

Evaluation of a Substance Abuse, HIV and Hepatitis Prevention Initiative for Urban Native Americans: The Native Voices Program

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Abstract— Although many community-based prevention interventions are conducted in American Indian and Alaska Native (AI/AN) communities, few studies report the outcomes. This article is a mixed methods outcome evaluation of an HIV/AIDS, hepatitis, and substance abuse prevention intervention for an urban AI/AN community, Native Voices. The study group was composed of 100 youth (ages 13 to 18) who lived in the San Francisco Bay Area. The outcome measures of interest were knowledge, perception of risk, sexual self-efficacy, ethnic identity, and sexual risk behavior. The findings indicate that knowledge, perception of risk, and sexual self-efficacy increased, while no change was shown in measures of ethnic identity and behavior. Findings extended prior research by evaluating the Gathering of Native Americans (GONA) curriculum, a promising intervention designed for AI/AN people.

Keywords— American Indian/Alaska Native, HIV/AIDS, program evaluation, substance abuse, urban environment

The primary purpose of this study is to evaluate the effectiveness of Native Voices, a five-year HIV/AIDS, substance abuse, and hepatitis prevention program for urban AI/AN people living in the San Francisco Bay Area. This

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agency-based program evaluation used a mixed methods approach to measure and interpret outcomes related to substance abuse and sexual risk.

It was hypothesized that the Native Voices program would increase knowledge of HIV/AIDS, hepatitis risk and transmission, sexual self-efficacy, perception of risk for alcohol and other drugs, while decreasing substance use and sexual risk behaviors among participants.

LITERATURE REVIEW

The literature review is organized into three parts. The first reports the problem of HIV/AIDS, hepatitis, and substance abuse in AI/AN communities. The second

is a review of the risks and protective factors related to HIV/AIDS, focusing on AI/AN women, LGBT, and youth subgroups. The third is a review of recommendations for prevention interventions when working with AI/AN populations.

Within the U.S., the HIV/AIDS epidemic disproportionately affects ethnic and racial minority infection rates and life expectancy (CDC 2009; Losina et al. 2009). In 2005, the rate of new infections (per 100,000 persons) was 71.3 in the Black/African American population, 27.8 in the Hispanic/Latino population, 10.4 in the American Indian/Alaska Native population, 8.8 in the White population and 7.4 for Asian and Pacific Islanders (CDC 2008). Overall, racial and ethnic minorities account for over 73% of new HIV infections. To address these disparities, culturally appropriate, community-specific prevention interventions are commonly recommended. These interventions are implemented to increase utilization of services, and to enhance the capacity of local community-based organizations to provide HIV services (Griffith et al. 2010; Gant & Gilbert 2008).

Consistent increases in new HIV diagnoses among AI/AN women highlight the need for increased attention to prevention and treatment in this group, especially among young women age 15 to 39 (Vernon & Jumper-Thurman 2009). Among the reports focused on AI/AN women, a widely mentioned risk factor for HIV transmission is a high prevalence of lifetime trauma. Trauma resulting from interpersonal violence, including intimate partner violence and sexual violence, represents a particularly troubling condition with implications for HIV transmission risk (Vernon & Jumper-Thurman 2009; Evans-Campbell et al. 2006; Saylor & Daliparthi 2005).

The dually oppressed status of gay, lesbian, bisexual, and transgender AI/ANs results in increased historical and lifetime trauma and sociodemographic vulnerabilities among this group, which adversely affect health outcomes (Fieland, Walters & Simoni 2007). Among the HIV/AIDS literature focused solely on GLBT AI/ANs, the topic areas include lifetime trauma, sexual network dynamics and social support deficiencies. Alarming high rates of victimization are found in this subgroup, which particularly among men is associated with risky sexual behavior (Simoni et al. 2006).

Much of the AI/AN substance abuse and HIV literature and most of the published program evaluations have focused on adolescents. Young people in this population are especially vulnerable. Early sexual initiation, high numbers of partners, and substance abuse issues are some of the factors that put Native youth at high risk for negative consequences compared with non-Native youth (Mitchell et al. 2007; Hellerstedt et al. 2006).

Individual level risk factors that contribute to HIV transmission among AI/ANs include high rates of sexually transmitted diseases, alcohol and substance use,

depression, and domestic violence (IHS 2011). Structural risk factors include racism, poverty, poor social conditions, and the legacy of colonialism (Larkin et al. 2007). Duran and Walters (2004) identified several protective factors including traditional health practices and spirituality. The interaction of traditional health practices and spirituality may be expressed in indigenous values, religious rites, and ceremonial practices which contribute to healthy AI/AN communities (Duran & Walters 2004).

HIV and substance abuse prevention interventions should provide a targeted message to a clearly defined target group, and be culturally competent and theory based (Holtgrave et al. 1995). Recommendations for interventions focused on AI/AN youth include skill building, role playing, and other components based on social learning theory and social cognitive theory (Kaufman et al. 2010; Baldwin et al. 1996). Individual risk factors and structural risk factors should be incorporated into prevention programming. Structural risk factors in AI/AN communities include racism and the history of colonialism (Larkin et al. 2007; Duran & Walters 2004).

METHODS

Of the 186 youth reached by the Native Voices interventions, 86 participants (46%) were lost to follow up. Table 1 lists the baseline (and follow up) characteristics of demographic and self-reported past 30 day sex and substance use variables. Participants were asked to select one or more race in a multiple-choice format. The primary recruitment effort took place in conjunction with the planning and implementation of the Gathering of Native Americans (GONA) curriculum. To determine which youth would be invited, the host agency assessed the total number of slots available based on available resources and chaperone capacity, then allocated a number slots to each of the five participating agencies. Youth (ages 13 to 18) were carefully chosen based on established rapport with one or more staff members at each participating agency.

Native Voices interventions for youth and adults were developed with specific recommendations from a comprehensive community-wide needs assessment. The needs assessment added to the planning of this intervention, by confirming the use of components of social learning theory, such as self-efficacy, and by confirming that the local community had an interest in promoting traditional values as a way to prevent unhealthy behavior. Given the history of outside experts imposing foreign values upon this population, the process of engaging the community in the planning process was an important step in addressing colonizing structural forces.

The intervention was the four-day GONA event hosted by Native American Health Center. The GONA is a national-level curriculum developed by tribal leaders under contract with the federal Center for Substance Abuse

TABLE 1
Baseline and Follow-Up Characteristics

Characteristic	Youth (n = 100)	
	Baseline Mean or Percent	Follow-up
Age (Range 12 - 18)	16	16
Ethnicity		
Native American	43	51
Native Hawaiian or other Pacific Islander	11	12
Alaska Native	1	1
White	9	9
Hispanic or Latino	59	58
African American	12	15
Asian	4	5
Other	35	37
Gender		
Male	37	37
Female	62	62
Missing	1	1
Sexual Orientation		
Straight/Heterosexual	94	94
Bisexual	5	5
Gay/Lesbian	0	0
Unsure	1	1
Sex past 30 days (% "No")	67	73
Amount of 30 Day Use (% "No Use")		
Alcohol	62	64
Cigarette	71	68
Marijuana	65	68
Other Drugs	85	84

Prevention (CSAP) as a substance abuse prevention model (Chino & DeBruyn 2006). The GONA curriculum offers skills and knowledge in a way that embraces traditional indigenous cultures and provides a foundation for community advocacy and community capacity building. The four-day GONA curriculum emphasizes skill transfer and community empowerment and is based on traditional AI/AN values such as belonging, mastery, interdependence, and generosity (Chino & DeBruyn 2006). The history of the Native American Health Center's Youth Services Program and its integration of GONA has been previously reported (Aguilera & Plasencia 2005).

Procedure

The outcome measures of interest are knowledge, perception of risk, sexual self-efficacy, ethnic identity, and sexual risk behavior. Selected scales and items were taken from the National Minority Substance Abuse Prevention Initiatives instrumentation (SAMHSA 2006). A sequential explanatory strategy was used to guide analyses of

the questionnaire data. This strategy was chosen to gain the insider's perspective on phenomena not captured by questionnaires and to employ community participation in analyzing quantitative results and assessing the strengths and weaknesses of the intervention. Sequential explanatory strategy is characterized by the collection and analysis of quantitative data, which informs the collection and analysis of qualitative data (Creswell 2008). Descriptive statistics from the raw data were used to help staff design questions for a series of semi-structured qualitative interviews with a subsample of the original respondents.

RESULTS

The primary outcome measures were knowledge, perception of risk, sexual self-efficacy, ethnic identity, and sexual risk behavior. Wilcoxon signed-rank tests for continuous data and McNemar's test for categorical data were used to determine significant change from pretest to posttest. Wilcoxon sign-rank tests were used in place of paired-samples t-tests based on violations of the normal distribution of data on all continuous variables of interest. McNemar's test was chosen for individual items based on a need for hypothesis tests that could assess change in dichotomized (e.g., number of participants who chose "great risk" on a Likert scale versus any other choice) categorical variables from pretest to posttest. Finally, we analyzed interview data to identify and integrate themes.

We first ran Wilcoxon signed-rank tests to see whether knowledge, self-efficacy and ethnic identity changed after our intervention. Tests showed significant change in both knowledge variables and the sexual self-efficacy variable from pretest to six month posttest (Table 2). Test results on the ethnic identity (EI) variable were nonsignificant, suggesting that the intervention did not elicit a significant change in EI over the six-month follow-up period.

Next, we ran McNemar's test to see whether perception of substance use risk changed. Prior to the intervention, 55% (n = 55) of participants reported "great risk" when asked how much people risk harming themselves when they smoke one or more packs of cigarettes per day, compared to 76% of participants reporting "great risk" at follow-up (n = 76). McNemar's test results indicated that change in perceived cigarette risk was significant: $\chi^2(1) = 5.14, p = .02$. Similarly, 37% reported "great risk" when asked the same question regarding alcohol (five or more drinks once or twice a week) at pre-intervention versus 63% at follow-up. McNemar's test results indicate change in perceived alcohol risk was significant: $\chi^2(1) = 8.76, p = .003$. When asked about marijuana risk (smoking once or twice a week) 25% responded "great risk" at pre-intervention versus 59% at follow-up. McNemar's test results indicate change in perceived marijuana risk was significant: $\chi^2(1) = 20.83, p < .0001$.

TABLE 2
Results from Self-Report Questionnaires and Wilcoxon Signed-Rank
Nonparametric Tests Contrasting Pre-Intervention with Six-Month Follow-Up

Variable	Range	Pre- intervention		Follow-up		Z	p
		M	SD	M	SD		
HIV/AIDS Knowledge	0–9	5.97	2.29	6.82	2.04	-3.26	0.001
Hepatitis Knowledge	0–8	3.54	2.13	4.87	2.50	-4.02	0.0001
Sexual Self Efficacy	1–4	3.39	.59	3.69	.47	-4.54	<.0001
Ethnic Identity	1–4	2.95	.62	2.98	.71	-0.56	.58

Note: Wilcoxon’s Z statistic with exact one-tailed probability.

TABLE 3
Behavior Variables

	Baseline	Follow-up
Last three months, sex while drunk or high? (% “no”)	89	89
Last 30 days, use condoms? (% no/no sex past 30 days)	71	68
In the next three months how likely to practice safe sex? (% “very likely” or “not intending to have sex”)	70	64

Finally, we used McNemar’s test to analyze behavior. Results indicate nonsignificant change in all three sexual risk behavior variables (Table 3).

QUALITATIVE ANALYSIS

The analysis of the transcripts revealed several inter-related themes and insights into data interpretation and program planning. A full analysis is planned for a future article.

Quantitative data interpretation questions were chosen based on initial observations from descriptive statistics. Participants were asked how they would explain positive change, and why they thought that the intervention did not seem to affect behavior. When asked how they would explain positive change, the responses varied. One response attributed positive change to the adults’ ability to communicate on their level: “I guess the way they explained it to make it more simple to them instead of using big words.”

Another respondent spoke about the positive effects of simply being in an environment where drugs and alcohol are not present: “It’s probably because, like at GONA you get to learn about how it feels to not do that, to not do the

drugs and alcohol but to just sit back and just get to really know yourself.”

When asked why the respondents thought that behavior did not change, one attributed it to natural biological drives: “I think, because most of my friends, no, a lot of people who go, they’re like, like, just a pool of hormones like they’re just wild and they want to try all kinds of stuff.”

Another youth spoke about “the rush” and described excitement or physiological arousal that comes from taking risks or acting impulsively: “It’s because they get like, the rush, you know. So they don’t think about the effects of what is going to happen. So they just do it.”

DISCUSSION

It was hypothesized that, as a result of the GONA intervention, youth participants would increase their knowledge of HIV/AIDs and hepatitis risks and transmission, perceive alcohol and other drugs as more harmful, increase their sexual self efficacy, increase their sense of ethnic identity, and decrease risky sexual behavior. The data suggest that knowledge, perception, and self-efficacy increased as hypothesized. Risky sexual behavior associated with HIV/AIDS transmission failed to significantly decrease over the program period.

Increased knowledge scores may indicate that the GONA was successful in remedying misconceptions and lack of knowledge among the youth in a way that lasted over the four to six month follow-up period. Likewise, the data suggest that presenters at GONA were successful in delivering their message of alcohol and other drugs as harmful, and skill development and knowledge building components succeeded in increasing sexual self-efficacy. However, despite these positive changes, behavior did not significantly change.

Existing literature does not suggest that increased knowledge of risks and transmission alone will necessarily significantly affect the sexual behavior of adolescents. From a social learning perspective, increased knowledge

may be helpful if it serves to increase expectancies about the consequences of one's own actions or to increase the expectancies about one's competence (i.e. self efficacy) to perform the behavior needed to influence outcomes (Rosenstock, Strecher, & Becker 1988). Self efficacy was increased in this sample; however, knowledge increases were aimed at misconceptions around risks and transmissions but not at expectations about consequences.

Ethnic identity did not increase suggesting that the GONA event did not create a stronger Native American identity among the youth. This finding may reflect the recruitment strategies of the GONA from Native American agencies. It is possible that the youth who are involved in such agencies and who have an established rapport with a staff member are already high identifying Native youth. The recruitment strategies may suggest that the youth who were recruited were not the highest risk individuals from among the population. Staff members are hesitant to include youth who are likely to be disruptive or bring substances into the event. This practice provides greater assurance that the event will be harmonious and meaningful to those who attend, but it selects out the higher risk youth with, perhaps, the greatest need. Sexual risk behavior did not change, but without including the highest risk participants, the amount of sexual risk behaviors at baseline was low. In each variable (e.g., Did you use condoms the last time you had sex?) the number of youth who reported the highest risk response was less than 15% at baseline.

Limitations

This study was a community-based program evaluation with a single group design. Causal inference is not as strong as it would have been with a control group design. In addition the high number lost to follow-up represents a potential for bias if those youth who dropped out of the study are different than those who were available at posttest. Sampling bias is also a threat to the validity of the study and has likely led to selection of lower risk youth compared to those who were not recruited. Additionally, based on self-report data, the program did not appear to reach a significant number of GLBT individuals.

Implications for Practice

The GONA has become an annual event at the Native American Health Center. Data collected and analyzed in the current study will be valuable in forming future GONA events but future evaluation efforts should rethink which variables will be measured, and how they will be operationalized. The GONA is a cultural event with embedded substance abuse and health education. From a social learning perspective, the intention of the program is to promote expectancies related to consequences and competence, and to develop incentives to behave in a way that promotes good health.

From a post-colonial perspective, the promotion of traditional values related to health practices is key to affecting healthy behavior. Healthy traditional values may be expressed in spiritual practices, traditional foods, ceremonial practices, and identity practices. In addition, building community capacity, social capital and empowerment are stated goals of the program and are important to strive for. In the context of the GONA, community capacity can be measured in terms of skills development. Social capital is being built by introducing youth from neighboring communities to one another and by providing a space and environment that promotes bonding. This builds a sense of connection to peers, family of origin, AI/AN societies, and the larger community often lost in cycles of repressive dynamics within the family and community. Empowerment should be looked at in terms of learning about oppressive power and how they inherit and participate unknowingly in such practices, by confronting repressive (or oppressive) power through learning and practicing skills that empower them, and building power through ongoing practices of addressing perceptions and experiences of powerlessness. These concepts should not just be viewed as residual effects of the program, but be more thoroughly embedded as goals and measured as outcomes of interest.

The analysis of the interview transcripts added some depth to the data interpretation, and provided valuable advice to improving the GONA. Youth suggestions should be included in future program planning, and increased community participation in evaluation activities encouraged. For example, throughout this evaluation, the authors along with NAHC staff, planned the evaluation activities, chose the variables based on the available literature, conducted qualitative interviews, and analyzed data. Community members were involved in the planning and implementation of the intervention, but only minimally involved in the evaluation. This can be seen as a missed opportunity to continue to build community capacity, promote empowerment, and address power dynamics.

CONCLUSION

Post-colonial theory is not an attempt to recapture a romanticized precontact past, nor is it a rejection of western science. Rather, post-colonialism is a rejection of the notion that knowledge derived from western science is superior to indigenous ways of knowing, and is a way to bring traditional values into the present. It respects scientific methods as well as indigenous knowledge systems, and seeks balance in this regard, rather than conflict (Duran & Walters 2004).

This study reviewed the literature, reported the planning, and analyzed data as well as highlighted the importance of community participation. It was conducted to meet the need to produce and disseminate measurable results in community-based interventions. The public

health implications are in the promotion and ability to gather data, and in showing measureable results in a hard-to-reach population where health disparities continue. Good public health practice demands that practitioners and

evaluators be accountable to the public that they serve by measuring and reporting outcomes, while using sound ethical judgment when working with marginalized groups.

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