
Native STAND (Students Together Against Negative Decisions): Evaluating a School-Based Sexual Risk Reduction Intervention in Indian Boarding Schools

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Abstract

Native STAND is a 29-session curriculum that covers a range of sexual and reproductive health topics as well as important decision-making, communication, and peer-education skills. It is based on an intervention that was designed and evaluated among rural youth in the southern US and found to increase condom self efficacy, human immunodeficiency virus (HIV) infection risk behavior knowledge, frequency of conversations with peers about birth control and sexually transmitted infections (STIs), and consistent condom use among participating 10th-grade students. In 2008, Native STAND was adapted by a national group of American Indian and Alaska Native (AI/AN) partners, and activities were tested with small groups of youth from the target audience.

To more fully evaluate the adapted curriculum in Indian Country, 80 students attending four residential Bureau of Indian Education (BIE) boarding schools were selected by fellow students to be trained as peer educators using the Native STAND curriculum. The curriculum was delivered in 1½-hour classes by two or three adult staff at each school who were trained to facilitate the Native STAND curriculum. A comprehensive pre- and post- computer-assisted self interview (CASI) survey was administered to participating students to assess changes in knowledge, attitudes, intentions, behaviors, and skills over time. At the end of the program, focus groups and key informant interviews were also carried out with separate groups of students, facilitators, and school staff not directly involved in the program to identify programmatic strengths and weaknesses and inform final program revisions.

These analyses reveal that, to varying degrees, positive outcomes and impacts were experienced at all four schools. Recommendations also emerged from this process that can guide future use of the program. Additional evaluation will be needed to determine to what extent the newly trained peer educators take on their roles as peer educators and what, if any, impact this has on the social norms surrounding sexual health among these students and at these schools.

Introduction

An American Indian/Alaska Natives (AI/AN) exhibits both great strengths and issues of concern. Enculturation, relationships that foster belonging (Framboise et al., 2006; Whitbeck et al., 2002), respect for the wisdom of tribal elders, and positive role models are associated with AI/AN resiliency (Gilgun, 2002). In contrast, the AI/AN teen birth rate increased more than any other racial or ethnic population between 2005 and 2007, and one fifth of Native teen girls now give birth before age 20 (Hamilton et al., 2009). To date, no well-developed and rigorously evaluated sexual health programs targeting AI/AN youth have been reported. (A baseline analysis of a program designed for AI/AN middle school youth is available: Kaufman et al., 2010.

Description of Program

Native STAND is a 29-session curriculum designed to address healthy decision-making holistically and develop skills associated with maintaining and promoting sexual health and becoming a peer educator. Session topics included: culture and tradition; sexual diversity; self-acceptance and body image; healthy relationships; reproductive health; pregnancy and parenting; STI/HIV; birth control methods; personal goals and values; drugs and alcohol; negotiation and refusal skills; stages of change; and effective communication. All sessions employ active learning methods and are designed to be held once per week and last 1½ to 2 hours. Upon completion of the curriculum, Native STAND peer educators engage in health-promoting conversations with others. After training, each site forms a peer education club to continue learning and provide feedback.

Native STAND is based on an effective intervention that was designed for rural youth in the southern US (Smith & DiClemente, 2000). Both the STAND program and the adapted Native STAND are based on the Transtheoretical Model of Change (Prochaska & DiClemente, 1982, 1983, 1992) and the Diffusion of Innovations Model (Rogers, 2003). Native STAND was adapted for AI/AN youth by a working groupcommittee that included specialists in curriculum development, HIV/STI prevention, and evaluation as well as representatives of the National Coalition of STI Directors, Mercer University, the Indian Health

Table 1. Demographics and communication with peers and adults			
Variable	n (%*)		
	Pre-survey N=70	Post-survey N=34	Pre-post Retention %
Age			
≤15	27 (49.1)	4 (11.8)	
≥16	28 (50.9%)	30 (88.2)	
Missing	15	0 (0)	
Gender			
Male	22 (40.0)	12 (35.3)	
Female	33 (60.0)	22 (64.7)	
Transgender	0 (0)	0 (0)	
Missing	15	0 (0)	
Sexual orientation			
Straight	44 (83.0)	28 (82.4)	
Gay/lesbian	1 (1.9)	1 (2.9)	
Bisexual	4 (7.6)	3 (8.8)	
Not sure	2 (3.8)	1 (2.9)	
Refuse	2 (3.8)	1 (2.9)	
School of attendance			
School #1	17 (24.3)	8 (23.5)	47.1%
School #2	20 (28.6)	12 (35.3)	60.0%
School #3	17 (24.3)	7 (20.6)	41.2%
School #4	16 (22.9)	7 (20.6)	43.8%
Spoke with a peer about sexual health topic in past 3 months (no. of times)			
None	30 (56.6)	12 (48.0)	
One or more times	22 (41.5)	12 (48.0)	
Refuse	1 (1.9)	1 (4.0)	
Missing	17	9	
Spoke with an adult about sexual health topic in past 3 months (no. of times)			
None	43 (79.6)	24 (88.9)	
One or more times	10 (18.5)	2 (7.4)	
Refuse	1 (1.9)	1 (3.7)	
Missing	16	7	
* Among those who responded to the question (i.e., missing data excluded from denominator)			

Table 2. Description and results of composite knowledge, attitude, and motivation survey measures

Domain	No. of items	Scale anchors <i>Benchmark value</i>	Composite index mean (SD)		Cohen's d
			Pre-survey N=70	Post-survey N=34	
Knowledge					
STI/HIV prevention knowledge	10	True/False/Don't Know <i>Average proportion of questions correct</i>	51.4% (0.28)	70.6% (0.21)	0.78
Reproductive health knowledge	10	True/False/Don't know <i>Average proportion of questions correct</i>	48.2% (0.21)	65.9% (0.23)	0.80
Healthy relationships knowledge	10	True/False/Don't know <i>Average proportion of questions correct</i>	65.1% (0.31)	77.9% (0.28)	0.43
Attitudes					
Native Pride	9	1 (strongly disagree) to 5 (strongly agree)	3.34 (0.35)	3.34 (0.32)	0
Perceived life chances	11	1 (very low) to 5 (very high)	3.01 (0.62)	3.02 (0.53)	0.02
Self esteem	10	1 (strongly disagree) to 4 (strongly agree)	3.02 (0.57)	3.07 (0.59)	0.09
Abstinence	3	1 (strongly disagree) to 4 (strongly agree)	3.59 (0.47)	3.58 (0.50)	-0.02
Refusal skills regarding sex	7	1 (I definitely can't say no) to 5 (I definitely can say no)	3.10 (0.64)	3.19 (0.62)	0.14
Condom attitude	22	1 (strongly disagree) to 5 (strongly agree)	3.86 (0.46)	3.96 (0.55)	0.20
Condom self-efficacy	9	1 (a lot of a problem) to 5 (no problem)	2.72 (0.89)	3.02 (0.68)	0.38
Partner communication					
Self-efficacy	6	1 (very hard) to 4 (very easy)	2.06 (0.60)	2.13 (0.59)	0.12
Frequency (among those w/ partner in the past 3 months) [§]	5	1 (never) to 4 (7 or more times)	1.51 (0.76)*	1.55 (0.74)	0.05
Motivation to avoid pregnancy & STIs					
Condom attitude†	9	1 (very untrue) to 5 (very true)	2.82 (0.97)†	3.19 (0.71)	0.44†
Condom use intentions	4	1 (very untrue) to 5 (very true)	2.88 (0.93)	3.26 (0.73)	0.45
Motivation to be a role model	4	1 (strongly disagree) to 4 (strongly agree)	3.47 (0.51)	3.49 (0.46)	0.04
HIV peer educator self-efficacy	9	1 (not at all confident) to 4 (very confident)	2.17 (0.66)	2.31 (0.52)	0.24
STI/HIV prevention knowledge	10	True/False/Don't Know <i>Average proportion of questions correct</i>	51.4% (0.28)	70.6% (0.21)	0.78
Reproductive health knowledge	10	True/False/Don't know <i>Average proportion of questions correct</i>	48.2% (0.21)	65.9% (0.23)	0.80
Healthy relationships knowledge	10	True/False/Don't know <i>Average proportion of questions correct</i>	65.1% (0.31)	77.9% (0.28)	0.43

[§]This section did not skip respondents with no current partner; summary statistic not reliable since it is unclear how they responded

†An error in response options on the pre-survey makes this measure unreliable

Service/Centers for Disease Control and Prevention, and various AI/AN tribes and other partners. Feedback on selected sessions was obtained from various groups of AI/AN youth as those sessions were being developed. A final draft of all curriculum materials will be available on the internet.

Pilot Study

During the 2009-2010 school year, the Native STAND curriculum was piloted at a convenience sample of four residential Bureau of Indian Education (BIE) boarding schools located throughout the United States. At the end of the year before the program began, 20 ninth-graders were selected to participate using a self and peer nomination process that identified peer opinion leaders and provided coverage of the largest possible number of cliques. At each school, the program was facilitated by two or three staff members (teachers or counselors) who attended 3½ days of training. Adult facilitators and project staff participated in monthly conference calls to answer questions, manage logistics, ensure fidelity, and maintain motivation and commitment.

Evaluation Results

Quantitative Data

To assess changes in student knowledge, attitudes, beliefs, intentions, behaviors, and skills, a computer-assisted self interview (CASI) survey was administered at two timepoints. The survey included 20 multi-item measures (see Table 2). Wherever possible, the survey questions were drawn and/or adapted from existing measures that have been validated and shown to be reliable among youth (including De Hart & Birkimer, 1997; Fisher & Fisher, 2002; Jessor et al., 1990; Maynard et al., 2005; Smith, Dane, Archer, Devereaux, & Katner, 2000). (More detailed descriptions of the evaluation procedures are available from the authors.)

Youth Demographics

Seventy students completed the pre-training survey; 34 completed the post-survey. Basic demographic information describing the participants is provided in Table 1. At the start of the program, about half of the students were 15 years old or younger, and more female students (65% of those completing the program) participated in the program than males.¹ Over 80% of the students reported their sexual orientation as straight (20% as gay or bisexual), and over 60% reported having had sex in their lifetime.

Communication With Peers and Adults

On the pre-survey, 41.5% of students reported that they had talked with a peer about a sexual health topic in the

¹ Pre-survey demographic data were missing for 15 students due to internet connection difficulties.

past three months versus 48.0% on the post-survey, an absolute difference of 6.5%, Cohen's $d = 0.16$ (data not reported in tables) (Cohen, 1988). Post-survey students reported an average of five instances of speaking with a peer about a sexual health topic in the past three months (range = 1 to 10). Students spoke very infrequently with adults about sexual topics in the same time frame (average < 1; Pre 18.5%, Post 7.4%; absolute difference -11.1%, Cohen's $d = -0.55$).

Changes in Knowledge, Attitudes, and Behaviors

As shown in Table 2, large pre-survey to post-survey increases of mean scores in STI/HIV prevention knowledge and reproductive health knowledge were observed with absolute increases of 19.2% and 17.7% from pre-survey, respectively. These increases were of large practical significance (Cohen's $d = .78$; Cohen's $d = .80$, respectively). Similarly, the increase in knowledge of healthy relationships was of moderate practical significance (Pre 65.1%; Post 77.9%; absolute difference 12.8%; Cohen's $d = .43$) as were increases in mean scores for intention to use condoms to avoid pregnancy and STIs (Pre 93%; Post 73%; Cohen's $d = .45$).

Changes in two study attitude-related variables also achieved moderate practical significance, including condom self efficacy (Cohen's $d = 0.38$) and condom attitudes as measured within motivation (Cohen's $d = .44$). Condom attitudes measured by a second scale showed only small practical significance (Cohen's $d = 0.20$). No other significant changes were noted in other variables in this domain.

No significant differences were observed in Native pride, perceived life chances (perceived likelihood of future life success: Jessor et al., 1990), or self-esteem. Similarly, there were no significant changes in motivation to be a role model or in self-efficacy for being a HIV peer educator.

As shown in Table 3, 65% of students at post-survey reported they had had some form of sexual intercourse (from 62.3% at pre-survey)—almost twice the 32% of ninth-graders among all races who reported ever having sex in the 2009 YRBS (CDC, 2010). Of these, almost all reported having vaginal sex; 27% reported having had anal sex; and 59% had ever given and/or received oral sex. The proportion who had ever been tested for HIV also increased (20% to 29%), but the percentage of students who reported having been tested for other STIs remained fairly constant (26% vs. 24%). One in five of the female students reported having ever been pregnant. No STI diagnoses were reported. Although Cohen's d for change in TTM staging was only .02 (data not shown), the number of subjects on which we were able to obtain this value was quite small. There does appear to be a trend moving more Native-STAND students from lower to higher TTM

Table 3. Personal sexual behavior (selected measures)

Variable	n (%)	
	Pre-survey (N=70)	Post-survey (N=34)
Ever had sex		
Yes	33 (62.3)	22 (64.7)
No	16 (30.2)	11 (32.4)
Refuse	4 (7.6)	1 (2.9)
Missing	17	--
Ever had vaginal sex*		
Yes	29 (87.9)	21 (95.5)
No	2 (6.1)	1 (4.6)
Refuse	2 (6.1)	0 (0)
Missing	19	--
Ever had anal sex*		
Yes	4 (13.8)	6 (27.3)
No	24 (82.8)	16 (72.7)
Refuse	1 (3.4)	0 (0)
Missing	21	--
Ever had oral sex*		
Yes	19 (57.6)	13 (59.1)
No	13 (39.4)	9 (40.9)
Refuse	1 (3.0)	0 (0)
Missing	19	--
Ever been pregnant (female)*		
Yes†	3 (17.7)	3 (20.0)
No	14 (82.4)	12 (80.0)
Missing	18	--
Ever gotten someone pregnant (male)*		
Yes	0 (0)	1 (16.7)
No	11 (91.7)	3 (50.0)
Don't know	1 (8.3)	1 (16.7)
Refuse	0 (0)	1 (16.7)
Missing	18	--
Current sexual behavior safety perception**		
Very safe or safe	44 (81.5)	29 (85.3)
Not sure	5 (9.3)	1 (2.9)
Not very or not at all safe	3 (5.6)	2 (5.9)
Refuse	2 (3.7)	2 (5.9)
Missing	16	--
Ever been tested for HIV		
Yes	11 (20.4)	10 (29.4)
No	42 (77.8)	23 (67.6)
Don't know	0 (0)	0 (0)
Refuse	1 (1.9)	1 (2.9)
Missing	16	--
Ever been tested for STIs		
Yes	14 (25.5)	8 (23.5)
No	40 (72.7)	25 (73.5)
Don't know	1 (1.8)	0 (0)
Refuse	0 (0)	1 (2.9)
Missing	15	--
Ever been told you have STI		
Yes	0	0
No	15 (100)	8 (100)
*Denominator adjusted for skip patterns		
†Responses to "age at first pregnancy": 14, 15, and "refuse" on pre-survey; 16, "refuse", and missing on post		
** This section did not skip respondents with no personal sex history.		

Table 4. Alcohol and drug use, bullying, and abuse history (selected measures)

Variable	n (%)	
	Pre-survey (N=70)	Post-survey (N=34)
Alcohol and drug use		
Cigarettes, ever used	49 (87.5)	30 (88.2)
Alcohol, ever used	46 (79.3)	29 (82.9)
Marijuana, ever used	52 (85.2)	29 (85.3)
Cocaine, ever used	9 (15.5)	6 (17.6)
Glue/Paint/Aerosols, ever used	19 (32.8)	15 (44.1)
Heroin, ever used	0 (0)	0 (0)
Methamphetamines, ever used	3 (5.2)	4 (11.8)
Ecstasy, ever used	6 (10.2)	1 (2.9)
Needle to inject any illegal drug, ever used	0 (0)	1 (2.9)
Hallucinogen, ever used	7 (11.9)	3 (8.8)
Pills without a prescription, ever used	24 (40.7)	12 (35.3)
Bullying and abuse history		
Been bullied, past year	11 (18.6)	3 (8.8)
Physically abused, past year	12 (20.3)	9 (26.5)
Sexually abused, ever	8 (12.9)	4 (12.1)
*Denominator adjusted for skip patterns		
†Responses to "age at first pregnancy": 14, 15, and "refuse" on pre-survey; 16, "refuse", and missing on post		
** This section did not skip respondents with no personal sex history.		

stages.

The lifetime use of cigarettes, alcohol, and marijuana was high among survey respondents at both time points (Table 4). Approximately 19% of pre-survey respondents reported having been bullied in the past year; this proportion decreased to 9% at the time of the second assessment. Twenty and 27% of pre- and post-survey respondents, respectively, reported physical abuse by a parent, guardian, or intimate partner in the past year.

Evaluation Results

Qualitative Data

At each school, Native STAND graduates and faculty/staff not involved in the program participated in separate focus groups led by a project staff interviewer and a field note taker. A school administrator and each adult program facilitator were interviewed individually. Focus groups and interviews were conducted within two weeks of the completion of training and were audio-recorded and transcribed. Adult program facilitators completed fidelity forms after each Native STAND session. Field notes and transcripts from the audio recordings of focus groups and interviews were submitted to content analysis.

As described previously, the study design included numerous focus groups and personal interviews. Analysis of both these data and the fidelity forms will appear in a forthcoming report. A few quotations are provided below as evidence of the positive trends in these data:

"Oh, no, I never used to talk to my friends about their relationships. But now it's ...like (this guy) I'm always helping him out..." –Peer educator

"I tell her, 'You're like a really young girl, you're really nice. I know you got respect and trust and stuff like that. You shouldn't be getting treated like that, you deserve a lot better.'" –Peer educator

"I really liked the fact that this was a program for Native American students, which we don't find a lot of. That it was trying at least to work down their cultural road, and trying to help them through their own system that they have." –Facilitator

Evaluation Results

Summary

Data collected here corroborate previous research findings that reveal AI/AN youth are at increased risk in a range of variables—even the youth selected for this study as opinion leaders in sexual matters. At pre-survey, almost two thirds of this group of tenth-graders reported having had vaginal intercourse—almost twice the rate among similarly aged youth in a national sample. One in five had been tested for HIV, and one in five of the female students reported having ever been pregnant. More than 80% ever used alcohol and marijuana; 33% ever used glue/paint/aerosols; 41% ever used prescription pills; and 16% ever used cocaine. Approximately 90% reported being bullied/physically abused in the past year. Over-

all, the qualitative data strongly suggest that the Native STAND intervention was well received at all four sites by students, facilitators, and school administrators who all recognized the program was addressing critical gaps in sexual health education on campus. Native STAND students demonstrated practically significant improvements in knowledge, attitudes, skills, and behavioral intentions. Improvements of varying significance were noted in several areas.² Increases of large practical significance were observed in AIDS risk behavior knowledge and reproductive health knowledge as well as communication with adults about a sexual health topic. Improvements of moderate practical significance were observed in knowledge of healthy relationships, intentions to use condoms, attitudes toward condom use, and self efficacy in using condoms. Improvements of small practical significance (approximating $d = 0.2$) were obtained in communication with peers about a sexual health topic, peer educator self efficacy, and a second measure of attitudes toward condom use. (A summary of perceived limitations of the study is available from the authors.)

The impacts of the Native STAND program are just beginning to take root and should continue to grow as new students are trained and past graduates take on their new roles as student peer educators. The energy and enthusiasm of this first group of students is already enticing freshmen to join next year (even without advertising). More systematic changes in social norms and behavior should be expected after the program becomes fully imbedded at the school. Ideally, future studies will continue to evaluate the program to see how peer educators take what they learned and apply it at their individual schools.

Recommendations for Adaptation

The following list of core strategies/elements was produced by the project staff to guide future implementation and adaptation. (An expanded list is available from the authors.) Native STAND:

- Promotes both sexual abstinence and risk reduction.
- Focuses on both pregnancy and STI/HIV prevention.
- Is teen-centered, focusing on empowerment and mutual support.
- Promotes skills development (e.g., communication, negotiation, refusal, assertiveness, contraceptive use) with practice and feedback.
- Teaches youth to initiate risk reduction conversations with friends, family members, and other acquaintances.

- Uses active learning techniques.
- Selects peer educators through a peer nomination process.³

Keys to success identified by pilot-study facilitators included using the clique analysis for selecting a truly effective and diverse group while using some adult input as well; having a consistent meeting time and location; widely providing information about the program within the school; providing adequate time for leaders to prepare; and extensive training of facilitators.

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² Reports detailing changes at individual schools were prepared for internal use by each participating school.

³ If a project is primarily interested in the impact on the actual peer educator—and not diffusion to the broader community—it may use a different selection process than the peer nomination one described.

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