



Native American women and AIDS-preventive behavior : a test of the information-motivation-behavioral skills model
by Dakota Dawn Syvrud Meeks

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Applied Psychology
Montana State University
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Abstract:

Native American women are at high risk for exposure to the AIDS virus. J. Fisher and Fisher's (1992) Information-Motivation-Behavioral skills (IMB) model has been found to generalize to high-risk populations such as homosexual men and college students. However, its generalizability to the Native American population remains unknown. It was predicted that the IMB model would generalize to the target population of Native American women. A path analysis was conducted on data from an intervention study designed from prior research on minority women's safer-sex knowledge, behavior, and attitudes (Hobfoll, Jackson, Lavin, Britton, & Shepherd, 1993; 1994). The study was coordinated at Montana State University using four site locations throughout Montana. The purpose of the original study was to examine effects of a culturally sensitive AIDS intervention program compared to a control condition. More data were collected in the original study than was needed for the present study, thus, only a portion of the original data from the pre-intervention questionnaires was analyzed. A total of 160 single Native American women, ages 16 - 29, from various tribal affiliations throughout Montana participated. Partial support was found for the generalizability of the IMB model to Native American women, which will be an essential component to understanding, developing, and implementing future AIDS prevention programs targeted specifically to Native American women.

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A thesis submitted in partial fulfillment
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of

Master of Science

in

Applied Psychology

MONTANA STATE UNIVERSITY
Bozeman, Montana

April 2000

N378
M 4712

APPROVAL

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This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies

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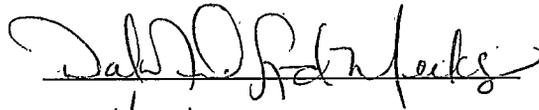
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ABSTRACT

Native American women are at high risk for exposure to the AIDS virus. J. Fisher and Fisher's (1992) Information-Motivation-Behavioral skills (IMB) model has been found to generalize to high-risk populations such as homosexual men and college students. However, its generalizability to the Native American population remains unknown. It was predicted that the IMB model would generalize to the target population of Native American women. A path analysis was conducted on data from an intervention study designed from prior research on minority women's safer-sex knowledge, behavior, and attitudes (Hobfoll, Jackson, Lavin, Britton, & Shepherd, 1993; 1994). The study was coordinated at Montana State University using four site locations throughout Montana. The purpose of the original study was to examine effects of a culturally sensitive AIDS intervention program compared to a control condition. More data were collected in the original study than was needed for the present study, thus, only a portion of the original data from the pre-intervention questionnaires was analyzed. A total of 160 single Native American women, ages 16 - 29, from various tribal affiliations throughout Montana participated. Partial support was found for the generalizability of the IMB model to Native American women, which will be an essential component to understanding, developing, and implementing future AIDS prevention programs targeted specifically to Native American women.

INTRODUCTION

HIV/AIDS Statistics

Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS), the world's deadliest infectious disease, has infected more than 47 million people worldwide and has claimed a total of 2.28 million deaths (World Health Organization, 1998). Since the beginning of the AIDS epidemic, 688,200 cases have been reported in the United States (Center for Disease Control and Prevention [CDC], 1999b). During 1998, the most recent full year of reported cases, 297,135 people were reported to be living with AIDS in the United States, which was a 10% increase from 1997 (CDC, 1999b). Although these statistics are staggering, the startling realization is that such data represent the minimum number of AIDS cases, as not all people with AIDS get tested and not all states participate in the CDC reporting (CDC, 1998).

When examining these data on a global level, it can be easy to distance oneself from the devastating impact of the disease, especially if one is a member of a minority group in which societal norms, at times, do not apply. Unfortunately, denying one's susceptibility to the virus can have disastrous effects. Within the first six months of 1998, the reported AIDS cases among minority groups totaled 15,556, which accounted for 68% of all AIDS cases reported in the United States (CDC, 1999b). Native American women, a subgroup of the minority population, are not exempt from this disease and are at high risk for AIDS.

Native Americans and AIDS

It is important to be aware of the fact that Native Americans, representing 1% of the United States population, are not all the same. The federal government recognizes over 550 tribes, each with its own traditions and culture (Bureau of Indian Affairs [BIA], 1998; Weaver, 1997, 1999). Due to such diversity, one must be cautious when making broad generalizations.

As of December 1998, the CDC received 1,911 reported cases of Native Americans with AIDS, a figure that has more than doubled since December 1993 (CDC, 1999b). Currently, the number of Native Americans living with AIDS is 971, an increase from 559 in 1993 (CDC, 1999b). In addition, STD occurrence has been found to be an indicator of AIDS incidence (Renton & Whitaker, 1994). Syphilis rates have declined for every ethnic group except Native Americans and high rates of chlamydia and gonorrhea exist in many Native American communities (Asetoyer & Rush, 1992; CDC, 1998; Rowell, 1998).

Evidence suggests that the number of AIDS cases in the Native American population is underreported, with the actual number totaling from two to four times what has been reported (Duke, 1992; Kauffman & Joseph-Fox, 1996; Tafoya, 1989; Weaver, 1999). In fact, between June 1990 and August 1992, it was found that the number of Native Americans with AIDS had been underreported by 21% (CDC, 1994; Weaver, 1999). Reasons for the underreporting are varied. Native Americans are at times listed as "other" in statistics reported by ethnic group (Tafoya, 1989; Weaver, 1999). It has

been found that between two-thirds and three-fourths of Native Americans with AIDS were misrepresented as white or Hispanic (National Commission on AIDS, 1992). In addition, some Native Americans who died from AIDS-related causes had other causes of death listed on death certificates to avoid the stigma associated with AIDS (Native American Leadership Commission on Health and AIDS [NALCHA] 1994; Weaver, 1999). The true impact of AIDS within the Native American population has also been blurred by the challenges of conducting research in the Native American communities, which stem from the historically negative images of researchers, difficulty in obtaining permission within the social structure, and former lack of culturally appropriate methodology (Weaver, 1997).

Low socioeconomic status (SES) has been related to a high prevalence and incidence of most chronic and infectious disorders (Adler, Boyce, Chesney, Folkman, & Syme, 1993; Macintyre, 1997; Taylor & Repetti, 1997; Williams & Collins, 1995). AIDS is no exception in the Native American communities (Kauffman & Joseph-Fox, 1996). Compared to all races in the United States, the Native American population has a higher proportion of its people living in poverty, higher unemployment rates (LaFromboise, Berman, & Sohi, 1994; Morbidity and Mortality Weekly Report [MMWR], 1998; National Native American AIDS Prevention Center [NNAAPC], 1994), substandard living conditions (LaFromboise et al., 1994), and younger median age (MMWR, 1998; NNAAPC, 1994). Native Americans have larger families than any other U.S. ethnic group (LaFromboise et al., 1994; Snipp & Aytac, 1990) and 21 to 45% of the households are headed by women (Kauffman & Joseph-Fox, 1996; LaFromboise et al.,

1994; Pollard & O'Hare, 1999; Snipp & Aytac, 1990). In addition, compared to all persons living with AIDS, a higher proportion of Native American's living with AIDS reside in rural areas (MMWR, 1998).

Native American Women and AIDS

Presently, women account for approximately 20% of the people living with AIDS, which has increased from 13.8% in 1992 (CDC, 1999a). Shedding an unfortunate light on the future of the AIDS epidemic, 62% of the 1998 reported HIV infection cases among adolescents (ages 13 - 19) were females, which is a tremendous over representation (CDC, 1999a). Shockingly, over 70% of women diagnosed with AIDS are women of color (CDC, 1999a). Heterosexual contact has been the leading form of exposure for women followed by injection drug use (CDC, 1999a). Although few actual AIDS cases are reported among Native American women (due to the small percentage of the Native American population as compared to the total U.S. population), the rate of AIDS cases among Native American women is twice the rate among white women (CDC, 1999b).

On a macro level, poverty, geographic isolation, and community denial of risk behaviors associated with HIV transmission contribute to an increased risk of AIDS among Native American women. On a micro level, factors that contribute to their high risk of exposure to AIDS include high-risk sexual contact with men who themselves have high-risk histories for AIDS, substance abuse, and domestic violence (Klein, Williams, & Witbrodt, 1999; Weaver, 1999).

Abuse (physical, sexual and emotional) of women and children is prevalent within Native American communities (LaFromboise et al., 1994). Various characteristics associated with abuse are risk factors for AIDS such as multiple partner relationships, early age at first coitus, and partner control of the relationship (Champion & Shain 1998; Greenberg, Magder, & Aral, 1992; Koss & Heslet, 1992; Marx, Aral, Rolfs, Sterk, & Kahn, 1991; Zierler, Feingold, Laufer, & Velentgas, 1991). Lack of personal power in their relationships place women at risk for multiple forms of abuse that increase the risk of HIV infection, including coercion into unwanted sexual acts (Farmer, Connors, & Simmons, 1996; Kalichman, Williams, Cherry, Belcher & Nachimson, 1998). Furthermore, a woman may face a potential threat of violence when she notifies her partner of a possible STD. Therefore, to prevent conflict and potential verbal and/or physical abuse, women may choose not to notify their partner of the infection or they may not obtain treatment for themselves (Champion & Shain, 1998). The threat of sexual and non-sexual violence creates a significant obstacle to women's ability to practice risk-reducing behaviors (Kalichman et al., 1998).

Although each tribe's values and traditions may vary, generally a Native American woman's identity is grounded within the balance of her physical being, spirituality, family, and tribe (Allen, 1986; Green, 1980; Jaimes, 1982; Jenks, 1986; Kauffman & Joseph-Fox, 1996; LaFromboise et al., 1994; Welch, 1987). It is imperative that prevention efforts be developed at the local level and tailored to the needs of women in each community (Brassard, Smeja, & Valverde, 1996; CDC, 1994; DePoy & Bolduc, 1992; LeMaster & Connell, 1994, Sullivan, 1991; Weaver, 1999).

Information-Motivation-Behavioral Skills Model

Researchers have applied various theories to the AIDS crisis in an attempt to enhance AIDS prevention efforts (J. Fisher, Fisher, Williams, & Malloy, 1994), such as social-cognitive theory (Bandura, 1986), theory of reasoned action (Ajzen & Fishbein, 1980), health belief model (Becker, 1974), and AIDS-risk-reduction model (Catania, Kegéles, & Coates, 1990). The Information-Motivation-Behavioral skills (IMB) model of AIDS-preventive behavior (J. Fisher & Fisher, 1992) incorporates prior theories and research into a unified model that can be tested empirically. The generalizability of the IMB model has been successfully demonstrated with populations at risk for AIDS such as homosexual men and college students (J. Fisher et al., 1994; J. Fisher & Fisher, 1996). However, the external validity of the IMB model within the Native American culture remains unknown. Therefore, the primary objective of the present study was to test its fit to the target population of Native American women.

According to the IMB model (J. Fisher & Fisher, 1992), the essential components of AIDS-preventive behaviors (APB) are information, motivation, and behavioral skills specific to AIDS prevention (see Figure 1). First, information specifically related to AIDS exposure and prevention (e.g., knowledge regarding transmission of the HIV virus and methods to prevent exposure) is a necessary component for performing APB. Second, motivation is essential for a person to engage in APB. Motivation specific to AIDS prevention can be personally oriented (e.g., one's attitudes toward behaviors that prevent AIDS), socially oriented (e.g., one's perceived social support for engaging in

such behaviors), as well as one's perceived susceptibility to HIV. Third, behavioral skills represent the last critical factor for engaging in APB. This component is comprised of several skills such as (a) self-acceptance of one's sexuality, (b) acquisition of behaviorally relevant information, (c) initiating discussion and negotiating AIDS prevention with one's partner, (d) engaging in public prevention acts (e.g., condom purchasing and HIV testing), (e) consistent AIDS prevention, and (f) a sense of self-efficacy (e.g., a self-belief in one's ability to use the skills necessary for prevention) (J. Fisher & Fisher, 1992).

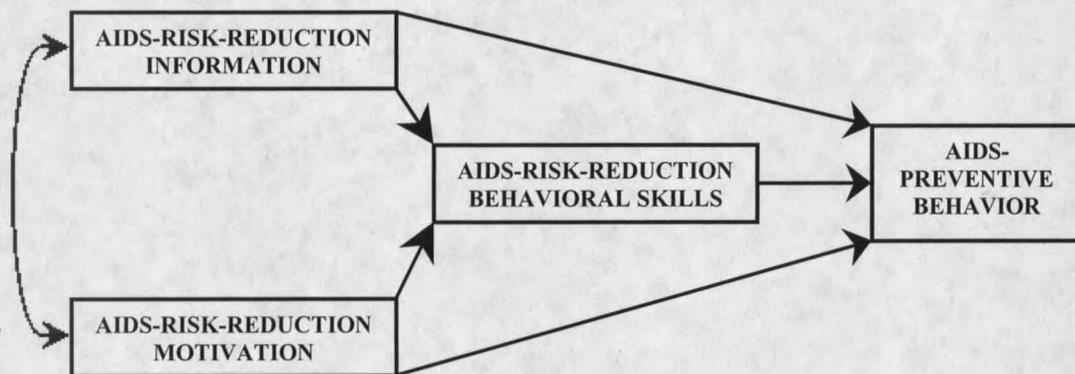


Figure 1. The Information-Motivation-Behavioral Skills Model (J. Fisher & Fisher, 1992)

The model has several assertions. First, the model indicates that AIDS preventive information and motivation are generally considered to be independent components within the IMB model. Although AIDS preventive information combined with motivation make it more likely that one's behavioral skills will affect APB, a strong relationship between the two constructs is not necessary. For example, a person can be highly knowledgeable about AIDS, but unmotivated to engage in preventive behavior.

Alternatively, an individual can be highly motivated to perform APB, but lack a solid knowledge base. Therefore, it is predicted that these two constructs are not significantly correlated. Second, both information and motivation are positively associated with APB when complex or unique behavioral skills are not needed for prevention. For example, information can affect APB without influencing one's behavioral skills when an individual learns that using a condom lubricated with nonoxynol-9 decreases the chances of becoming infected with HIV better than using a condom that is not lubricated with the spermicide. In this case, behavioral skills are not necessary to change APB. Similarly, an example of motivation directly effecting one's performance of APB is an individual's choice to remain abstinent. In this situation, complex behavioral skills, such as negotiating condom use and discussing a partner's sexual history, are not necessary for preventing AIDS. Third, it is the assumption of the IMB model that information and motivation are positively associated with behavioral skills, which, in turn, predict APB.

The content of the IMB model's constructs is an essential factor when assessing its generalizability. Not only should the content be specific to the target population (e.g., heterosexual women vs. homosexual men), but it should also be specific to APB (purchasing condoms vs. discussing a partner's sexual history). For example, the information, motivation, and behavioral skills needed for a heterosexual woman to purchase condoms may differ, as opposed to those necessary to discuss her partner's sexual history. Furthermore, the information, motivation, and behavioral skills necessary for a heterosexual woman to perform such APB may differ from a homosexual man's information, motivation, and behavioral skills to perform the same APB.

Hypotheses

In summary, the IMB model has been shown to generalize to different populations such as homosexual men and college students. However, it is not known whether this model generalizes to the Native American population. By applying the concepts of the IMB model to Native American women, the present study tested the following hypotheses (see also Figure 2):

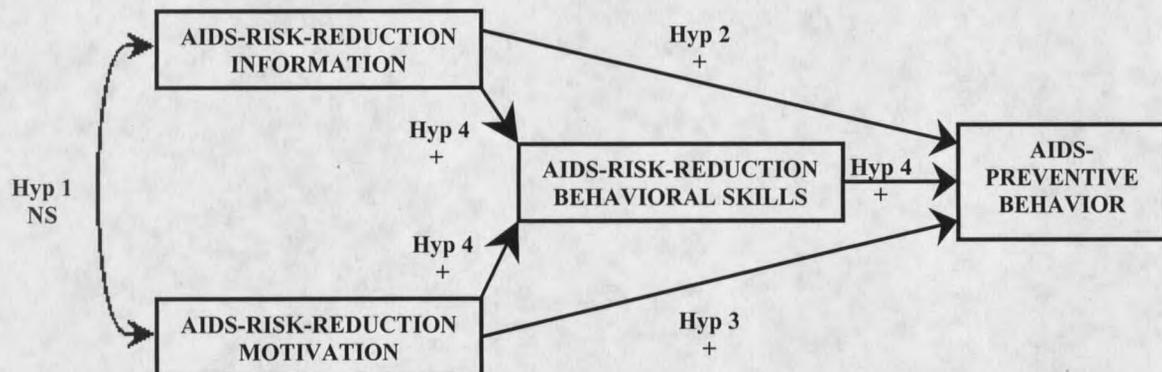


Figure 2. Hypothesized IMB Model Results for Native American Women .

Hypothesis 1

Native American women's AIDS prevention knowledge and motivation levels are not significantly correlated with one another.

Hypothesis 2

Native American women's AIDS prevention knowledge is positively associated with their AIDS-preventive behavior.

Hypothesis 3

Native American women's motivation to engage in AIDS prevention is positively associated with their AIDS-preventive behavior.

Hypothesis 4

Native American women's AIDS prevention knowledge and motivation levels are positively associated with their behavioral skills which, in turn, are positively associated with their AIDS-preventive behaviors.

METHOD

In order to examine the generalizability of the IMB model within the Native American population, existing data were analyzed from an intervention study designed from prior research on minority women's safer-sex knowledge, behavior, and attitudes (Hobfoll et al, 1993; Hobfoll, Jackson, Lavin, Britton, & Shepherd, 1994). The study was coordinated through Montana State University (MSU), using four site locations throughout Montana (Browning, Lame Deer, Bozeman, and Billings). The purpose of the original study was to examine effects of a culturally sensitive AIDS intervention program compared to a control condition. More data were collected in the original study than was needed for the present study and, thus, only a portion of the original data from the pre-intervention questionnaires was analyzed.

Participants

The project targeted a total of 160 Native American women, ages 16 to 29 ($M = 19.72$), who were single or living with their partner for less than six months. The women were associated with the following Montana tribes: Assininboine, Blackfeet, Crow, Gros Ventre, Northern Cheyenne, and Sioux. Participants were recruited through local universities (Montana State University and Montana State University-Billings) and community colleges (Blackfeet Community College and Dull Knife Memorial College).

Procedure

In the original study, participants' self-reported AIDS related sexual knowledge, attitudes, and behavior were measured via a questionnaire prior to, immediately following, and two months after the intervention. Participants were paid \$25.00 for each session attended. Female facilitators, familiar with the Native American culture, administered the 279-item questionnaires. Each item on the questionnaire was read to the participants, either individually or in a group setting, to ensure similar interpretation of the information. Participants in the control condition did not receive the intervention, but simply completed the questionnaires during the same time period as the intervention condition. The women's self-reported measures of personal mastery, communal mastery, social support, depression, and stressors were also measured. Again, only the data from the pre-intervention questionnaires were analyzed in the present study.

Confidentiality was a key concern due to the explicit information in the questionnaire. Therefore, each participant was assigned an identification (ID) number, which was written on her questionnaire. Upon completion, each participant was instructed to seal her questionnaire within an envelope marked confidential. The sealed envelopes were then collected by the facilitator and sent to MSU. The MSU staff recorded the participants' attendance, processed their payment, and sent the sealed envelopes to KSU for data entry. The KSU staff only had access to the participants' ID numbers. This process ensured that neither the facilitators nor the MSU staff would view the completed questionnaires and the KSU staff was unaware of the women's identities.

Measures of the IMB Model Constructs

Initially a multiple indicator, latent variable model was examined via a structural equations modeling analysis. However, a solution to this analysis could not be achieved using the present data set. Therefore, single indicators that best represent each construct were chosen and a path analysis was conducted instead. In accordance with the IMB model, each construct was examined using the following observed indicators.

Information

According to J. Fisher and Fisher (1992), indicators of the information construct within the IMB model include knowledge of methods to avoid HIV exposure, one's understanding of the transmission of HIV, as well as general knowledge regarding AIDS. The best indicator of the information construct for the population sampled was one's knowledge of preventing exposure to the HIV virus through sexual contact. Six items, taken from the National Public Health Service AIDS Information Survey (U.S. Public Health Service, 1988), assessed participants' knowledge regarding methods to lower one's risk of exposure to AIDS through sexual contact. The items were used in a similar study by Hobfoll, Jackson, Lavin, Britton and Shepherd (1993). The items assessed the participants' perceived effectiveness of several safer-sex practices (1 = very effective to 3 = not at all effective to 4 = don't know). The split-half reliability of the items is .64 and the test-retest reliability is .57 (Hobfoll et al., 1993). The Cronbach's alpha estimate in the present study was .72.

It is important to note that as long as the items are clear, low reliability estimates for knowledge is an indication of poor knowledge. This is evident in the scoring of 100% on the items by a panel of 11 experts, signifying the instrument's validity (Hobfoll et al., 1993). Hobfoll et al. (1993) also found that the items were accurate in depicting women's AIDS knowledge and that the items encompass the broad variation of such knowledge among women.

Motivation

J. Fisher and Fisher (1992) indicate that measures for motivation within the IMB model encompass one's motivation to engage in APB, perceived social support for the performance of APB, as well as one's perceived susceptibility to HIV. Within the population sampled, one's perceived risk of exposure to the HIV virus was the best indicator of motivation to engage in APB, which was assessed by the participants' perceived risk (1 = no risk to 4 = high risk) of the likelihood of being infected with HIV due to their own sexual behavior. Estimates of reliability were not calculated because only one item was used.

Behavioral Skills

Indicators of behavioral skills in J. Fisher and Fisher's (1992) IMB model consist of one's ability to discuss safer sex and negotiate condom use with a partner. Within the population sampled, the best indicator of behavioral skills was one's reported ability to

discuss AIDS and AIDS prevention with a partner. Behavioral skills were assessed by the participants' response regarding whether they discuss AIDS and AIDS prevention with their partner(s). Once again, because one item was used, internal consistency estimates were not calculated.

AIDS-Preventive Behavior

J. Fisher and Fisher (1992) indicate that measures of the APB construct consist of one's ability to engage in preventive behaviors, such as refusing unsafe sex, using condoms during sexual intercourse, and convincing partners to engage in safer sex. Within the present study, APB was assessed through items extracted from previous research on AIDS risk activities (Backer, Batchelor, Jones, & Mays, 1988; Francis & Chin, 1987; Kelly & St. Lawrence, 1988; Kelly, St. Lawrence, Hood, & Brasfield, 1989; Koop, 1986). The participants indicated the frequency of their sexual behavior within the past six months in regard to vaginal, oral, and anal sex. It is important to note that this measure was simply the frequency of sexual behavior, not specifically preventive behavior. However, for the population sampled with the particular data used, this was the best indicator of the APB construct within the IMB model. To fully explore APB within this population, participants' number of partners and frequency of condom use during these sexual acts was also examined.

Prior research conducted by Hobfoll et al. (1993) with minority women found that such items did not produce significant responding biases. In addition, it was found that women did not portray themselves in an overly positive manner, nor did they appear to be

changing their safer-sex behaviors simply due to their participation in the AIDS project. Estimates of reliability were not calculated due to the fact that the participants reported only the frequency of their sexual behavior.

RESULTS

Demographic Characteristics

Table 1 reports the mean, standard deviation, and range of the participants' age in years, as well as the frequencies and percentages of the participants' (a) ethnic background, (b) tribal affiliation, (c) employment status, (d) educational status, and (e) estimated annual household income.

As indicated in Table 1, the majority of participants were (a) between the ages of 16 and 20, (b) unemployed, (c) still in school, (d) and earning less than \$25,000 annually. Although the unemployment rate was high within this population, it may have been due to the fact that the majority of the participants were still in school and that the mean age was 19.72. The majority of the participants reported that their ethnic background was fully Native American with only 5% reporting mixed ethnicity. The most common tribal affiliations were that of the Blackfeet (25%), Crow (22.5%), and Northern Cheyenne (26.3%).

In addition to the information shown in Table 1, 75.6% of the participants reported that they have never had an STD, which contradicts prior research indicating high percentages of STD's within the Native American population. Furthermore, 40% of the participants reported that they have been tested for HIV, and 99.4% reported that they have not tested positive for the HIV virus.

Table 1. Descriptive Statistics for Demographic Variables

Variable	<u>M</u>	<u>SD</u>	<u>Range</u>
Age in Years	19.72	3.45	16 - 29
	<u>n</u>		<u>% of N</u>
Ethnic Background			
Native American	152		95.0
Native American & Hispanic	4		2.5
Native American & White	4		2.5
Tribal Affiliation			
Assininboine	6		3.8
Blackfeet	40		25.0
Crow	36		22.5
Gros Ventre	2		1.3
Northern Cheyenne	42		26.3
Sioux	7		4.4
Other	23		14.4
Missing	4		2.5
Employment Status			
Employed	53		33.1
Not Employed	104		65.0
Missing	3		1.9
Education Status			
Not in School	44		27.5
Still in School	114		71.3
Missing	2		1.3
Estimated Annual Household Income			
Less Than \$10,000	61		38.1
\$10,001 to \$15,000	32		20.0
\$15,001 to \$25,000	37		23.1
More Than \$25,000	26		16.3
Missing	4		2.5

Correlations Between Study Variables

Table 2 reports the means, standard deviations, internal consistency estimates, and intercorrelations for the study variables. As is evident, the six-item measure for information was internally consistent, whereas reliability estimates were not calculated for the other variables because they were measured by only one item.

Table 2. Means, Standard Deviations, Internal Consistency Estimates and Intercorrelations for Study Variables

Variable	<u>M</u>	<u>SD</u>	1	2	3	4
1. Information	4.10	1.69	.72			
2. Motivation	1.75	0.87	.11	---		
3. Behavioral Skills	0.33	0.47	-.02	.20**	---	
4. AIDS Preventive Behavior	12.81	28.25	.23**	.18*	.21**	---

Note. N ranged from 150 - 160. Cronbach's alpha appears in bold on the main diagonal.
*p < .05, **p < .01

Frequencies for IMB Model Variables

As previously indicated, the content of the IMB model's constructs is an essential factor. Therefore, to fully understand the fit of the IMB model to Native American women, it is necessary to examine first the basic information provided by the constructs' indicators, shown in Table 3. Within the information construct, almost half of the participants (49.4%) had below average knowledge of AIDS prevention methods through

sexual contact, followed by 25% with above average knowledge. As an indicator of the motivation construct, the majority of the participants (81.9%) perceived that they were at no to low risk for getting AIDS. With regard to the behavioral skills construct, the majority of the participants (66.9%) reported that they do not discuss AIDS and AIDS prevention with their partners. In addition, the majority of the participants (67.5%) engaged in sexual behavior in the past six months.

Table 3. Frequencies for IMB Model Variables

Variable	n	% of N
Information (Knowledge of AIDS Preventive Behavior)		
Below Average (0 - 69%)	79	49.4
Average (70 - 89%)	31	19.4
Above Average (90 - 100%)	40	25.0
Missing	10	6.3
Motivation (Perceived Risk)		
No Risk	77	48.1
Low Risk	54	33.8
Moderate Risk	21	13.1
High Risk	8	5.0
Behavioral Skills (Discuss AIDS w/ Partner)		
No	107	66.9
Yes	53	33.1
AIDS Preventive Behavior (Sex in Past 6 Months)		
No	52	32.5
Yes	108	67.5

Path Analysis

Initially a structural equations modeling analysis was conducted using Amos 4.0 (Arbuckle & Wothke, 1999) to examine the IMB model's fit to the present data.

However, a multiple indicator, latent variable model could not be fit to the data.

Therefore, a path analysis was conducted using observed variables and a completely standardized solution; thus the findings are in Z-score or standard deviation units. The structural model is comprised of four variables with five structural parameters representing hypothesized predictor-criterion associations, in addition to one structural covariance (correlation) representing the relationship between information and motivation. The relationships among the four variables are represented by the specified parameters described in the IMB model. The validity of the model is supported to the extent that the observed pattern of covariances conforms to the theoretical specification.

As reported in Figure 3, findings support Hypothesis 1, which indicates that the exogenous variables, information and motivation, were independent, as evident by their nonsignificant correlation, $r = .12, p > .05$. Support was also found for Hypothesis 2, evident by the significant path between information and AIDS preventive behavior, $\beta = .25, p < .001$. Hypothesis 3 was not supported, such that the path between motivation and AIDS preventive behavior was nonsignificant, $\beta = .12, p > .05$. Hypothesis 4 was not fully supported. Although the path between information and behavioral skills was nonsignificant, $\beta = -.02, p > .05$, the path between motivation and behavioral skills was

