes from that. These are things that Navajo youth can use in their own lives (Madar, 2011).

The Hatalthi challenged the Iina working group to utilize Diné concepts and relate them to everyday life. Heated debates followed on how to interpret and apply Diné concepts. We discussed whether the four sacred mountains coincide with the standard North/South/East/West grid, we split into different camps on the question of whether all Diné are “circular” versus “linear” thinkers, and we argued about how to apply the Diné system of valuing. In these collegial debates, a traditional framework was applied to assign value to contemporary goods, including the consumer goods that
many young Diné value. Some cited the merits of characterizing a coffee maker or an iPod as “hard goods” (goods with enduring value), while others viewed these as “soft goods” (goods that would lose value over time).

While we marveled at the range of knowledge shared through the Hatalthis’ PowerPoint slides and hands-on lessons for the classroom, we were most inspired by their storytelling. Effortlessly, the Hatalthi moved from telling stories about The Four Worlds to talking about teen pregnancy, bullying, and family conflict. In their storytelling, the distinction between “traditional” and “modern” knowledge and everyday experiences started to blur, and we began to identify themes that could inform an accessible, relevant curriculum. It became clear that storytelling could be the essential vehicle for conveying core concepts and relevant knowledge.

Once the Iina working group received the Hatalthis’ support, we were charged with the responsibility to develop an essential product. We proceeded to invite state and tribal service providers, educators, community organizations, and federal agency officials to the first curriculum conference to identify issues facing Diné youth and their families. Participants stated that never before in their careers had a diverse group like this been assembled to talk, share observations, and identify the needs of young people. Several Hatalthi attended, with an interest in bridging traditional and social service-oriented approaches to supporting Diné youth. Everyone in attendance desired to find a viable way to address the crisis in Diné children’s social development and well-being. Acknowledging the many obstacles faced by Diné children, participants emphasized the need to utilize oral tradition to guide Diné youth towards a positive future.

HOSTING CURRICULUM CONFERENCES

In 2009, a grant from the Ford Foundation supported two related efforts: 1) the development of a Diné curriculum using a process of community involvement to inform curriculum content, and 2) raising awareness of Diné youth health and rights, including young people’s right to access education and services and to learn about core Diné principles to guide everyday life. This curriculum project was not designed as a formal research project. Rather, we organized the process through the lens of Diné oral tradition: facilitating dialogue through a process of listening and reflecting, highlighting the perspectives of elders, and building a shared set of knowledge over time.

Community participation in curriculum development has numerous advantages that can translate into effective learning in the classroom, as identified by Taylor (2004):

- Stakeholders in education who might normally be marginalized gain the right to take part in decision-making about teaching and learning;
Through dialogue, individuals are able to build their own knowledge and share their knowledge and experience with others;

- Different stakeholders hold different values, attitudes and beliefs; these may be better understood and taken into consideration through an ongoing, open dialogue;
- At the same time, those with different forms and sources of expertise may still make a contribution where knowledge and skill gaps exist, and strategies may be developed to address such gaps.

These principles for participation reflected the shared values and vision of the Iina working group.

Over a two-year period, the Iina working group organized a series of curriculum conferences (Bude, 2000) to bring together small and large groups of diverse community, public health, service provider, education, and government stakeholders to consult on their perspectives about Diné youth risk behaviors. AI legal experts were consulted to understand how tribal traditional code informs standards for individual conduct and, specifically, the conduct of adults in relation to children and young people. Through these conferences and consultations, shared perspectives emerged on core Diné concepts that could structure a curriculum.

Significantly, these various stakeholders and experts emphasized that holistic philosophy and principles inform Diné oral tradition and traditional code. Based on this feedback, the working group decided not to design a curriculum to prevent one particular disease or particular risk behavior, but instead to focus on strengthening Diné young people’s understanding of Iina, or Life, with the goal of teaching core Diné concepts that could guide them in those ways of life that have long supported the survival and development of the Diné people.

One of the most important aspects of the curriculum conferences was the way that community members, educators, and parents shifted from “defending” their particular viewpoints on oral tradition to engaging in a dialogue about the meaning of traditional knowledge and possible ways to apply and utilize it as a compass for Diné children, young people, families, and even tribal government to guide Diné survival and development. For instance, stakeholders held different views on the clan system, oral tradition, the meaning of core concepts, and even traditional Diné behavior or identity. The curriculum conferences promoted an ethic of equality and tolerance of plural perspectives and interpretations, all in the context of a shared concern for the well-being and future of Diné children and young people.

In this way, community members began to treat Diné oral traditional knowledge not just as something to be “preserved” for the sake of the past, but as something living and relevant to their lives now. The Iina working group, along with the curriculum community, began to see Diné oral tradition and core concepts as the essential intervention in restoring balance and strengthening the
health and well-being of Diné youth. (For a detailed description of this process at a curriculum conference with Diné educators, see Arviso et. al. [2010]). A clear need emerged for a curriculum approach to strengthening youth resiliency that would incorporate Diné language learning and identity development, as well as a narrative about the positive possibilities for a collective Diné future.

Conference participants also considered the timing of puberty and initiation of youth risk behaviors. There was broad consensus that high school is too late to establish social foundations of Diné identity and behavior. Shared observations suggested that puberty onset among Diné girls is occurring at younger ages—typically at 10 years of age, and sometimes at 9. Targeting the curriculum to junior high students posed a similar problem, because grades 7 and 8 are when many common risk behaviors are initiated, and a growing level of unintended or coerced pregnancy among young girls is observed. Thus, it was decided that the Tools for Iina (Life) curriculum would target grades 4-6 in order to strengthen better decision-making skills for life, creating the potential to impact prevention of problem behaviors.

The curriculum conferences inspired several additional efforts launched in partnership with Diné community-based organizations. The Miss Navajo Council, Inc. integrated into its White Shell Woman workshops traditional teachings for Diné girls about relationships, health, and leadership development. Interestingly, as fathers and other male relatives saw what was available for girls, community interest grew in addressing boys’ educational and social development needs. “The Hero Twins” event for Diné boys was organized to teach about the key male figures in early Diné life, the role of men in Diné society, and identity development for young Diné men. As one young participant commented, “I had no idea there was such a cool thing as Diné math!” These were key additional accomplishments of the curriculum development process. Community members and leaders rallied around the need to support both boys and girls in strengthening their Diné identity, health, and sense of the future. It is anticipated that the Miss Navajo Council and the Iina working group will provide these workshops on an annual basis.

**DINÉ IDENTITY EDUCATION IN A DIVERSE COMMUNITY**

Throughout 150 years of missionary efforts, boarding schools, mass media, urban American influences, and the resulting Diné culture loss, Christianity has exerted a profound influence on the Diné community and its families, schools, and values. While some Christian Diné have found ways to integrate both Christian and Diné traditional beliefs and values, others outright reject AI symbols and traditional knowledge, forbidding their children to learn the Diné language or read materials related to Diné oral tradition.
Aware of the potential for clashes between Christian and traditionalist perspectives, the Iina working group sought a common foundation on the continuum between those who consider the oral tradition as the source of Diné identity and those who reject the oral tradition and yet identify themselves as Diné. Curriculum conference and working group discussions came back again and again to themes of “identity,” “mutual respect,” and “relationships” as the missing components and common ground in the social development of Diné children.

**USING DINÉ ORAL TRADITION TO INFORM CURRICULUM**

The Diné oral traditions detail the struggles of early Diné to survive in the different worlds of their collective journey. The early Diné had to learn how to co-exist with diverse others, including Insect People, and overcome crises brought on by the impulsive behavior of Coyote and a host of other challengers. As the early Diné journeyed from one world to the next, they also faced new and unfamiliar environments where they had to develop survival skills, deepen their ability to cooperate with each other, and move on when the environment became too hostile. By the time the Diné finally emerged into the current world, the Glittering World, they were free to develop ways of living that celebrated beauty, sustained balance, and instilled a sense of harmony with all beings in their environment.

The curriculum utilizes the Diné story of “The First Worlds” as an analogy for real-life transitions into different environments and the challenges and hardships presented in each. The extended story of the Four Worlds helps Diné students understand that their own maturing is and will be structured through conflicts which can be met with thoughtful behavior and resolved in relationship with others. The concept of early Diné people journeying from one world to the next helps Diné students understand the challenges of moving between the different worlds of home and school, their peer groups and their families. The stories of conflicts between First Man and First Woman and others in their environment provide opportunities to reflect on how children can better relate to each other, their families, their teachers, and their immediate environments. The concept of “emerging” into this current world also encourages a respect for Diné children’s own inner world of thoughts and emotions, and teaches skills for children to communicate from their personal perspectives in ways that help them relate to adults and peers.

The theme of life as a journey is further reinforced through stories about the early Diné journey from the West to their current homeland in Diné Bikeyah. Stories of Changing Woman detail how the Diné people were revitalized after a period of terrible crisis. The oral tradition further affirms Diné life as a journey through stages of human development that are clearly delineated, as marked by celebrations or traditional practices. Corresponding to the four directions, each person
moves from infancy to adolescence to adulthood to old age. Oral stories of the four original clans detail how each Diné child belongs to a greater whole, and is related to many others. Taken together, these resources from the Diné oral tradition provide a foundation for understanding and strengthening Diné identity and relationships, and inspiring reflection on and practice of conflict resolution.

ANCHORING YOUTH SOCIAL DEVELOPMENT THROUGH DINÉ CONCEPTS OF DUALITY AND RESPECT

One of the key philosophical issues that arose in early discussions with the Hatalthi was the meaning of “duality” in Diné oral history. The Hatalthi conveyed over and again that tolerance is rooted in the concept of duality: that each person’s body is a combination of male (left side) and female (right side) characteristics and capabilities. Given this duality, Diné society demands tolerance in all relationships, including respect for diverse gender expression.

The curriculum teaches young people to understand and appreciate duality in themselves, their environment, and everyday life. The Hatalthi also emphasized that First Man and First Woman and the Diné people once depended for their survival upon Third and Fourth gender persons during the separation of the sexes. (Third and Fourth gender persons include two-spirit, gay, lesbian, bisexual, and transgender people.) Without the presence of Third and Fourth gender people, the Diné could not have survived as a people and become a nation, and the oral traditions convey a very strong appreciation for people of all genders. In modern families, Third and Fourth gender people are often caregivers; they also serve in tribal government, the military, the workforce and many other capacities. To highlight the contemporary relevance of Third and Fourth gender people, the Hatalthi, service providers, and educators all expressed concern about bullying in school, especially bullying targeted against children with different gender expression. Bullying is addressed throughout the curriculum via the core concepts of equality and belonging, respect and tolerance, in a context of duality.

In addition to concerns about the loss of oral tradition, the Diné public has developed a growing awareness of prevalent risk behaviors, with sexual risk being the most sensationalized. Given the strong traditional and Christian prohibitions against talking about sex, and reluctance by many Diné adults to discuss sexual behavior, how could the Iina working group address sexual risk behaviors? We started by examining Diné coming of age as a key moment in a young person’s traditional education. Diné tradition includes a Kinaaldaa celebration honoring a young woman’s entry into adulthood, and emphasizes a woman’s role as a maternal guardian and leader in a matriarchal and matrilineal society. Diné boys’ coming of age centers around the sweat lodge, which was an entry point into traditional warrior training and responsibilities in the family and clan. In the curriculum, health lessons integrate explanations of gender roles and societal expectations for adulthood.
THE TOOLS FOR *IINA* (LIFE) CURRICULUM

Traditional Diné education took place through ceremony and storytelling conducted in family settings rather than the institutional setting of schools. When authority over Diné education was wrested from the family by the Church and boarding schools, Diné children lost their supportive and memorable settings for learning and development. The Tools for *Iina* (Life) curriculum acknowledges that loss through a narrative designed around the real-life situations of two Diné children who themselves have been urban dwellers far from Diné Bikeyah. Their mother and father have separated and their father was raising them in California. He brings them back to Diné Bikeyah where his mother, Nali, takes them in each day after school. This story framework reflects the fact that many children residing on Diné Bikeyah share with their urban Diné peers a confusion over identity and gaps in cultural knowledge. Diné youth with a traditional upbringing who experience these lessons will be able to identify with Nali’s perspective and her pride in Diné heritage. The curriculum aims to strengthen the sense of belonging of all Diné children to a diverse Diné community.

The curriculum has four sections: self-identity, relationships, health, and the future. Each section is comprised of sequential lessons with objectives that match Arizona, New Mexico, and Navajo Nation curriculum standards in social sciences, health, culture, and language. Continuity across lessons is achieved through Nali’s after-school stories which reflect oral traditions for socializing children into Diné adulthood. The stories teach tolerance and respect for one another through personal, family, school, and community relationships. For example, each lesson opens with instructions for the 4th-6th graders to sit in a respectful fashion, in order to help young people become responsible for their bodies and to convey dignity and modesty. The lessons employ instructional strategies to reinforce the core concepts, and include activities ranging from art and theater projects to homework activities that emphasize language learning and teach everyone the personalization of clan relationships. In addition, instructional materials for parents follow each lesson, framing a learning conversation between the parent/caregiver and the child.

The objective of this curriculum is not to try to recreate centuries-old or pre-contact socialization settings. Rather, the lessons aim to convey the core concepts of Diné personhood in a contemporary context. The Nali narrative features a Diné boy, Tyler, and a Diné girl, Brooke, with equally strong personalities, voices, and perspectives. The lessons focusing on the two children and their Nali have two goals: to convey a memorable setting which allows students to experience a connection with their relatives, the land, nature, animals, and the rich journey towards adulthood; and to model supportive relationships which enable students to identify with the characters and aspire to relate to their own peers and their elders. By strengthening young people’s sense of belonging, the curriculum aims to build the resiliency of young people who, like Brooke and Tyler, might initially feel disconnected in their own home and school settings.
The Nali narrative uses traditional concepts to guide young people in living a good life. However, unlike stories that are only told in ceremonies held at specific times of the year, the curriculum draws on stories available year round and, most importantly, outside of ceremonial context. These stories are embedded in Nali’s after-school conversations with her two grandchildren. In this way, the Nali stories are compelling and entertaining just as oral tradition was to previous generations.

Nali lets the concepts emerge as she listens to her grandchildren describing their day-to-day experiences at school and in the community, and as they tell Nali about their worries as well as their future aspirations. Fourth-grader Brooke wants to be a psychologist, while her brother Tyler wants to be an environmentalist. Both feel a responsibility to save Diné land, people, and animals for future generations. Nali listens, she feeds them after-school snacks, and she desires the best for them. She reflects out loud about their concerns, and offers Diné concepts to shed light on their conflicts and questions, providing guidance and insight into self-development, relationships, and the Diné people. She expects both her grandson and her granddaughter to utilize Diné ways to become strong individuals and overcome life’s challenges. She takes pride in their dreams to protect the land and to support health in the community. She (and other adults in the narrative) corrects them when their own interactions fall short of mutual respect. Adults encourage each of the children to pursue their educations and their dreams for the benefit of the community. The Nali narrative acts to reinforce a sense of belonging and a desire to contribute to the future of the Navajo Nation.

**CONCLUSION**

The experience of this undertaking reflects only one distinct tribal context from among over 500 federally recognized tribes. Those who share our goals and wish to travel the same path with their community can and should do so. Curriculum leaders should understand that participatory curriculum development is not a matter of replacing words from one language with words from another language, or concepts from one tradition with concepts from another tradition. Curriculum conferences can and will demand a long-term commitment to true curriculum reform. Even when a curriculum succeeds, has a long life in school systems, and educates large numbers of children, by itself it cannot transform the conditions that deprive young people of healthy social development. Tribal policy is the “curriculum” for the development of one’s society, and has the potential to strengthen conditions for children’s learning and success (see Warner, 1999). In that regard, we also initiated a proclamation to support children’s rights to a healthy future, which is currently being considered by the President of the Navajo Nation.
Curriculum leaders need to anticipate and welcome unexpected community needs that might arise during the curriculum development process. For example, dialogue about the *Iina* curriculum has drawn outspoken male and female supporters and enabled parents, service providers, politicians, and community leaders to call for a Diné sexuality education initiative to address risk behaviors in older adolescents. As one highly respected leader in the child abuse prevention field reminded community members and educators, “It’s true that as Diné we were taught that what happens in the home is sacred and should not be discussed. However, much of what is happening in today’s homes is not sacred, and we must not only talk about it, we must change it.” In this way, the curriculum development process enabled community members to test and voice their own views, and to define part of the solution as “talking more openly” with children and youth about everyday realities, including sexual behavior and sexual abuse of children.

In order for the *Tools for Iina* (Life) curriculum to make the greatest impact in Diné society, the *Iina* working group is consulting with Navajo Nation representatives to ensure the progress of the curriculum and identify ways to support its implementation. Innovative leaders in the Diné Department of Education, the Speaker of the Navajo Nation Council, and the President of the Navajo Nation have affirmed the need to improve the lives of young people through the use of Diné core concepts. Once the curriculum is in use in Diné schools, we hope to focus on strengthening broader public awareness of Diné concepts in relation to risk behaviors, with PSAs featuring Nali herself, and with youth voices featured in the *Navajo Times* and radio outlets. Having made our own journey through the “worlds” of Diné young people and having identified Diné core concepts to address the challenges they face, we look forward to supporting Diné young people as well as curriculum leaders from other tribes making their journey in this Glittering World.

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REFERENCES


**FOOTNOTE**

1 Spelling conforms to that used by the Diné *Hatalthi* Association.
Abstract: This article describes the objectives, theoretical bases, development process, and evaluation efforts to-date for the Circle of Life (COL) curricula, HIV/AIDS prevention interventions designed for American Indian and Alaska Native (AI/AN) youth. The curricula are based on Indigenous models of learning and behavior encompassing concepts of Western theories of health behavior change. The curricula underwent extensive national and community review. Subsequent advances include the development of a computer-based version of the intervention.

INTRODUCTION

A review of the interventions aimed at HIV prevention for youth reveals a growing list showing success in sexual risk reduction. These theory-based interventions have been showcased in several ways—among them, on the CDC Web site of evidence-based interventions (Centers for Disease Control and Prevention, 2011), in a Cochrane review (Underhill, Montgomery, & Operario, 2009), and in a review conducted out of the Department of Health and Human Services (DHHS) Office of Adolescent Health (Office of Adolescent Health, 2011). While these reviews have provided useful guidance for many youth-serving programs, absent from these lists is an intervention designed specifically for American Indian/Alaska Native (AI/AN) youth. Several factors contribute to this absence, including the challenges of generating sufficient scientific evidence to meet the standards required by such lists, the gaps created by inconsistent funding and shifting programmatic priorities, and the rapid change in technology and opportunities to use approaches to learning appropriate for AI/AN youth. In this brief article, we present the case of two curricula developed specifically for AI/AN youth: “Circle of Life: HIV/AIDS Curriculum for K-6” and “Circle of Life: HIV/AIDS and STD Prevention Curriculum for Middle School.” In the description that follows, we outline the challenges and successes of development, implementation, and dissemination of these AI/AN
youth-focused interventions. This history—coupled with strategic partnerships and escalating HIV prevention need in AI/AN communities—has propelled the two Circle of Life (COL) curricula forward, positioning them as meaningful and appropriate options for youth sexual risk prevention. We begin by describing the development of COL, including the objectives of the curricula and their theoretical bases. We next describe the evaluations of the COL curricula, recent developments with respect to COL, and the promise of upcoming research efforts.

COL DEVELOPMENT

The COL curricula were developed by ORBIS Associates, an AI-controlled organization engaged in education research, program development, and evaluation. In 1992, ORBIS received funding, originating from the Centers for Disease Control and Prevention-Division of Adolescent and School Health (CDC-DASH) to assess the extent to which there were any existing comprehensive HIV/AIDS curricula culturally appropriate for use in AI/AN communities. The extensive search revealed no such curricula. Consequently, in 1994 CDC-DASH began funding the Indian Health Service (IHS) to develop appropriate curricula, and the IHS in turn, contracted with ORBIS to proceed with the work. However, in 1997, funding cuts substantially undermined IHS infrastructure to support national HIV/AIDS prevention activities. Subsequently, funding was provided to ORBIS through the Bureau of Indian Affairs (BIA) to develop culturally appropriate HIV prevention interventions for AI/AN youth (DASH/CDC, 2002). CDC-DASH mandated that all curricula meet certain requirements, including the following.

- Solid integration of health with culture, not simply health curricula with a segment on culture.
- An emphasis on de-linking associations between HIV/AIDS and stereotypes (e.g., homosexuality or race). The message was to be “it is not who you are, but what you do” that puts one at risk of acquiring HIV/AIDS.
- Strong messages about caring for sick persons, including empathy and respect, while also noting the specialized care needed for those who have HIV/AIDS.
- Material and activities enhancing both knowledge and skills of youth, not just didactic content.

By 2002, two curricula had been completed by ORBIS: one for kindergarten through 6th grade (K-6) and the other for middle school youth. Unifying these two curricula is the medicine wheel. The Plains Indian medicine wheel is a powerful symbol of holistic philosophies and a teaching tool used in many AI/AN communities. In designing the curricula while also addressing CDC’s mandates, ORBIS adopted and adapted the medicine wheel as the foundation for developing
content to engage AI/AN youth specifically. Also, drawing from earlier research demonstrating the importance of experiential learning in HIV prevention (Schinke, Gordon, & Weston, 1990), ORBIS infused the curricula with various skills-building games, activities, and stories to promote avoidance of risky behaviors. Both curricula were designed as targeted health curricula; however, consistent with AI/AN philosophies, they also encompass far more than sexual risk prevention. Instead, they also promote the development of overall physical, emotional, mental, and spiritual wellness of students, consistent with the teachings of the medicine wheel and other similar AI cultural symbols.

The strong theoretical base of the COL curricula was closely intertwined with the development process and resulting organization and content. The curricula were also strengthened by an explicit structure of extensive and systematic review, development, and revision. We describe both of these components here.

**Theoretical underpinnings**

The development of the curricula drew on Western theories of behavior change, including Social Cognitive Theory, Theory of Reasoned Action, and the Theory of Planned Behavior as well as models advanced in research-based curricula used in other settings at the time (Andrews & Moore, 1987; Jemmott, Jemmott, & McCaffree, 1995). At their core, however, the curricula are based on AI-specific precepts, including the medicine wheel—a cultural symbol divided into four equal parts, encompassing spiritual, emotional, physical, and mental wellness as the four essential aspects of health and well-being (see Figure 1). Indeed, the medicine wheel itself embodies a cultural theory of learning based on centuries of community epistemologies that form the foundation for cognitive and behavioral instruction (LaFrance & Nichols, 2009). As developed within the curricula, all four parts of the medicine wheel touch each other, so that each influences the others; and strength to make healthy choices is derived from balance and harmony. All parts of the wheel work together to provide those cognitive guides to decision making. The idea of “volition” is introduced in the K-6 curriculum and greatly expanded upon in the middle school version. Volition, located at the center of the wheel, emphasizes personal empowerment to shape and maintain balance among the elements of the circle, providing the foundation for making good decisions and acting on them. The COL curricula thus provide a conceptual guide for Native youth, using familiar symbols that explicitly link behavior with knowledge, ways of thinking, and expectancies about acquired skills and ideas. The COL curricula also include both cognitive and affective learning with a heavy emphasis on skills training and practice. Symbols, stories, and ways of learning familiar to Native youth provide the foundation for classroom implementation.
The principles of the medicine wheel were interwoven with Western theory and concepts to create learning and behavioral action. The middle school curriculum, for example, drew heavily on Social Cognitive Theory (SCT; Bandura, 1994; 1997). SCT proposes three major classes of determinants and mediating mechanisms related to behavior change: knowledge structures, outcome expectancies, and efficacy expectancies. Knowledge structures represent “the rules and strategies of effective action (that) serve as cognitive guides for the construction of complex modes of behavior… Knowledge structures are translated into proficient action through transformational and generative operations” (p. 34; Bandura, 1997). As a key factor that regulates and establishes knowledge structures and skills, outcome expectancies are the envisioning of likely outcomes of prospective courses of action. Finally, efficacy expectancies influence the choice of activities and the motivational level, shaping aspirations and the outcomes expected for one’s efforts (Bandura, 1997). Table 1 (next page) maps selected segments of the COL middle school curriculum to SCT to illustrate the promise of the curriculum in influencing knowledge, expectancies (both efficacy and outcome), and ultimately behaviors related to sexual risk.
<table>
<thead>
<tr>
<th>Concept</th>
<th>Example Activity</th>
<th>Volition</th>
<th>Knowledge</th>
<th>Efficacy Expectancies</th>
<th>Outcome Expectancies</th>
<th>Behavior</th>
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<tbody>
<tr>
<td><strong>Module 1: Young people are the pioneers of new ways.</strong></td>
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<tr>
<td>1. Expect change and challenges</td>
<td>Audio: SuAnne's story</td>
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<td>x</td>
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<td>2. Learn to take responsibility for own actions</td>
<td>Worksheet: SuAnne's actions</td>
<td></td>
<td>x</td>
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<tr>
<td>3. Circle of Life - balance and strength</td>
<td>Brainstorming for the 4 parts of COL</td>
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<tr>
<td>4. Exercise own volition</td>
<td>COL personal journal</td>
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<td>x</td>
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</table>

**Module 2: Protect the balance of your Circle of Life.**

1. Essential HIV/STD facts  
   Jeopardy game  
   Factual framework for HIV/STDs  
   X

2. Statistics on HIV/STDs  
   Compare & contrast stats  
   X

**Module 3: Keep your personal Circle of Life strong.**

1. New intensified feelings - expecting them, dealing with them  
   What's normal? worksheet (self-assessment poll)  
   Groundwork for risky situation avoidance skills  
   X

2. Recognize risky situations  
   Audio—Stories from a Talking Circle  
   X

3. Identify risky behaviors associated with HIV/STDs  
   Health risk thermometer  
   X

**Module 4: Respect yourself.**

1. Decision-making  
   SODA: Stop, Options, Decide, Act  
   Development of students' skills for avoiding risky behaviors  
   X

2. Communication  
   Assertiveness role plays  
   X

3. Refusal  
   Refusal role plays  
   X

**Module 5: Celebrate the power of your Circle.**

1. Importance of good decisions, responsibilities for decisions  
   Listen to Lisa and Kebin—Stories from 2 HIV + AIs  
   Reinforcement of prior material  
   X

2. Rites of passage in adolescent lives  
   Help spread the word, not the disease (skits, media projects)  
   X

*Due to space limitations, only one activity per concept was selected for illustrative purposes.*
Structured review and development

ORBIS recognized from the beginning the importance of broad input and engagement from AI/AN and non-AI/AN educational and health professionals, as well as other community members. Clear forms of input, review, and revision were developed to ensure broad support, scientific accuracy, and cultural appropriateness for this highly sensitive and challenging topic.

- **Extensive External Input.** From initial conception and framework development through the draft and final revisions, both curricula were developed with comprehensive guidance and involvement from AI/AN communities, organizations, and institutions, as well as experts in a wide array of fields: teachers of AI/AN students; health practitioners; school administrators; cultural experts representing varied tribal perspectives and traditions; community health workers; community leaders; and national experts in health education, curriculum design, and evaluation. To this end, the COL Effectiveness Expert Group (CEEG) was formed as a working group providing ongoing input on initial conceptualization of the materials, as well as the drafting, revising, and pilot-testing of the curriculum itself.

- **Consistency with Standards and CDC Guidelines.** Material in both curricula was research-based and designed to reflect content and instructional standards/guidelines deemed effective and age-appropriate. Per CDC’s requirement, the K-6 curriculum was modeled around CDC’s Guidelines for Effective School Health Education. By the time the middle school curriculum was developed, CDC required that the material address the newly released National Health Education Standards for Grades 5-8 as well as CDC’s own Guidelines for Effective School Health Education to Prevent the Spread of AIDS. Additionally, CDC required that the COL curriculum be designed to be consistent with the content level of six national middle and high school HIV/AIDS curricula deemed effective by CDC.

- **Infusion of Cultural Elements.** The medicine wheel is a traditional symbol among, primarily, Plains tribes, and it serves as a centering symbol of the curricula. The COL developers chose to use the wording “Circle of Life” not only to reflect the epistemologies and teachings inherent in the medicine wheel but also to make this important curricular foundation less specific to one group of tribes and to reflect more broadly the similar circular symbols and holistic thinking employed traditionally by many tribes across North America. In addition, specific culture-based content permeates the material. Illustrations are Native-specific, all real personages in the materials are Native and are presented as role models, role-play scenarios are based on life in AI/AN communities,
and stories about the animal world are used as teaching tools (K-6 only). Culture-based instructional strategies were also incorporated into each module, as were widespread traditional values and expectations regarding an individual’s responsibilities for family and the community.

- **Cultural Adaptability.** Providing a culture-based curriculum applicable across the diversity of AI communities posed a unique challenge, in that there are over 560 federally recognized tribes in the United States, representing many different languages, cultures, geographic locations, and socioeconomic circumstances. Some communities are urban and others are rural. Some Native communities are located on reservations, but many are not. The extent to which communities have retained their languages and traditional cultures varies considerably. Thus, from the outset, ORBIS recognized the importance of building cultural adaptability options into the curricula. All COL teacher instructions and preparation materials provide guidance on adapting student materials or instructional approaches, if needed, to accommodate specific local cultural context. Suggestions about techniques for identifying adaptations, along with examples, were also included in all COL teacher training, and time was built into every teacher training session to encourage planning of specific cultural adaptations. These features offered educators and community members the opportunity to make COL culturally distinct and as relevant as possible to their own youth.

Both COL curricula were extensively pilot-tested prior to final revision and publication. In each case, the pilot-tests were conducted in Bureau of Indian Education (BIE) and tribal schools located in varying geographical and Native “culture areas.” The K-6 curriculum was pilot-tested in 18 schools, both rural and urban. Class sizes varied from 12 to 32, and both AI and non-AI teachers were selected as participants to ensure that the instructional content and teacher resource materials were equally useful irrespective of teacher backgrounds. The middle school curriculum was pilot-tested in five BIE and tribal schools reflecting five separate “culture areas.” Four schools were relatively rural, one was urban. Again, classes taught by both AI/AN and non-AI/AN teachers were included. Class size varied from 8 to 35; in three schools, students were predominantly from one tribe; in the other two schools, students came from a broad mix of tribes and culture areas. Of the 110 7th- and 8th-grade pilot-test students who received COL instruction, familiarity with their own culture ranged from being “very strong” to “only a little.”

For the pilot-testing of both curricula, multiple assessment instruments (both qualitative and quantitative) were used. The findings in both instances were very positive. In comparing pre- and post-tests, students demonstrated substantial increases in their knowledge levels about HIV/AIDS, and also demonstrated increased understanding of healthy behaviors and steps for avoiding
risky behaviors. Additionally, the K-6 assessments specifically focused on attitudinal changes as a result of COL instruction; in that regard, there was a substantial reduction in students’ fears about acquiring HIV and an increase in their acceptance of persons infected with HIV. Teachers responded positively to the overall curricula scope and content, indicating that the material was age appropriate and reflected health and personal behavior topics about which students needed—and wanted—to talk. Both curricula were also seen as culturally appropriate and sensitive to cultural issues.

While the results of the pilot-tests offered support for the effectiveness of the curricula, dissemination of findings—and the curricula—proved challenging. CDC’s funding resources to support COL teacher training and curriculum adoption at BIE and tribal schools were substantially reduced. Additionally, the timing of final publication of the curricula coincided with major educational policy changes at the national and local levels (e.g., No Child Left Behind), which considerably curtailed individual schools’ flexibility with respect to choosing specific curricula for use in their classrooms. As a consequence, subsequent distribution of the COL curricula was limited and, in the absence of continued support for training teachers to use the curricula, its adoption school-wide in BIE and other AI/AN youth-serving schools declined.

EVALUATION EFFORTS

In the late 1990s, CDC planned to initiate longitudinal evaluations of several of its Division of Adolescent and School Health (DASH)-funded HIV/AIDS prevention programs, including both COL curricula. In anticipation of this effort, and to lay the necessary groundwork for such an evaluation of COL, CDC contracted with the Academy of Educational Development (AED) to work closely with ORBIS in evaluation planning as it developed the new COL middle school curriculum. In order to ensure that long-term evaluation remained a guiding principle of the curriculum development process, AED became a member of the CEEG. Then, in 2002, CDC contracted with Education, Training, Research Associates (ETR) to conduct the evaluation of COL and three other DASH-funded projects. However, as a result of decreased funding and leadership change at CDC, neither COL curricula was ultimately evaluated as a part of that effort.

Nevertheless, given the promise of COL and its extensive community and expert feedback and input in the development and pilot-testing stages, the lead author of this paper obtained funding in 2004 from the National Institute of Mental Health for a group-randomized trial of the COL middle school curriculum (R01 MH069086)—an effort designed specifically to provide rigorous evaluation of COL. This effort was undertaken in one Native reservation community from 2006 to 2009. The main objective of this project was to evaluate the effectiveness of COL in changing knowledge, expectancies, and behaviors related to sexual risk taking among Native youth. The details of the
design and baseline results are described elsewhere (Kaufman et al., 2010). Of special note is the modification of the design to accommodate requests from community members.

- The tribe supported the project since it provided services to youth (in the form of a class provided in schools) but wanted all youth to receive these needed services. As a result, a wait-listed design was used, so that one half of the schools would receive COL first; the second half, one year later. This way, all schools had the opportunity to provide the class to students within the course of about 12 months.
- The tribe requested that its highly mobile youth population be accommodated. Therefore, students were allowed to participate if they transferred schools, if they dropped out for a period and then returned to school at a later date, or even if they were not present for the baseline survey.

Preliminary results of this project show promise (Whitesell, Kaufman, & Mitchell, 2010). Specifically, results to date suggest that the middle school COL curriculum may be especially effective in delaying sexual activity for the younger middle school students (11- to 12-year-olds). Preliminary results of qualitative feedback suggested that the curriculum was well received by students, and facilitators rated it highly on ease of implementation and teacher guidance for activities. The results also indicated that youth and facilitators recommended an increase in cultural content related to their own tribal history, traditions, and beliefs; and they also suggested that a digitized application might help increase students’ engagement in sections that were most challenging.

COL ADAPTATIONS

Native Boys and Girls Clubs

Although results of a formal evaluation of COL (or any other Native youth-focused intervention) were not available, the increased recognition of the vulnerability of AI/ANs to HIV/AIDS and other sexually transmitted diseases (STDs; Kaufman et al., 2007; Wong, Swint, Paisano, & Cheek, 2006) created a high demand for culturally appropriate approaches to providing Native youth with information and skills to make healthy choices about sexual activity.

In response to this concern, in the mid-2000s the IHS HIV/AIDS Program funded an adaptation of COL, as well as a set of pilot studies in Native Boys and Girls Clubs (NBGCs) to assess the adaptation. Specifically, funding was provided to the National Congress of American Indians and FirstPic, Inc. (a consulting firm that provides technical assistance, training, and other organizational development services for NBGCs), to revise the content in the K-6 curriculum for use with youth ages 10-12 for after-school programming in NBGC settings. The adapted version was pilot-tested in 10 geographically and culturally diverse NBGC sites in 2006.
The final report regarding the pilot tests focused on implementation of the adapted COL, and its strengths and weaknesses as noted by COL facilitators (National Congress of American Indians [NCAI] & FirstPic Inc., 2006). In general, the program appeared to be well received and liked by youth and facilitators. Chapters with an emphasis on activities were especially well received by youth and facilitators alike. Of note, the chapter titled “Protecting Yourself from HIV” was particularly challenging for many of the pilot-test sites. This chapter included messages and activities not only about sexual (and substance use) abstinence but also about homosexuality and condom use. Only 3 NBGCs implemented this chapter. These three NBGCs indicated that the chapter was very well designed and that youth were engaged in the material and asked many questions. Among those that did not implement the chapter, most noted that the facilitator, NBGC director, or parents felt that youth were not ready for such content or that such discussions should be conducted at home. Several suggestions for this chapter included conducting the chapter separately for boys and girls, providing the content to parents for their use at their discretion, and discussing the chapter one-on-one with youth. The variety of responses to the chapter at all levels (youth, club, and community) are likely indicative of the diversity of community and family approaches to sexual health for youth and underscore, as in other settings, the importance of active and respectful communication with parents and community members about the intent, content, and method of instruction of the curriculum.

In sum, the adapted version was well received across most pilot-test sites. Comments from NBGC staff endorsed the use of COL, and many adapted the curriculum content to reflect more closely local tribal culture. However, many of the comments were similar to the facilitator and youth feedback from the evaluation of the middle school curriculum: the need for increased cultural specificity, increased flexibility for implementation of content, and an increase in activities that engage youth.

MEDIA-RICH COL

With the continued need for appropriate HIV prevention curricula for Native youth and expanding technological educational opportunities, the IHS HIV/AIDS Program partnered with the Office of Minority Health Resource Center (OMHRC) in 2010 to obtain funding (from CDC and Minority HIV/AIDS Initiative) to convert the paper form of the adapted COL curriculum into a computerized, or “media-rich,” format. In a later partnership, the IHS HIV/AIDS Program obtained further funding from CDC to incorporate more information into the curriculum. In response to concerns from the 2006 pilot-tests and other feedback, the digitization requirements include the following adaptations.
Regionalization of content: Although specific tribal content is cost-prohibitive, the plan allows variations across six regions of the United States, including original art from those areas. Youth will be able to specify the area that most closely represents their tribal identity.

Flexibility in content and implementation: Because of the large variation in possible teaching settings (e.g., after-school programming, schools, youth groups, religious organizations) as well as the diversity in local standards for age-appropriate content, the digital curricula will be able to accommodate chapter preferences and the extent to which content is facilitated by an instructor/teacher or completed individually.

Teacher’s Corner: A “Teacher’s Corner” to facilitate learning goals and objectives for each chapter. This section of the curriculum will contain the original activities included in the “paper” version of the adapted curriculum.

STDs: Integrate additional materials focused on STDs and Hepatitis C. Independently, researchers at the University of Colorado Denver (UCD) successfully applied for teen pregnancy prevention funding from the Office of Adolescent Health (DHHS) to digitize the middle school COL curriculum and evaluate it as a promising sexual risk reduction intervention in NBGCs. After several conversations among the UCD, OMHRC, and IHS project leaders, it was clear that collaboration would be beneficial for a number of reasons.

The digitized version of the curriculum could benefit from technical, programmatic, scientific, and educational expertise across the entities.

Costs could be shared.

Coordinated evaluations included in the respective projects could collectively provide a strong and comprehensive assessment of the program.

Collaboration would increase the consistency, content, and form of dissemination activities.

At the time of this writing, the work on digitization of the adapted curriculum is underway. To-date, the collaboration has already produced a number of enhancements.

The technical and creative expertise in the project has generated immense flexibility and a number of enhancements that will address local needs while likely increasing engagement and interest among youth.

A re-ordering of curriculum chapters will provide a strong base for youth about adolescence and the circle of life. The new order also presents opportunities in the future to add other focused components, such as alcohol or drug use prevention.

Material on healthy relationships—part of the original K-6 curriculum—will be reintroduced in this version to emphasize respect for self and others.
Based on promising preliminary results on role of self-efficacy in behavior change from the middle school curriculum, elements of “volition” will be integrated more strongly into the digitized version. The concepts of empowerment and confidence in one’s ability to make healthy decisions appear to resonate clearly with young adolescents.

CONCLUSION

The COL HIV/AIDS prevention curricula are among the few that provide theory-based education and skills training designed specifically for AI youth. The evolution of these materials has been marked by funding challenges, changing health priorities, advancing technology, and providential partnerships. With the increasing focus on evidence-based interventions in funding opportunities, rigorously evaluating the new version will be paramount for continued use and support. While the UCD project will undertake that task in continued collaboration with OMHRC and IHS, such evidence, unfortunately, takes some time to produce. In the meantime, with its strong foundation of broad expert and community input, theoretical underpinnings, and technological advances, COL is well positioned to serve the youngest adolescents in Native communities.

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REFERENCES


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FOOTNOTE

1 Edwin Schupman was formerly ORBIS Senior Associate and Curriculum Developer for ORBIS' Circle of Life Curriculum Project; currently, he manages educational project development at the National Museum of the American Indian, Smithsonian Institution. Anne Litchfield was formerly a founding Director of ORBIS Associates and Project Director of its Circle of Life Curriculum Project; she is currently Senior Administrator for Planning and Management, Graduate School of Education, Touro College. Christina M. Mitchell is with the Centers for American Indian and Alaska Native Health at the University of Colorado Anschutz Medical Campus/Colorado School of Public Health.
COMMUNITY-BASED PARTICIPATORY RESEARCH TO IMPROVE PRECONCEPTION HEALTH AMONG NORTHERN PLAINS AMERICAN INDIAN ADOLESCENT WOMEN

Jennifer Richards, MPH, and Alicia Mousseau, MS

Abstract: Sacred Beginnings is a community-based participatory research project that examines the effectiveness of a culturally appropriate preconception health educational intervention developed by tribal community members and elders. The primary goal is to increase knowledge of preconception health and its benefits among adolescent females and tribal communities. Preconception health is an area of considerable concern among American Indians (AIs) in the Northern Plains region, as there are high rates of birth, infant mortality, unintended pregnancy, teen pregnancy, and sexually transmitted diseases in this area. We examined the effectiveness of implementing this intervention during a residential summer program for AI high school students. Materials and Methods: The educational intervention consisted of 15 preconception health education sessions and was piloted during a summer high school residential academic program. The intervention (N = 39) and non-intervention (N = 38) groups were comprised of incoming AI female freshmen representing comparable demographics. A pre- and post-intervention survey was administered to both groups. Results: Results indicated a significant difference in Time 2 (T2; post-intervention) scores, with the intervention group scoring higher than the non-intervention group in overall preconception health knowledge and obesity knowledge. In terms of intra-group score analysis between Time 1 (T1; pre-intervention) and T2, there were significant changes within the intervention group in knowledge of obesity and diabetes. Knowledge changes in smoking were approaching significance. Within the non-intervention group, there was a significant change from T1 to T2 in scores for diabetes knowledge only. Discussion: The key finding was that the intervention group had higher overall preconception health knowledge at T2 compared to the non-intervention group. Intervention...
participants demonstrated an understanding of how preconception behaviors may affect birth outcomes and maternal health. Another key finding was that, among participants in the intervention group, the change in knowledge regarding smoking beliefs between T1 and T2 were approaching significance. Because smoking during pregnancy is a risk factor for poor birth outcomes, this finding emphasizes that future curriculum modification should address the effects of smoking, and the benefits of smoking cessation, prior to or during pregnancy. Study limitations such as small sample size, high baseline health knowledge, the need to add traditional knowledge variables, and shortened implementation timeframe reveal key areas for improvement. Possible future intervention modifications include expanding on areas that reached or approached significance, implementing the intervention over a longer period of time, identifying ways to translate traditional knowledge into quantifiable survey measures, and implementing the intervention with high-risk, reservation-based populations of AI youth.

INTRODUCTION

Preconception health refers to women’s health before pregnancy. Improved preconception health can have positive influences on the developing fetus and on birth outcomes (Brundage, 2002). Several risk factors involving personal behaviors, medical conditions, environmental exposures, and psychosocial issues can be identified and potentially modified prior to conception through intervention and increased knowledge. Additionally, prevention of some conditions, complications, and behaviors can only happen before conception (Johnson, Posner, Biermann, & Cordero, 2006).

Chronic conditions such as asthma, obesity, cardiac disease, hypertension, diabetes, and thyroid disorder have been associated with complications for women and infants. Moreover, 11% of all pregnant women reported smoking during pregnancy, which is a risk factor for low birth weight (Martin et al., 2003). According to a Centers for Disease Control and Prevention (CDC) report analyzing Behavioral Risk Factor Surveillance System responses from women (All Races) ages 18 to 44 years, alcohol consumption during pregnancy, which is a risk factor for fetal alcohol syndrome, was reported by 10% of pregnant women and 55% of women not using contraception effectively, regularly, or at all (CDC, 2002). High-risk behaviors for sexually transmitted diseases (STDs) were also reported by some women (CDC, 2001). Furthermore, minority and low socioeconomic status have been associated with persistent increased disparities in birth outcomes (Haas, Meneses, &
McCormick, 1999; Johnson et al., 2006). More specifically, socioeconomic status has been shown to directly and indirectly affect access to health care, risky environmental exposures, and health behavior risks (Adler & Newman, 2002; Huynh, Parker, Harper, Pamuk, & Schoendork, 2005).

Among American Indian (AI) women, preconception health is of considerable concern, as AIs have high fertility rates and high infant mortality rates compared to other U.S. racial and minority groups. Among AI women of a Northern Plains tribe (which is representative of the sample being studied), there are persistent maternal and infant health disparities. According to a regional report of births between 2003 and 2005, AIs in this area have twice the birthrate and a 74% higher infant mortality rate than other women in the nation (All Races). In addition, in comparison to national rates (All Races), approximately 15% of AI infants have high birth weights; 37.6% of AI mothers report smoking during pregnancy, compared to 13.2% of other women in the nation; 5% of AI women report drinking alcohol during pregnancy, compared to 1% of other women; and 65% more AI women with diabetes gave birth than all other U.S. women. Finally, environmental factors influencing AI women and infant health include poverty (45% below federal poverty level), rural living, and political issues. Living in poverty has been known to adversely affect health in various ways; for example, poverty can cause or exacerbate barriers to accessing health resources, exposure to health hazards, inadequate diet, and stress-related illness (Rinki, Weng, & Richards, 2008). Due to the tremendous difficulties experienced by AI women, efforts have been made to increase their access to health care, reduce risk behaviors, and change provider practice to improve maternal and infant health. In addition, AI health programs have identified early intervention as important and necessary to ensure proper and thorough communication about preconception health care.

Early behavioral and educational intervention regarding preconception care can be effective in reducing risk factors (Korenbrot, Steinberg, Bender, & Newberry, 2002). Improving preconception health is of considerable interest as it not only improves reproductive health outcomes, but also has a substantial influence on societal costs (Committee on Perinatal Health, 1993; Institute of Medicine, 1985; Moos & Cefalo, 1987; U.S. Department of Health and Human Services, 1989). Correspondingly, the CDC has endorsed recommendations on improving preconception health. To meet these goals, education on the association between health risk factors and reproductive health should be improved to aid in changing knowledge, attitudes, and behaviors related to reproductive health (Moos, 2004). The Institute of Medicine, several national committees, and a number of professional organizations have established guidelines regarding preconception health care importance and content. It has been suggested that evidence-based information about preconception health be distributed and utilized at public programs and as a part of integrated services (Johnson et al., 2006).
Use of culturally and linguistically appropriate systems of care to enhance preconception health care services, with the ultimate goal of providing comprehensive evidence-based preconception health care, has also been recommended (Johnson et al., 2006). One avenue of promoting culturally appropriate preconception health care is community-based participatory research (CBPR), which was developed to increase the effectiveness of health promotion and prevention programs by involving target communities in their design, implementation, and evaluation. CBPR is seen as a more effective approach than research implemented by non-community members, which rarely proves to be influential or significant (Robert Wood Johnson Foundation National Program Office on Diabetes, 2002).

Although there are recommendations, guidelines, and numerous procedures available for improving preconception health, efforts to improve pregnancy outcomes through behavior modification interventions that focus on comprehensive strategies for addressing multiple issues have been inconsistent and sparsely utilized (Atrash, Johnson, Adams, Cordero, & Howse, 2006). Additionally, few studies have examined women’s behaviors before pregnancy; the majority of studies on women’s preconception health are retrospective reports (Elsinga et al., 2008; Hellerstedt et al., 1998; Inskeep et al., 2009; Prager, Malin, Spiegler, Van Natta, & Placek, 1984; Tough, Tofflemire, Clarke, & Newburn-Cook, 2006). For example, although many national, state, and local public health promotion campaigns have focused on reducing smoking, alcohol abuse, obesity, HIV/STDs, and other health risk behaviors, a majority of adults in the U.S. report limited awareness of how these health and other lifestyle decisions influence reproductive health (Roth & Taylor, 2001). One study examining women’s perceptions, knowledge, and awareness of preconception health care reported that, although a majority of women understand the importance of optimizing their health prior to conception, they also have deficiencies in their knowledge of risk factors that impact maternal and fetal health (Frey & Files, 2006).

In sum, preconception health has become important because of the overall impact of women’s health on birth outcomes and children’s health, as well as on the associated societal costs. Recommendations to promote and increase preconception health have been made by many organizations, with a recent focus on utilizing community organization and participation. In accordance with recent preconception health recommendations, and due to a lack of empirical evidence, the present study focused on utilizing a culturally and community-focused CBPR project to improve preconception health knowledge among AI adolescent women.

The Sacred Beginnings Project is based at a Northern Plains Tribal Health Administration department and is administered entirely at the tribal level, with the Health Administrator serving as the Principal Investigator. Preconception care was designated as a high priority as the direct result of a regional 2007 Perinatal Infant Mortality Review (PIMR). The goals of this specific PIMR were
to examine significant social, economic, cultural, safety, and health system factors associated with infant mortality through individual case review to identify causes of infant death and develop action plans for decreasing infant mortality; and to engage community members in the implementation of community-based policies and interventions to combat infant mortality. As a result of the PIMR, preconception counseling was identified as a strategy for decreasing infant mortality rates (Cuny, 2011).

The Tribal Health Administration designed a multiyear Native American Research Centers for Health proposal aimed at increasing preconception health awareness and preconception counseling visits as a mechanism to combat infant mortality. The CBPR framework included the development of a tribal working group, composed of community members who are knowledgeable in preconception health as well as cultural teachings. This working group was instrumental in the development of the Sacred Beginnings curriculum, which includes cultural teachings on healthy relationships, motherhood, and womanhood. The working group is currently composed of 12 individuals from the following community sectors: the tribal health and human services committee, Indian Health Services midwifery department, tribal home visiting program, parent council, family and child education program, tribal health education, and school administration, as well as cultural instructors, tribal court judge, and domestic violence prevention workers. Members meet once per quarter to provide input on all media messages, manuscripts, survey instruments, and other areas of project implementation.

Another CBPR method utilized early in project design was focus groups with various community populations. The focus groups were utilized to develop key media messages to increase community knowledge of preconception health. Project staff also asked different focus group participants their preferred means of mass communication. As a result, our outreach campaign includes tribal radio shows, social media networking, outreach booths at community events, and newsletters.

The CBPR framework also includes collaboration with the tribe’s previously established Tribal Research Review Board to ensure that the project is being implemented in accordance with human rights protection and research protocol standards.
Preconception Health Intervention

A major component of the Sacred Beginnings Project is a preconception health intervention that targets middle school-age girls, 11-14 years old, and aims to increase their understanding of healthy versus harmful lifestyle choices that may affect pregnancy. The focus is on providing young women with vital information so that, when they are ready to be parents, they will improve their chances of having healthy infants.

Lakota Cultural Components

The intervention strives to increase knowledge of women’s health by introducing key health topics, while incorporating Lakota teachings and beliefs. The most distinctive feature of the Sacred Beginnings intervention is the emphasis on Lakota cultural practices relating to preconception health, pregnancy, and parenting. The sessions of the curriculum that include Lakota teachings were authored by local Lakota elderly women who have a strong background not only in cultural knowledge but also in teaching that knowledge to youth.

The Lakota people are part of the Oceti Sakowin (Seven Council Fires), known today as The Great Sioux Nation. One of the cornerstones of the Lakota culture is the womanhood rite of passage ceremony, called the Isnati. The Isnati, while varying by region, is common to most bands of Oceti Sakowin and takes place after a young woman has her first menses. In the sessions of the intervention focused on the Isnati, participants learn about ceremony protocol and, most importantly, Lakota teachings on becoming a woman, motherhood, and parenting. For example, many Lakotas still strongly believe in the values brought to the people by the White Buffalo Calf Maiden. From this perspective, a woman respects herself and others; nurtures healthy relationships; cares for her family; and holds virtuousness, truthfulness, humor, wisdom, courage, and generosity in high regard (St. Pierre & Long Soldier, 1995). This teaching is especially important because it capitalizes on the role of the woman in traditional Lakota culture—specifically, how a woman should respect herself and expect a man to respect her as well.

It is our intention not only to educate young women about their culture, but also to evaluate how the Lakota value of respect (of both oneself and others) may be a protective factor against high-risk behaviors. For example, alcohol use has become a popular rite of passage in mainstream American culture. This intervention presents the unique opportunity to evaluate how traditional Lakota teachings might affect adolescent beliefs toward alcohol. The sessions of the curriculum focused on culture also emphasize that a young girl should view her menstruation as a sacred time.
that should be set aside to learn about her culture, values, and traditional skills such as beading, sewing, and quillwork (St. Pierre & Long Soldier, 1995). Many cultural teachings of this type have been passed down through generations via stories; in keeping with the oral tradition, instructors shared stories from the curriculum as well as their own personal experiences. In future versions of the curriculum, we hope to document more personal accounts of the Isnati and Lakota parenting as told by tribal elders.

Implementation and Location

The educational intervention consisted of a 15-session preconception health class that was taught two to three times per week throughout a 6-week summer residential education program (described below). Class sessions lasted approximately 45 minutes and were taught in small groups of 10-15 students. Topics included nutrition; fitness and exercise; diabetes; prescription medication abuse; STDs; Lakota cultural perspectives on womanhood, pregnancy, and parenting; and alcohol, tobacco, and drug use. This study examined the effectiveness of the intervention among incoming freshman females in the summer residential program.

The summer residential program, focusing on academic enrichment for low-income minority high school youth, was the host for the intervention. The program is based on a college campus and enrolls over 200 male and female students in grades 9-12 from across the state in which the Sacred Beginnings Project was developed. Approximately 85% of the camp’s students are AI, and many are potential first-generation college students.

Participants

All incoming freshmen females whose parents attended the parent orientation were eligible to participate in the intervention, which was optional. Project staff presented an overview of the intervention during the parent orientation and collected signed consent and assent forms from parents and students after the orientation. A large number of parents were not present at the initial parent orientation, thus making their children ineligible for participation in the intervention. Both the intervention and non-intervention (control) groups were randomly drawn from the 77 students who signed assent forms and whose parents signed consent forms: 39 participants were assigned to the intervention group, and the remaining 38 to the control group.
The pre- and post-intervention survey (see Appendix A) consisted of 98 questions that were administered in paper format. Question types included true/false, Likert scale, and multiple choice. Question topics included preconception health knowledge, e.g., understanding of how pre-pregnancy weight, nutrition, physical activity, and alcohol/substance use might affect a future pregnancy.

For purposes of data analysis, we measured the preconception health knowledge variable as the number of participants who correctly answered question 20 under the Growing and Preconception Health Perceptions section of the survey. This question asks “How important do you think the following items are to helping a young woman be prepared to have a healthy pregnancy and a healthy baby?” followed by a list of activities that participants can rate on a scale from 1 = Important to 3 = Not important. The complete list is included in Appendix A.

Other preconception health-related questions included topics such as relationships/sexual activity, HIV/AIDS and STD knowledge, self-esteem, peer influence, and cultural knowledge. CBPR methodology was utilized in survey development by gathering input from tribal working group members and community health professionals familiar with survey design and implementation.

We also incorporated questions from the Youth Risk Behavior Survey in the areas of violence-related behaviors, alcohol and drug use, physical activity, and body image. Our variables for the survey instrument were based on existing instruments customized to AI and/or adolescent female populations. Many variables were adapted from the Wiconi Teca Waste Youth Survey (Kaufman, 2005) and the Preconception Health Survey (Takahashi, 2007). Although the Isnati is a major component of the overall curriculum, the Isnati variable was incorporated into a single question on the survey instrument: “Are you familiar with the Isnati (Lakota womanhood ceremony)?” Because the survey utilized variables from existing instruments, we were unable to identify any traditional knowledge variables that could be incorporated. However, for future survey modifications, we will identify ways to translate traditional Lakota knowledge into quantifiable survey measures based on feedback from the working group and Lakota knowledge experts.

On the first day of class, the survey was administered to both the intervention and non-intervention groups. The intervention group began the preconception health sessions on the second day of class, while the non-intervention group attended other program classes such as college preparation, financial literacy, and tribal government. (The intervention group had the opportunity to take these classes at a different time.) Ideally, non-intervention students were not to be exposed to any class that had the same content as the intervention group. However, the non-intervention students attended a two-hour seminar on diabetes education, in which they received general information on diabetes, Body Mass Index, exercise, and nutrition. The intervention content was more in-depth.
and emphasized the effects of preconception behaviors on future birth outcomes. At the end of the summer program, the post-intervention survey was administered to both the intervention and non-intervention groups.

Data Management and Analysis

To secure confidentiality, pre- and post-intervention data were identified by a randomly assigned subject ID number. While each participant had the same ID number at pre- and post-intervention, we only looked at aggregate results for this analysis. Consents were kept in locked file cabinets in the project study office. Data were entered into a Microsoft Excel 2008 file and converted to an SPSS data file for analysis.

To examine whether receiving the intervention led to increased preconception health knowledge, paired-sample $t$-tests and independent-sample $t$-tests were computed. A paired-sample $t$-test was performed to examine the difference (post-survey or Time 2 [T2] minus pre-survey or Time 1 [T1] scores) within the intervention group and within the non-intervention group on the dependent variables: overall preconception health knowledge, alcohol knowledge, smoking knowledge, obesity knowledge, diabetes knowledge, and condom use knowledge.

In addition, an independent sample $t$-test was conducted to examine the difference between the intervention and non-intervention groups on T1 scores and T2 scores of the same dependent variables mentioned above. In this analysis, the independent variable was the preconception health intervention (intervention and non-intervention). An independent-sample $t$-test was also conducted to compare differences in the dependent variables (T2 minus T1 scores) for the preconception health intervention independent variable (preconception health intervention and non-intervention). None of the variables were significantly skewed and kurtotic; therefore, no data transformations were utilized.

Research Protocol Review

The Oglala Sioux tribe Research Review Board, which serves as the tribal human subjects review board, approved the study, as did the host program.

RESULTS

Our sample—both the intervention and non-intervention groups—consisted of 77 adolescent females. The intervention group started with 39 students; of those, 11 did not complete the intervention, leaving the intervention group with 28 participants. Of the 38 students in the non-intervention group at the beginning of the summer, 30 completed the post-intervention survey. The participants who did not complete the post-intervention survey either withdrew from the overall
summer program voluntarily or were released due to disciplinary infractions. Of the 39 participants in the intervention group, 100% self-identified as AI (either solely or in combination with another race), and only one did not belong to a Lakota or Dakota band of the *Oceti Sakowin*). In the non-intervention group, 90% (n = 34) self-identified as AI.

### Comparing T1 to T2 Differences in Knowledge of Preconception Health within the Intervention Group and within the Non-Intervention Group

Table 1 provides a comprehensive view of the number and percentage of respondents in both the intervention and non-intervention groups who reported knowledge in the key preconception health areas at T1 and T2. Results showed significant changes in T1 and T2 scores within the intervention group in knowledge of obesity (28% vs. 44%, *p* = .01) and diabetes (36% vs. 72%, *p* = .02). Knowledge changes in smoking (56% vs. 76%, *p* = .07) were approaching significance. In contrast, there were no significant differences in T1 and T2 knowledge of preconception health (*p* = .20), alcohol influence (*p* = .38), and use of condoms for protection (*p* = .15) within the intervention group.

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
<th><em>P</em> Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention Group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preconception knowledge</td>
<td>93%</td>
<td>96%</td>
<td>25</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>73%</td>
<td>87%</td>
<td>26</td>
</tr>
<tr>
<td>Smoking</td>
<td>56%</td>
<td>76%</td>
<td>23</td>
</tr>
<tr>
<td>Obesity</td>
<td>28%</td>
<td>44%</td>
<td>28</td>
</tr>
<tr>
<td>Diabetes</td>
<td>36%</td>
<td>72%</td>
<td>28</td>
</tr>
<tr>
<td>Condom use</td>
<td>75%</td>
<td>78%</td>
<td>26</td>
</tr>
<tr>
<td><strong>Non-intervention Group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preconception knowledge</td>
<td>90%</td>
<td>90%</td>
<td>29</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>75%</td>
<td>81%</td>
<td>29</td>
</tr>
<tr>
<td>Smoking</td>
<td>57%</td>
<td>67%</td>
<td>30</td>
</tr>
<tr>
<td>Obesity</td>
<td>30%</td>
<td>33%</td>
<td>29</td>
</tr>
<tr>
<td>Diabetes</td>
<td>43%</td>
<td>63%</td>
<td>30</td>
</tr>
<tr>
<td>Condom use</td>
<td>76%</td>
<td>74%</td>
<td>28</td>
</tr>
</tbody>
</table>

* Percentage of participants who demonstrated knowledge relative to the specific variable in their specific group. The *N* variation between variables is attributed to skipped questions.
Within the non-intervention group, there was a significant change from T1 to T2 in scores for diabetes knowledge (43% vs. 63%, \( p = .02 \)). Conversely, there were no significant changes in T1 and T2 knowledge of preconception health \( (p = .97) \), alcohol influence \( (p = .45) \), smoking \( (p = .42) \), obesity \( (p = .27) \), and use of condoms for protection \( (p = .36) \) within the non-intervention group.

### Comparing T2 Changes in Knowledge of Preconception Health between the Intervention Group and the Non-Intervention Group

There was a significant difference in knowledge at T2 between the two groups, with the intervention group scoring higher than the non-intervention group in overall preconception health knowledge (96% vs. 90%, \( p = .03 \)) and obesity knowledge (44% vs. 33%, \( p = .01 \); see Table 2). There were no significant differences in T2 scores between the intervention and non-intervention groups on knowledge of alcohol (87% vs. 81%, \( p = .33 \)), smoking (76% vs. 67%, \( p = .35 \)), diabetes (72% vs. 63%, \( p = .34 \)), or use of condoms for protection (78% vs. 74%, \( p = .12 \)).

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Intervention Group</th>
<th>Non-intervention Group</th>
<th>( P ) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preconception knowledge</td>
<td>96%</td>
<td>90%</td>
<td>0.03</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>87%</td>
<td>81%</td>
<td>0.33</td>
</tr>
<tr>
<td>Smoking</td>
<td>76%</td>
<td>67%</td>
<td>0.01</td>
</tr>
<tr>
<td>Obesity</td>
<td>44%</td>
<td>33%</td>
<td>0.34</td>
</tr>
<tr>
<td>Diabetes</td>
<td>72%</td>
<td>63%</td>
<td>0.12</td>
</tr>
<tr>
<td>Condom use</td>
<td>78%</td>
<td>74%</td>
<td>0.12</td>
</tr>
</tbody>
</table>

### Comparing T1 to T2 Differences in Knowledge of Preconception Health between the Intervention Group and the Non-Intervention Group

Results showed no significant differences in mean \( (M) \) values between the intervention group and non-intervention groups’ scores (T2 minus T1) regarding knowledge of overall preconception health \( (M = .84 \text{ vs. } M = 0.04, p = .52) \), alcohol influence \( (M = 0.38 \text{ vs. } M = 0.38, p = 1.00) \), smoking influence \( (M = 1.11 \text{ vs. } M = 0.67, p = .66) \), obesity \( (M = 1.85 \text{ vs. } M = 0.63, p = .09) \), diabetes \( (M = 1.26 \text{ vs. } M = 1.10, p = .78) \), and use of condoms for protection \( (M = 1.52 \text{ vs. } M = -1.17, p = .11) \); see Table 3). Of note, there were no T1 differences between the intervention and non-intervention groups.
Table 3
Independent Sample \( t \)-test for Intervention and Non-intervention Dependent Variable Differences (T2 minus T1 scores)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention Group</th>
<th>Non-intervention Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M )</td>
<td>( SD )</td>
</tr>
<tr>
<td>Preconception knowledge</td>
<td>0.84</td>
<td>3.20</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>0.38</td>
<td>2.06</td>
</tr>
<tr>
<td>Smoking</td>
<td>1.11</td>
<td>2.42</td>
</tr>
<tr>
<td>Obesity</td>
<td>1.85</td>
<td>2.09</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1.26</td>
<td>1.89</td>
</tr>
<tr>
<td>Condom use</td>
<td>1.52</td>
<td>4.93</td>
</tr>
</tbody>
</table>

DISCUSSION

Efforts to improve pregnancy outcomes through behavior modification interventions have been inconsistent and ineffectively utilized (Atrash et al., 2006). In addition, many adults in the U.S. are not fully aware of how risk behaviors can affect reproductive health (Roth & Taylor, 2001). Therefore, it is recommended that general health education in school be improved to promote reproductive awareness; however, no studies have examined the influence of a preconception health intervention among AI adolescent females. Thus, the current study examined the influence of a CBPR preconception health intervention among AI adolescent females. We focused on overall preconception health knowledge as well as on specific knowledge of the effects of alcohol, smoking, obesity, diabetes, and use of condoms for protection on women’s health prior to pregnancy and how their behaviors may affect birth outcomes. To our knowledge, this is the first study to implement a culturally specific preconception intervention.

Our findings show a promising trend toward increased preconception health knowledge after the intervention, both within the intervention group and in the change in post-survey (T2) measurement between the intervention and non-intervention groups. Data indicate that there were significant increases in diabetes and obesity knowledge within the intervention group. In contrast, within the non-intervention group, significant changes were demonstrated only in diabetes knowledge scores. On the post-survey, the intervention group displayed significantly more changes in overall preconception health knowledge and obesity knowledge as compared to the non-intervention group.

These results further demonstrate the need for a community-based preconception health education intervention to increase preconception health knowledge. Previous literature has shown a lack of knowledge of preconception risk factors (Frey & Files, 2006) and the limited influence
of health promotion campaigns on preconception and reproductive health (Roth & Taylor, 2001). However, participants in the current study who received the intervention had an increase in post-survey scores for diabetes and obesity, in contrast to those in the non-intervention group, who only demonstrated changes in post-survey scores for diabetes. It is important to note that the participants who did not receive the intervention nonetheless attended a diabetes prevention group, which may account for the change in their diabetes knowledge. Despite a change in diabetes knowledge, the non-intervention group’s post-survey knowledge of obesity did not change. Obesity is related to diabetes; however, the specific repercussions of being overweight in relation to reproduction health were not covered in the diabetes prevention class that the non-intervention group received. These issues were discussed in detail in relation to preconception health in the intervention group. In addition, the intervention group had higher overall preconception health knowledge on the post-survey, compared to the non-intervention group. Thus, they may already have had a broad understanding of the negative influence of alcohol, diabetes, smoking, and condom use on preconception health, as these are general health risks. Yet, an understanding about the specific influence of the more intricate health risks associated with reproductive health would be useful in expanding preconception health knowledge. Lastly, participants (in both the intervention and non-intervention groups) initially perceived their health to be fair (23%, n = 18), good (48%, n = 37), or excellent (29%, n = 22). This finding indicates that participants may have had a partial understanding of general health knowledge. We do not know if we would discover the same baseline knowledge level in a less resilient or reservation-based sample.

Another key finding among the intervention group was that knowledge regarding smoking beliefs between T1 and T2 was approaching significance. Tobacco use is related to enormous health disparities among Northern Plains tribes. Considering that almost 40% of Northern Plains AI mothers report smoking during pregnancy (Rinki et al., 2008), and smoking during pregnancy is a risk factor for sudden infant death syndrome and other poor birth outcomes, this finding emphasizes that future curriculum modification should expand on the effects of smoking on preconception health—specifically, how preconception smoking beliefs can lead to further smoking during pregnancy or, conversely, to smoking cessation during pregnancy. Collaboration among tobacco programs and tribal health departments in addressing the importance of tobacco prevention/cessation during the preconception period could be helpful.

Limitations

Small sample size and the short period between pre- and post-surveys may have limited our ability to show a difference between the groups in any preconception health areas. We were initially limited to less than 40 participants per group. At the conclusion of the intervention, however, we had
lost 19 participants, resulting in only 48 total participants who took the post-survey. The attrition rates of the intervention and non-intervention groups were 28% and 21%, respectively. The attrition rates and small sample size may indicate that the areas approaching significance, such as smoking knowledge, could have been significant in a larger sample.

The condensed time frame in which the intervention was implemented was another limitation. The curriculum originally was designed as a semester-long education intervention, whereas the host program only allowed a 5-week intervention. As a result, the students may not have had adequate time to capture the full benefits of the intervention. In addition, the teaching style encouraged discussion among participants. The disadvantage of this teaching style was that some students felt uncomfortable speaking in front of others and were less inclined to participate. These students did not participate in class discussions until they were more comfortable with their peers, limiting conversation to the latter half of the intervention. Future intervention efforts will include other methods of engaging students, such as small-group talking circles and journaling discussion.

Another limitation was that the participants in our sample were from an academic enrichment summer program; students had to fill out an application, write an essay, submit letters of recommendation, and report their grades in order to be admitted. It is important to note the distinctive feature of this sample of AI youth, as their baseline preconception health knowledge may have been influenced by factors such as high educational performance, supportive home environment, higher socioeconomic status (relative to other AI youth), and/or a preexisting healthy lifestyle. An additional limitation was that we only sampled students whose parents or guardians attended an orientation and gave consent; this process may have excluded students who have limited parental involvement. This possibility is significant because parental involvement is a major factor in helping teens avoid high-risk behaviors such as alcohol and drug use and sexual activity (U.S. Council of Economic Advisers, 2000).

Furthermore, the measurement scores for the different dependent variables were not uniform; some measures had more questions and, therefore, higher scores than others. Having a similar number of questions for each dependent variable would have given a better understanding of the dependent variables compared to each other. As the curriculum is still being developed and revised, future intervention protocols should emphasize each dependent variable’s influence on preconception health, to ensure that this topic remains the primary focus of the course.

As mentioned previously, an especially crucial limitation was the inadequacy of the survey instrument in capturing cultural knowledge gained by the participants. The intervention incorporated several cultural components (especially the Isnati womanhood ceremony) that could positively influence behavior. Future survey instrument modifications will focus on identifying ways to translate traditional knowledge into quantifiable survey measures.
Lastly, there is also a possibility that our sample was exposed to one or more health education classes during the summer program prior to our intervention. Although we made every attempt to isolate our sample from other classes that might offer content similar to that in our curriculum, our data may have also been skewed as a result of the closed environment (i.e., shared dorm rooms, mixed classes, small campus) shared by the intervention and non-intervention participants. Students may have discussed health information outside of class and been influenced by others’ perceptions and knowledge.

Next Steps

The fact that intervention subjects were exposed to knowledge of traditional Lakota practices is of great importance, as Sacred Beginnings is a CBPR project. Future steps toward quality improvement include identifying ways to demonstrate the effectiveness of incorporating traditional Lakota teachings into our intervention activities. We hope to emphasize how CBPR methodology not only promotes behavior change but also empowers Indigenous populations through cultural revitalization.

High birth rates, coupled with challenging social and behavioral determinants of health, bear negatively on AI women’s birth and reproductive health outcomes. Further research is needed to demonstrate the effectiveness of educational interventions in promoting behavior change and increasing preconception health knowledge in AI populations. Specifically, research is needed to focus on reservation-based AI populations that are at higher risk for poor reproductive and birth outcomes. The results of this intervention, coupled with the limitations (namely, the high attrition rate of an already small sample size and the high baseline knowledge of our sample), suggest that we might be able to show change in different populations of Native youth.

Our education intervention was, to our knowledge, the first of its kind to incorporate a traditional AI perspective on preconception health in promoting behavior change in an academic environment. While the results did not indicate a significant increase in knowledge in all curriculum areas, there was an overall change in post-survey preconception health knowledge and obesity knowledge for the intervention group compared to the non-intervention group, as well as a positive response to the incorporation of traditional Lakota teachings. Further research is needed to demonstrate whether the retention and comprehension of traditional preconception knowledge positively affects reproductive and birth outcomes. In the future, we plan to evaluate our intervention in a traditional middle or high school environment over the course of one or two semesters. In this setting, adequate time will be available to elaborate on measures that were approaching significance.
REFERENCES


Thank you for helping us by answering these questions! Your honest answers are very important to us. There are a few things to keep in mind as you answer the questions.

- Many questions are personal and sensitive. *We truly appreciate your honest answers!*!!
- We will not tell anyone what your answers are. Even if you tell us about illegal activities like using drugs or alcohol, we won't tell anyone.
- You can skip any question.
- You can stop at any time.
- Please mark the answers as best you can even if the question doesn't seem to apply to you.
- Please pay special attention to whether we ask about the last month, the last year, the first time you did something, or the last time you did something. We will bold the timeframe, to help you remember.
- There are no right or wrong answers, and you will not be graded on your answers.

Look for arrows (→) to explain section directions.

**Who Am I?**

→ Please circle your answer for each of the following questions

1. Your ethnicity/race or cultural group is (Select one or more responses):
   - A. American Indian/Alaska Native
   - B. Asian or Asian American
   - C. Black or African-American
   - D. Hispanic or Latino
   - E. White, Caucasian, European (not Hispanic)

continued on next page
Appendix A, Continued
Preconception Health Survey

2. Are you an enrolled member of __________ Tribe?
   A. No
   B. Yes

3. Are you an enrolled member of some other tribe?
   A. No
   B. Yes
   (If "Yes", Please name the tribe: ____________________________________________)

4. In what grade are you?
   A. 6th grade
   B. 7th grade
   C. 8th grade
   D. Ungraded or other grade

5. What is your highest educational goal?
   A. I don’t have any goals
   B. Complete my current year of school
   C. Graduate from high school
   D. Go into the military
   E. Go to college
   F. Graduate from college
   G. Go to more school after graduating from college

6. In general, would you say your health is...
   A. Poor
   B. Fair
   C. Good
   D. Excellent

→ **For the next part, please circle the number that best describes how much you agree or disagree with each statement.** For example:

<table>
<thead>
<tr>
<th>I like the color blue.</th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

*(This person shows that blue is a favorite color, by circling "4" to strongly agree)*

7. Being a part of my tribe or cultural group is important to me
   | Strongly Disagree | Somewhat Disagree | Somewhat Agree | Strongly Agree |
   | 1                 | 2                 | 3             | 4             |

continued on next page
Appendix A, Continued
Preconception Health Survey

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>I have a lot of pride in my tribe or cultural group</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>I speak or am learning to speak my tribal or cultural language</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.</td>
<td>I listen, sing, or dance to traditional music</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11.</td>
<td>I feel good about my cultural and tribal background</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12.</td>
<td>I feel that I have many good qualities</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13.</td>
<td>I have a positive attitude</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14.</td>
<td>I think I am no good at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15.</td>
<td>I am satisfied with myself and my body</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Friends**

We are now going to ask you a few questions about your friends.

→ **Please circle the number that best describes your friends.**

How many of your friends...

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>A few</th>
<th>Some</th>
<th>Many</th>
<th>Almost all or all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>...encourage you to disobey your parents?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>...volunteer or participate in community groups, like youth groups?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>...try to get you to do dangerous things?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>...get in trouble at school?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>...go to sweat/ceremony or church regularly?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>...get in a lot of fights with other kids?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>...think schoolwork is very important?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8.</td>
<td>...plan to go to college?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Growing and Preconception Health Perceptions**

→ **Please circle or mark your answer for each of the following questions**

16. Have you ever had a menstrual period (been on your moon)?
   A. No
   B. Yes

17. How old were you when you had your very first menstrual period (first had your moon)?
   _____ Years old
   _____ I haven't had my period yet

continued on next page
Appendix A, Continued
Preconception Health Survey

18. Are you familiar with the Isnati (womanhood ceremony)?
   A. No
   B. Yes
   C. Not sure

19. Have you participated in an Isnati (womanhood ceremony)?
   A. No
   B. Yes
   C. Not sure

20. How important do you think the following items are to helping a young woman be prepared to have a healthy pregnancy and a healthy baby?

   Please circle the number that best describes the level of importance of the following phrases in helping young women to be well and healthy.

<table>
<thead>
<tr>
<th>Item</th>
<th>Important</th>
<th>Somewhat Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating healthy foods</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Being smoke and tobacco free</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Not drinking alcohol</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Being drug free</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Taking vitamins</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Seeing a doctor annually for a health check-up</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Staying a healthy weight</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Abstaining from sexual activity</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Avoiding unplanned pregnancies</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Learning about Lakota culture and traditions for health and family</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

21. When do you think the best age is for woman to have her first baby? (Circle one answer)
   A. Age 12-15
   B. Age 16-18
   C. Age 18-21
   D. Age 22-29
   E. Age 30 or older

   continued on next page
### Preconception Health Knowledge

Do you think the following statements are true or false?  
**Circle the answer that you believe is correct**

#### Sexually Transmitted Diseases (STDs):

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All sexually transmitted diseases (STDs) are curable</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>2. Worldwide, HIV/AIDS is mostly a gay disease</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>3. Condoms can help protect a person from getting STDs</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>4. People only get HIV/AIDS by having sex with someone they don't know very well</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>5. Some STDs can be gotten by kissing an infected person</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>6. The HIV/AIDS virus attacks people's immune system; then, their bodies can't protect them from diseases any more</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>7. Getting bit by a mosquito is a way to spread HIV/AIDS</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>8. You can usually tell by looking at people if they have HIV/AIDS</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>9. A mother with HIV/AIDS can pass it on to her baby by breastfeeding</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>10. People can get shots to protect them from ever getting HIV/AIDS</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>11. Showering or washing one's genitals or private parts after sex keeps a person from getting HIV/AIDS</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>12. Abstinence, which means not having any kind of sex, is the best way to avoid getting HIV/AIDS and most other sexually transmitted diseases (STDs)</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
</tbody>
</table>

#### Alcohol Consumption:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Alcohol can cause short-term and long-term damage to your body</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>14. Drinking alcohol during pregnancy increases the chances of having a baby with:</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>A. Reduced intellectual development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Behavioral problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Lowered function of brain and spinal cord</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>D. Facial abnormalities</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>E. Slower physical growth</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
</tbody>
</table>

#### Smoking:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. The tobacco in cigarettes contains thousands of chemicals, including stuff that's in batteries, rat poison, and car exhaust</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>16. Smoking during pregnancy increases the chances of:</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>A. Giving birth early</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

continued on next page
Appendix A, Continued
Preconception Health Survey

<table>
<thead>
<tr>
<th>Question</th>
<th>No</th>
<th>Yes</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Small/underweight babies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. A baby dying before they are born</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. A baby dying after they are born</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Harm to mother or baby during baby's development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Sudden Infant Death Syndrome (SIDS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mental Health:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. A mother’s mental health and emotional well-being can affect a</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>baby’s health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overweight and Obesity:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Women who are overweight (Body Mass Index [BMI] of 25-29.9 kg/m²)</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>or obese (BMI &gt; 30) before getting pregnant have an increased chance of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Not being able to have children</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>B. Diabetes</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>C. High blood pressure</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>D. Circulatory problems</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>E. Needing medication to bring on labor</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>F. Cesarean section (C-section)</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>G. Having trouble with breastfeeding</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>H. Keep the weight gained during pregnancy after giving birth</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td><strong>Diabetes:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Problems for the developing baby of an overweight or obese</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mother include:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Death of a developing baby or newborn</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>B. Abnormally large baby</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>C. Birth defects, including heart defects</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>D. Prematurity and/or small</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
<tr>
<td>E. Childhood obesity</td>
<td>No</td>
<td>Yes</td>
<td>Unsure</td>
</tr>
</tbody>
</table>

continued on next page
Appendix A, Continued
Preconception Health Survey

School Programs:

We are going to ask you about some of the things that you may be learning about in school. Think about all your classes over the last 4 weeks while you were at school.

1. Do you remember learning about any of these topics in the last 4 weeks?  
   → Circle Yes or No for each topic
   A. Self-esteem, decision-making, or values  
      No  Yes
   B. Human growth or changes in your body as you grow up  
      No  Yes
   C. Relationships with the opposite sex  
      No  Yes
   D. What to do in risky situations such as parties with alcohol or drugs, or driving with someone who is drunk  
      No  Yes
   E. A disease called HIV or AIDS  
      No  Yes
   F. Diseases called sexually transmitted diseases, or STD's  
      No  Yes
   G. Drugs or alcohol?  
      No  Yes

   IF YOU ANSWERED "NO" TO ALL OF A-G ABOVE, SKIP TO NUMBER 4 ON THE NEXT PAGE

2. Who led most of the discussion(s)? (Circle one or more responses)
   A. Sacred Beginnings Class Instructor  
   B. Another class instructor  
   C. An adult from outside the school  
   D. A young person or a group of young people, about your age  
   E. Other. Please list: ______________________________________________
   F. A family member

3. Think about the topics you marked A-G in number 1, above. In the last 4 weeks of school, how did you hear about these topics?  Circle Yes or No for each topic
   A. During the Sacred Beginnings class (including guest speakers)  
      No  Yes
   B. During another class  
      No  Yes
   C. Someone from outside the school came in and gave a special presentation for the whole school, such as at an assembly (not a Sacred Beginnings guest speaker)  
      No  Yes
   D. Someone from outside the school came in and gave a special presentation, but just during one of my regular classes (not the Sacred Beginnings class)  
      No  Yes
   E. Other. Please list _____________________________________________________________  
      No  Yes

4. Before now, have you EVER been taught about AIDS or HIV in school?  
   A. No  
   B. Yes

   continued on next page
Appendix A, Continued
Preconception Health Survey

Attitudes and Opinions about Condoms:

Please circle the number that best describes how sure you are about each statement. If you haven’t had sex, mark how you think you would handle these situations. There are no right or wrong answers. Just give your honest opinion.

<table>
<thead>
<tr>
<th>I would not do this</th>
<th>Not very sure</th>
<th>Kind of sure</th>
<th>Completely sure I would do this</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I would use a condom if I had sex with someone new</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. If neither of us had a condom, we would get one before we had sex</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. If I were turned on and about to have sex, I would forget to use a condom</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. If there was a chance that I was going to have sex, I'd make sure we used a condom</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. I know where to get condoms</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. I can get condoms whenever I want</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. I could use a condom correctly</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. I wouldn't mind going to the school nurse or clinic to get condoms</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. I can see myself buying condoms at a gas station or store</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. I would use a condom even if I were already using another kind of birth control</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

The next section of the survey will ask you to answer questions about your behavior. Answering the questions based on what you really do will help to improve health education for young people like yourself.

Please circle your answer for each of the following questions

The next 4 questions ask about violence-related behaviors.

1. Have you ever carried a weapon, such as a gun, knife, or club?
   A. Yes
   B. No

2. Have you ever been in a physical fight?
   A. Yes
   B. No

continued on next page
3. Have you ever been in a physical fight in which you were hurt and had to be treated by a doctor or nurse?
   A. Yes
   B. No

4. During the past 12 months, did your boyfriend ever hit, slap, or physically hurt you?
   A. Yes
   B. No
   C. I haven't had a boyfriend in the last 12 months.

**The next 8 questions ask about tobacco use.**

5. Have you ever tried cigarette smoking, even one or two puffs?
   A. Yes
   B. No

6. How old were you when you smoked a whole cigarette for the first time?
   A. I have never smoked a whole cigarette
   B. 8 years old or younger
   C. 9 years old
   D. 10 years old
   E. 11 years old
   F. 12 years old
   G. 13 years old or older

7. During the past **30 days**, on how many days did you smoke cigarettes?
   A. 0 days
   B. 1 or 2 days
   C. 3 to 5 days
   D. 6 to 9 days
   E. 10 to 19 days
   F. 20 to 29 days
   G. All 30 days

8. During the past **30 days**, on the days you smoked, how many cigarettes did you smoke **per day**?
   A. I did not smoke cigarettes during the past 30 days
   B. Less than one cigarette per day
   C. 1 cigarette per day
   D. 2 to 5 cigarettes per day
   E. 6 to 10 cigarettes per day
   F. 11 to 20 cigarettes per day
   G. More than 20 cigarettes per day

continued on next page
9. During the past 30 days, how did you usually get your own cigarettes? (Select only one response.)
   A. I did not smoke cigarettes during the past 30 days
   B. I bought them in a store such as a convenience store, supermarket, discount store, or gas station
   C. I bought them from a vending machine
   D. I gave someone else money to buy them for me
   E. I borrowed (or bummed) them from someone else
   F. A person 18 years old or older gave them to me
   G. I took them from a store or family member
   H. I got them some other way

10. Have you ever smoked cigarettes daily, that is, at least one cigarette every day for 30 days?
    A. Yes
    B. No

11. During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen?
    A. 0 days
    B. 1 or 2 days
    C. 3 to 5 days
    D. 6 to 9 days
    E. 10 to 19 days
    F. 20 to 29 days
    G. All 30 days

12. During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?
    A. 0 days
    B. 1 or 2 days
    C. 3 to 5 days
    D. 6 to 9 days
    E. 10 to 19 days
    F. 20 to 29 days
    G. All 30 days

The next 2 questions ask about drinking alcohol. This includes drinking beer, wine, wine coolers, and liquor such as rum, gin, vodka, or whiskey. For these questions, drinking alcohol does not include drinking a few sips of wine for religious purposes.

13. Have you ever had a drink of alcohol, other than a few sips?
    A. Yes
    B. No

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Appendix A, Continued
Preconception Health Survey

14. How old were you when you had your first drink of alcohol other than a few sips?
   A. I have never had a drink of alcohol other than a few sips
   B. 8 years old or younger
   C. 9 years old
   D. 10 years old
   E. 11 years old
   F. 12 years old
   G. 13 years old or older

The next 2 questions ask about marijuana use. Marijuana also is called grass or pot.

15. Have you ever used marijuana?
   A. Yes
   B. No

16. How old were you when you tried marijuana for the first time?
   A. I have never smoked a whole cigarette
   B. 8 years old or younger
   C. 9 years old
   D. 10 years old
   E. 11 years old
   F. 12 years old
   G. 13 years old or older

The next 4 questions ask about other drugs.

17. Have you ever used any form of cocaine, including powder, crack, or freebase?
   A. Yes
   B. No

18. Have you ever sniffed glue, breathed the contents of spray cans, or inhaled any paints or sprays to get high?
   A. Yes
   B. No

19. Have you ever taken steroid pills or shots without a doctor's prescription?
   A. Yes
   B. No

continued on next page
20. Have you ever taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) without a doctor’s prescription?
   A. Yes
   B. No

The next 4 questions ask about sexual intercourse.

21. Have you ever had sexual intercourse?
   A. Yes
   B. No

22. How old were you when you had sexual intercourse for the first time?
   A. I have never had sexual intercourse
   B. 8 years old or younger
   C. 9 years old
   D. 10 years old
   E. 11 years old
   F. 12 years old
   G. 13 years old or older

23. With how many people have you ever had sexual intercourse?
   A. I have never had sexual intercourse
   B. 1 person
   C. 2 people
   D. 3 people
   E. 4 people
   F. 5 people
   G. 6 or more people

24. The last time you had sexual intercourse, did you or your partner use a condom?
   A. I have never had sexual intercourse
   B. Yes
   C. No

The next 5 questions ask about body weight

25. How do you describe your weight?
   A. Very underweight
   B. Slightly underweight
   C. About the right weight
   D. Slightly overweight
   E. Very overweight

continued on next page
26. Which of the following are you trying to do about your weight?
   A. Lose weight
   B. Gain weight
   C. Stay the same weight
   D. I am not trying to do anything about my weight

27. Have you ever **gone without eating for 24 hours or more** (also called fasting) to lose weight or keep from gaining weight?
   A. Yes
   B. No

28. Have you ever **taken any diet pills, powders, or liquids** without a doctor’s advice to lose weight or keep from gaining weight? (Do **not** include meal replacement products such as Slim Fast.)
   A. Yes
   B. No

29. Have you ever **vomited or taken laxatives** to lose weight or keep from gaining weight?
   A. Yes
   B. No

**The next 5 questions ask about physical activity**

30. During the past 7 days, on how many days were you physically active for a total of **at least 60 minutes per day**? (Add up all the time you spent in any kind of physical activity that increased your heart rate and made you breathe hard some of the time.)
   A. 0 days
   B. 1 day
   C. 2 days
   D. 3 days
   E. 4 days
   F. 5 days
   G. 6 days
   H. 7 days

31. On an average school day, how many hours do you watch TV?
   A. I do not watch TV on an average school day
   B. Less than 1 hour per day
   C. 1 hour per day
   D. 2 hours per day
   E. 3 hours per day
   F. 4 hours per day
   G. 5 or more hours per day

continued on next page
Appendix A, Continued
Preconception Health Survey

32. On an average school day, how many hours do you play video or computer games or use a computer for something that is not school work? (Include activities such as Xbox, PlayStation, Nintendo DS, iPod Touch, Facebook, and the Internet.)
   A. I do not play video or computer games or use a computer for something that is not school work
   B. Less than 1 hour per day
   C. 1 hour per day
   D. 2 hours per day
   E. 3 hours per day
   F. 4 hours per day
   G. 5 or more hours per day

33. In an average week when you are in school, on how many days do you go to physical education (PE) classes?
   A. 0 days
   B. 1 day
   C. 2 days
   D. 3 days
   E. 4 days
   F. 5 days

34. During the past 12 months, on how many sports teams did you play? (Count any teams run by your school or community groups.)
   A. 0 teams
   B. 1 team
   C. 2 teams
   D. 3 or more teams

The next 2 questions ask about other health-related topics.

35. Has a doctor or nurse ever told you that you have asthma?
   A. I have never had asthma
   B. Yes
   C. No
   D. Not sure

36. Do you still have asthma?
   A. I have never had asthma
   B. Yes
   C. No
   D. Not sure

This is the end of the survey. Thank you very much for your help!