DOCUMENT RESUME

ED 426 977 SP 038 272

AUTHOR	Torabi, Mohammad R., Ed.
TITLE	Prevention of HIV/AIDS Education in Rural Communities III.
INSTITUTION	Eta Sigma Gamma, Muncie, IN.
PUB DATE	1998-00-00
NOTE	75p.
AVAILABLE FROM	Eta Sigma Gamma, the National Professional Health Education Honorary, 2000 University Avenue, Muncie, IN 47306.
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	Health Education Monograph Series; v16 n2 1998
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Acquired Immune Deficiency Syndrome; Adolescents; Alcohol Abuse; College Students; *Comprehensive School Health Education; Elementary Secondary Education; Epidemiology; Faculty Development; Family Characteristics; Family Influence; Focus Groups; Health Promotion; Higher Education; Preservice Teacher Education; Public Health; *Rural Areas; *Sexuality; Student Motivation
IDENTIFIERS	Drug Resistance; Health Behavior; Indiana; Public Awareness; Risk Taking Behavior; Sexually Transmitted Diseases

ABSTRACT

This third special issue of the Health Education Monograph Series on HIV/AIDS Prevention in Rural Communities presents 9 articles on: "Rural Adolescent Views of HIV Prevention: Focus Groups at Two Indiana Rural 4-H Clubs" (William L. Yarber and Stephanie A. Sanders); "Implementing HIV Education: Beyond Curriculum" (Susan Frelick Wooley); "Epidemiological Investigation of Public Knowledge and Attitudes on HIV/AIDS" (Mohammad R. Torabi and Emmanual Ahua); "Health Motivation and HIV Risk Behavior among College Students from Urban and Rural Communities" (Catherine Sherwood-Puzzello); "Strategies for Strengthening Professional Preparation in Support of HIV Prevention and Health Education" (Becky J. Smith and Deborah A. Fortune); "The Relationship of Family Factors to Alcohol Use and Sexual Risk Behavior: Implications for HIV/AIDS Prevention" (Fred Piercy, Joan Jurich, Young Hee Chang, and Mary Beth Stibbins); "Finding Facts: HIV Prevention and Sexual Health" (Debra W. Haffner and Monica Rodriguez); "Relationship of HIV/STD Sexual Risk Behaviors to Other Health Behaviors among a Sample of Indiana Rural Youth" (Richard A. Crosby, William L. Yarber, and Andrew J. Kanu); and "Managing Drug Resistance to Antiretroviral Therapy for HIV Infected Patients" (James G. Anderson, Marilyn M. Anderson, Stephen R. Bryn, Linda L. Casebeer, and Robert E. Kristofco). (Individual articles contain references.) (SM)

Volume 16, Number 2
1998

The Health Education Monograph

Series

Prevention of HIV/Aids Education In Rural Communities III

Published by Eta Sigma Gamma
National Professional Health Education Honorary

Eta Sigma Gamma

Volume 16, Number 1
1998

The Health Education Monograph Series

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Eta Sigma Gamma wishes to gratefully acknowledge the John P. McGovern Foundation for its generosity in helping to make this monograph series possible.

The Health Education Monograph Series is published by Eta Sigma Gamma, the National Professional Health Education Honorary, 2000 University Avenue, Muncie, Indiana 47306. A non-profit organization, Eta Sigma Gamma is dedicated to the elevation of standards, ideals, competence, and ethics of professionally trained men and women in the Health Science discipline. Third class, bulk-rate postage paid at Muncie, Indiana.

The Third Special Issue
On
HIV/AIDS Education
and Prevention in Rural Communities

VOLUME 16 NUMBER 2

1998

Published by Eta Sigma Gamma

National Professional Health Education Honorary

National Executive Committee
Eta Sigma Gamma

Foreward

I am delighted to present to you the third special issue of the **Health Education Monograph Series** on *HIV/AIDS Prevention in Rural Communities.*

This publication deals with very timely topics related to HIV/AIDS Education in Rural Communities. The Rural Center for AIDS/STD Prevention is a joint project of Indiana University and Purdue University. This Center provided complete funding for production and distribution of this issue to the entire membership of the National Health Education Honorary. An additional 3,000 copies have been disseminated by the Center. Most of these articles were presented during the Center's Third Annual Meeting held in Bloomington, Indiana in April 1997. Also, some of these studies were funded by the Center. I would like to extend my utmost appreciation to the authors who worked diligently to make this additional publication a reality.

The scope of this special issue is broader and includes other related studies and pedagogical works that were not necessarily sponsored by our Rural Center. Included in this issue are various research and educational projects dealing with different dimensions of HIV/STD prevention in rural communities.

In 1997, new drugs helped to drop AIDS from the number 8 to number 14 leading cause of death on the mortality chart in just one year. According to Health and Human Service Secretary Donna Shalala, this drop means that new treatments have been very effective in extending the lives of people who have already been infected with the HIV virus. But this does not mean we have effectively reduced HIV transmission. This good news holds true only for America and and highly developed nations. Third World Countries, especially some African and Asian nations, have unproportional rates of HIV infected and AIDS cases. Today, these AIDS treatments are neither affordable nor available in the Third World and developing countries.

Obviously, the AIDS epidemic does not recognize any boundaries. It has profoundly effected world communities regardless of gender, age, religion, nationality, ethnicity, sexual orientation, geographic or political boundaries, or socioeconomic status.

The AIDS epidemic has given a new challenge to scientists in all disciplines and accentuates the notion of prevention through education and community empowerments. While some highly urbanized communities received more attention and resources for combating prevalence of HIV/AIDS, the rural communities have been relatively ignored. That is why the incidence of HIV/AIDS infection is growing fast in rural communities. Our Center is practically the only educational and research center that has concentrated its efforts in focusing on prevention of HIV/STD in rural communities.

On behalf of the National Executive Committee of Eta Sigma Gamma, I welcome professional organizations, research, and educational centers to consider sponsoring a special issue of ***The Health Education Monograph Series*** for future publications related to health education. Additional issues will receive full editorial process employed for production of our regular monograph series. As the editor of the Monograph Series and Co-Director of the Rural Center for AIDS/STD Prevention, I am delighted that the Center sponsored the third issue.

I would like to thank Ms. Kathy Finley for her assistance in preparing the publication and Ms. Joyce Arthur for her technical assistance. Also, the assistance of Mr. Jay Javed from our National ESG office is appreciated. Last, but not least, I would like to offer my appreciation to each and every member of the National Executive Committee who are very committed to supporting these monograph series.

Finally, thank you for sharing your comments with me regarding the past Monograph Series. As always, I am eager to hear your criticisms, comments, and suggestions regarding these publications. Your input is essential in improving the publication and ultimately serving our members and the profession in the most effective way. I do hope that you, as loyal members of this National Professional Health Education Honorary, check your college/university libraries and make sure that they receive ***The Health Education Monograph Series***. If not, please request that they subscribe to thiss important publication by calling 1-800-715-2559. It is a privilege for me to serve the Eta Sigma Gamma members and our profession.

I look forward to hearing from you.

Mohammad R. Torabi, PhD,MPH,CHES
Editor, ***The Health Education Monograph Series*** and Co-Director of the Rural Center for AIDS/STD Prevention

The Health Education Monograph Series

Volume 16, Number 2 1998

Rural Adolescent Views of HIV Prevention: Focus Groups at Two Indiana Rural 4-H Clubs

William L. Yarber, HSD and Stephanie A. Sanders, PhD

This study was funded by the Rural Center for AIDS/STD Prevention, a joint project of Indiana University and Purdue University.

Abstract

This study assessed the views of rural adolescents concerning HIV prevention. Thirty-eight white adolescents (22 females, 16 males), ages 11-17, residing in two southern Indiana counties and members of the local 4-H club were interviewed in December 1996. Standard focus group procedures were used for data collection and analysis (Morgan, 1988), with the theory of planned behavior (Ajzen, 1988) providing the structure for the interview questions. Transcribed responses were synthesized into 56 summary statements that were grouped into eight different categories. Major findings include: a sense of personal invulnerability to HIV was common among both females and males due in part to beliefs that small towns are isolated from HIV; both genders stated that they would not practice sexual abstinence just to avoid HIV; both genders indicated that they would be sexual with another person even if condoms were not available; males stated that they would cooperate with a female partner's request for sexual abstinence, monogamy or condom use; and both genders said that peers and family have the most influence on sexual behavior. HIV prevention education for rural adolescents should strive to eliminate their feeling of invulnerability to HIV infection.

HIV infection and AIDS is an increasingly serious health threat to the adolescents of the United States. The HIV epidemic is shifting to young people (National Institutes of Health, 1997), with one-quarter of all new HIV infections estimated to occur in persons between ages 13 and 20 (Office of National AIDS Policy [ONAP], 1996). Two Americans under the age of 20 become infected with HIV every hour of each day (ONAP, 1996). AIDS was the sixth leading cause of death for young people ages 15-24 in 1995 (National Center for Health Statistics, 1997).

The impact of AIDS in our country is decreasing in urban areas and increasing in rural areas and small communities. Rural AIDS cases rose from 5 percent of the total AIDS cases in 1990 to more than 7 percent of the total cases in 1997 (Belluck, 1998). Further, rural HIV epidemics are considered epidemics of youth (ONAP, 1996; Young, Sandor, Brackin, & Thompson, 1992). Hence, HIV prevention education efforts need to be targeted to rural youth.

A recent collaborative report of the Center for AIDS Prevention Studies and the Harvard AIDS Institute contends that current HIV prevention efforts directed toward young adults are inadequate (Center for AIDS Prevention Studies, 1997). Needs assessment of the target audience is one important strategy in developing effective HIV prevention education. This study assessed the views of rural adolescents concerning HIV prevention.

Methods

Subjects

Subjects were solicited from two 4-H clubs located in two rural (less than 50,000 population), southern Indiana counties. Thirty-eight adolescents (22 females, 16 males) volunteered to be included in the study. The subjects were 11-17 years old and white.

Procedures

The adolescents were interviewed following standard focus group procedures (Morgan, 1988). The focus groups were segregated by gender with the facilitator/interviewer being one of the study's researchers of the same gender. The theory of planned behavior (Ajzen, 1988) provided the structure for the discussion questions, with the questions (see Appendix A) reflecting the theory's major components: attitude toward the behavior, subject norm, and perceived behavioral control. The focus group discussions were tape recorded.

Data Analysis

The responses were transcribed and analyzed. The researchers identified eight thematic categories for grouping points made in the focus groups: rural culture, abstinence, condoms, sexual exclusivity, injecting drug use, pressure/influence, communication, and other. A synthesis of responses resulted in 56 summary statements, reflecting the most important findings. Appendix B contains these summary statements classified by category.

Results

Rural Culture

Both genders reported a sense of isolation from HIV be-

cause they were living in a small town. They stated that people in their community would not fear AIDS until they learned that someone in their town has AIDS. They believed that they would know who to avoid based on reputation and that if someone in their town had AIDS everyone would know. One male said, "You know everybody. You know what they do and what not. They don't have it." Some recognized that a sense of rural isolation from HIV might not reflect the reality of risk. One female said, "I think we're naive. I think we think that we live in a small town, so it's not gonna get here."

The females, in particular, described the importance of reputation in a small town and not wanting to develop an image of "sleeping around." One female said, "Yeah, you could have completely changed, I mean completely changed. You could have been valedictorian of her class and people would still think back, 'Look what she used to be. Know what she used to be?' That's the worst part about around here. People don't forgive or forget."

Abstinence

Subjects stated that they would not abstain from sexual activity with another person just to avoid HIV. One male said, "It's a rural area, people don't think they can get it. The only worry they have is pregnancy." One female said, "They don't fear getting diseases or anything. They just fear getting pregnant because then everybody's gonna know." Pressure from partner and perception that the partner is safe were among the reasons given why it is difficult to refuse sexual activity. Females gave several reasons for abstinence, including fear of pregnancy, moral beliefs and concern for reputation. The females stated that everyone would want to date a male who practices sexual abstinence. Although they felt most males would respect a dating partner's request for abstinence, some believed that some males would leave the relationship. The females also said it was difficult to say "no." The males indicated that they were expected to be sexual with their girlfriends, but most would respect their partners desire to be abstinent. One male said, "I'd say they [males] are pushy, but in the end they are cooperative."

Condoms

Participants indicated that the lack of availability of condoms would not deter them from being sexual with another person. They knew where to get condoms, but felt uncomfortable purchasing them because the lack of anonymity in a small town. One male said, "...I mean it's a small town. I mean, word gets around, and my mom knows a lot of people." Some males said they stole condoms to avoid embarrassment of interacting with a store clerk. One female stated, "If we can provide a way for people to get condoms without the embarrassment is about the only way because that's why a lot of people don't do it. That's why we've been talking about at our school putting condom machines in the bathrooms." Males noted that they may not insist on condoms use, but that they feel comfortable with using condoms and that they would cooperate with a girlfriend's request to use condoms. The following dialog occurred in one of the male groups: "Well, if the girl's like, 'You're gonna use a condom or you're not gonna get any tonight.'" "Yeah, the guy is like, 'Well, I'll be back in 20 minutes.'"

Sexual Exclusivity

Sexual exclusivity was perceived to be more related to relationship commitment than HIV prevention. Exclusivity was perceived to be normative behavior in relationships, but that alcohol use may lead to sex with another person. One female stated, "And I've heard a lot of people ruined it [sexual exclusivity] because they got drunk and didn't know what happened, and it ended up that they had sex with somebody that they didn't even know and it ruined the relationship that they had with another person." One male said, "Males can be persuaded [to be sexually exclusive]."

Injecting Drug Use

The subjects did not perceive injecting drug use as an issue in their community. One male said, "Most of the drugs around here aren't taken by needles." One female stated, "...most of my friends smoke pot."

Pressure/Influence

Peers and friends were identified as having the most influence on sexual behavior, whereas teachers and religious leaders were perceived not to be very influential. One male stated said, "I think if you have a good friend or a couple good friends that tell you to use prevention, I think that you're gonna be more likely to use it [condom] than if you're not going to." One female stated, "It's not like what my pastor tells me, I mean, I'm gonna listen to him. But I'm not gonna totally do everything he tells me to do." Males indicated that they believe that females are more influential in pressuring their peers to practice prevention and that females "break down" quicker than males when pressured to have sex.

Communication

Subjects reported that talking with their partner about sex is difficult, in part because discussion would imply that the partner is HIV infected or has had another partner(s). One female stated, "...the people that are more likely to talk about it are the ones who aren't sure if their partner is fooling around on them or not." One male said, "Well, if you talked about prevention, it would almost be like implying that the other person had STD or HIV."

Other

The risk of pregnancy was reported to be a greater concern than HIV infection, especially for females. Subjects reported that many of their peers talk at school about dating and sex,

with many exaggerating the level of sexual activity. Subjects stated that HIV is not limited to cities and that we would not have this epidemic if people had better morals and discipline, and if public health officials had understood the disease earlier. Subjects gave several suggestions for effective HIV prevention education, such as including "real-life" situations in the curriculum. One female said, "I think junior high school would be the best time to start...because they are immature, but they want to act like they're older." One male stated, "...you gotta make sure that you don't start too young to where it's too early for them to understand." Another male said, "Well, you don't want to scare the kids to death, but, yet you want to get it into their heads."

Discussion

Both the female and male adolescents of this study felt a sense of invulnerability to HIV infection because they did not believe that their own rural town had cases of AIDS or HIV infection. They believed that they know everyone, what they were doing sexually, who they should avoid, and if anyone was infected with HIV or had AIDS. Consequently, they did not worry much about HIV infection and did not practice prevention behavior to specifically avoid HIV. This denial and/or naivete is dangerous because state statistics show that both counties involved in the study have AIDS cases and HIV diagnoses (Indiana State Department of Health, 1996) and because AIDS cases in rural areas represent an increasingly greater proportion of the total AIDS cases (Belluck, 1999). HIV prevention education of rural adolescents should include HIV/AIDS statistics with a focus on HIV prevalence in rural communities. School students could contact the state department of health to discover how many AIDS cases and HIV infected persons are reported in their county.

Evidence of the feeling of invulnerability was revealed in other answers provided by the focus group members. For example, both females and males said they would not practice sexual abstinence just to avoid HIV, and females expressed a greater fear of pregnancy than of HIV infection and a fear of
getting a bad reputation. Both females and males said they would be sexual with another person even if condoms were not available.

These young people felt that a person was either going to be sexually abstinent or was going to engage in sexual activity and not worry about HIV, and that most were choosing the later. For them the decision was about having sex or not. They were simply not worrying about HIV. In order to make the need for HIV prevention practices real, this sense of rural isolation from HIV must be challenged.

Both genders perceived that people in their community would not fear HIV until someone they knew becomes infected with HIV or developed AIDS. Having a local person with HIV/AIDS speak to the local school classes would seem to be a very effective method of helping adolescents understand the reality of AIDS in their own community.

The study indicated that the females may have had more power than they realized in regulating sexual behavior in a relationship. The males said that they would listen and cooperate to their female partners' sexual behavior concerns. For example, while the males said they would not insist on using a condom, they would cooperate if the female wanted to use one, but the female should suggest condom use. The males indicated that they would "push some" for sex, but not to an extreme, and that they would be exclusive to one partner if that was the wish of the female. Thus, consistent with traditional gender roles, males were expected to make sexual advances and females were expected to set the boundaries. But males may be more respectful of females desires for condom use, sexual exclusivity, and to a lesser extent abstinence, than is commonly believed. The males stated that it was the female's role to initiate discussion about sexual and HIV prevention issues. However, the females indicated that they did not know how to start the discussions.

Abstinence from partnered sexual activity appears to be difficult for these adolescents because of perceived peer norms to be sexually active and because of their own growing desires for relationship intimacy involving sexual activity. This potential advantage to abstinence may be a more persuasive argument for young men inclined to abstain than other fear-based or moralistic messages. Also, it may serve to counter more widespread social norms for young men to "push" for sexual intercourse with their girlfriends. However, it is important to remember that the general consensus was that few would practice abstinence. Therefore, abstinence-only sexuality education may fail many students who are not going to remain abstinent and will need information and skill development to minimize the risk associated with partnered sexual activity.

Educators should inform adolescent females that this research indicates that they have more influence on HIV prevention with their male partners than they may believe, and that the males respected the females' worry about unwanted pregnancy and their reputation. However, the burden for sexual responsibility should not be placed solely on females. Males should be informed that this research indicated that females highly valued males who practiced sexual abstinence and that they all said they would want to do date that person. Also, tell the males that the females indicated that it was difficult for the females to initiate a request for condom use and to acquire condoms. Having students create and role play "opening lines" would assist them to learn how to begin discussion about HIV prevention with a partner. Further, providing students an opportunity to solve problem situations beyond those dealing with discussion of HIV prevention would appear to be valuable.

Both genders indicated that it was embarrassing to get condoms in their town because the store clerk probably knows them or their family. For that reason, some males said that they stole condoms. Students could rehearse verbal scripts

to be used while acquiring condoms and discover where condoms can be purchased in their town or a nearby community for greater anonymity.

Both genders indicated that peers and family have the most influence on their sexual behavior, with teachers and religion not having much influence. This finding reveals the importance of peer education as a valuable HIV prevention education strategy and the need for parent education about how to discuss sexuality and HIV/AIDS issues with their children.

The generalization of the findings are limited given the small number of subjects representing only two rural counties in a Midwestern state and because all of the subjects were white. A similar study at another rural area involving other racial groups may provide different results. However, given the general belief that many rural individuals inaccurately perceive an isolation from the AIDS problem ("HIV Infection & AIDS in Rural America," 1994), one would speculate that most rural adolescents, regardless of location or race, would feel a sense of invulnerability to HIV infection. Eliminating this dangerous perception may be the greatest challenge to rural HIV prevention education specialists.

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Appendix A: Questions Asked to Focus Groups

Attitude

Do teenagers in your community believe that AIDS can be a serious problem in a small town?

Are teenagers in your community afraid of getting HIV?

Would teenagers in your community not have sex if there were a chance of getting HIV?

What are the main reasons why it is difficult for some teenagers in your community to say "no" to sex? ...easy to say "no"?

Why do some teenagers in your community not practice abstinence to avoid HIV?

Do teenagers in your community who have a sexual relationship accept the importance of being monogamous as an important way of avoiding HIV?

What do teenagers in your community think about a teenager who has condoms available for sex?

Do teenagers in your community believe that condoms are effective in preventing HIV infection?

Why do some teenagers in your community not use condoms to avoid HIV?

Do teenagers in your community accept the risk of HIV infection from sharing injecting drug needles?

Subjective norm

Do teenagers in your community want to practice sexual abstinence to avoid HIV?

Do teenagers in your community support their friends who practice abstinence to avoid HIV? ...who practice mutual monogamy? ...who avoid injecting drug use?

Are dating partners in your community cooperative if one of the partners does not want to have sex to avoid HIV?

Do teenagers in your community who become sexually active want to use condoms?

Do teenagers in your community support their friends who use condoms during sex to avoid HIV?

Are dating partners in your community cooperative if one of the partners wants to use a condom for sex to avoid HIV?

Do teenagers in your community pressure their friends to be sexually active? ...to use injecting drug needles?

Perceived behavioral control

Are teenagers in your community strong enough to resist sex to avoid HIV?

Are teenagers in your community who are in a sexual relationship strong enough to practice mutual monogamy to avoid HIV?

Can teenagers in your community resist sex if their partners pressured them to be sexually active?

Are teenagers in your community strong enough to insist that condoms be used during sex to avoid HIV? ...strong

enough to avoid injecting drugs to avoid HIV?

Can teenagers in your community talk to a sex partner about HIV prevention? ...about abstinence, mutual monogamy, condom use? Why or why not?

Would teenagers in your community, feel comfortable getting condoms? ...using condoms?

In your community, how much influence do teenagers have on each other to practice HIV prevention? ...influence not to practice prevention? How much influence do parents have on teenagers? ...influence of religious leaders, teachers?

Appendix B: Summary of Responses

Key: AF=adolescent females AM=adolescent males

Rural Culture

A sense of personal invulnerability to HIV was common among both AF and AM, mainly because they believed that small towns are isolated from HIV. They acknowledged that this belief might be naive.

Both AF and AM perceived that people in small towns will not fear HIV until someone they know becomes infected with HIV or develops AIDS. They stated that is someone were infected with HIV everyone we'd know.

AF indicated the importance of maintaining a good reputation in a small town, and that it is difficult to improve a bad reputation. They indicated that you either have to avoid a bad reputation, ignore it or move away if you have a bad reputation.

Both AF and AM stated that they know everyone in their town, what they do and do not do, and who to avoid.

Both AF and AM indicated that it is embarrassing to get condoms in their town, because the store clerk probably knows them or their family.

Abstinence

Both AF and AM stated that they would not practice sexual abstinence just to avoid HIV.

Both AF and AM indicated that there were different sexual norms for different adolescent social groups, and that for some groups being sexually abstinent can result in being labeled a "prude."

AF suggested that if females want to abstain from partnered sexual activity they should rehearse saying "no" and discuss sex early in the relationship before sexual activity begins.

AF perceived that most males would respect a dating partner's request for sexual abstinence, although some might leave the relationship.

AF expressed respect for a male who practices sexual abstinence and stated that "they'd all want to date him."

AF described reasons why it is difficult to say "no" to sexual activity, such as pressure from partner, being weak, sex happens quickly or is forced, difficulty in discussing sex with partner, and belief that the partner is safe. They indicated that it is easier to say "no" if he brings it up.

Both AF and AM believed it was easier for females to say "no" to sexual activity and that abstinence was more important to females than to males.

AM believed that females are more likely than males to cooperate with a request for sexual abstinence.

AF reported reasons to wait for sex: morals, fear of pregnancy, community standards, what parents and especially others think, and that pregnancy can interfere with achievements of goals.

AF indicated that it takes a strong self-esteem for females to believe they are "worth the wait."

Condoms

AF believed that males carry condoms to "look cool."

Both AF and AM indicated that a female carrying a condom implies that she is "sleeping around."

Both AF and AM stated that they know where to get condoms, but that it is embarrassing to get them.

AM reported that they sometimes stole condoms so they would not have to face the store clerk.

AF stated that they do no know how to initiate discussion about condom use with their partners.

Both AF and AM indicated that they would be sexual with another person even if condoms were not available.

Members of both AF and AM groups disagreed about the prevalence of condom use and the effectiveness of condoms for HIV prevention.

AM stated that females should suggest condom use, and that they are not going to insist on condom use but would cooperate if the female wanted to use condoms.

AM reported that they feel comfortable using condoms.

AF stated that if you are mature enough to have sex you should be mature enough to get condoms.

AF perceived that their community believes that making condoms available to adolescents encourages sexual activity.

Sexual Exclusivity

Both AF and AM indicated that they practice sexual exclusivity as part of a commitment to a relationship, not so much because of worry about HIV infection.

Both AF and AM stated that they assume when sexual activity starts with another person that it will be exclusive.

Both AF and AM stated that alcohol use may lead to "cheating" on a partner.

AM perceived that sexual exclusivity was more important to females, but that they would be receptive to female wishes for exclusivity.

Injecting Drug Use

Both AF and AM do not perceive injecting drug use as a

problem in their communities.

Alcohol use, smoking pot and snorting coke were reported by both groups as more of a problem in their communities than injecting drug use.

Pressure/Influence

AF reported that they looked up to older peers, but were probably naive about their level of sexual activity.

According to both AF and AM, peers and family have more influence on their sexual behavior, with teachers and religious leaders not having much influence.

AM perceived that their male peers do not have much influence on whether they practice HIV prevention, but that females have more effect on each other to practice prevention.

AM perceived that females pressure each other about avoiding a bad reputation.

AM perceived that males are pressured more than females to be sexual and that females "break down quicker" from sexual pressure.

Communication

AF indicated that communication with a dating partner depends on the person, the quality of the relationship, how comfortable the partners are with each other, and if they suspect the partner is "fooling around."

AM believed that females are more likely to talk about sex because they have more at stake.

Embarrassment and implication that the person has HIV are the reasons AM gave for not talking about sex with a dating partner.

AM indicated that they do not often ask about the sexual past of the dating partner since they have a sense of who has been sexually active, although they acknowledge that this perception may be inaccurate.

Other

AF expressed more concern than AM about the negative consequences of sexual activity. They were worried more about unplanned pregnancy than HIV infection.

AF indicated that one reason pregnancy is such an important issues is that it can be easily seen, whereas it is hard to know who is HIV infected.

AM perceived that females are more worried than males about pregnancy.

Both AF and AM indicated that males may not admit their fears of HIV.

AM perceived that many of their peers are sexually experienced and that it is hard for them to resist sex.

AM indicated that they would "push some" for sex with their partner, but not to an extreme. They perceived that it is harder for males to resist sex, that they are expected to "go for it" and that they should brag about having sex.

AF reported reasons to start sex: pressure, because they are in love, heard it was fun, just want to, want relationship to last, it is time to do it, it is the "in" thing to do, you are supposed to, wanting to belong, to avoid embarrassment when the topic comes up, and hard to say that I am waiting.

AM did not express as much concern about their reputation as females expressed.

AF indicated that some of their peers who have a bad reputation "go ahead and live up to it."

Both AF and AM perceived that there is much talk at school about sex on dates, often including bragging and overestimations about the number of peers having sex.

Both AF and AM perceived that HIV prevention education is more effective when someone in the social group has been affected and others know about it, when there is discussion about "real-life" situations, and when the social group leader can be identified and educated to be a good role model.

Both AF and AM disagreed about the best age to initiate HIV prevention education. But, they question whether the education began before junior high school would be effective since "the kids would not know what is going on."

Both AF and AM indicated that education about sexual abstinence and condom use may present a conflicting message.

AM stated that they realize that the HIV epidemic is not just a gay disease and not just limited to cities.

AM indicated that we would not have this epidemic if people, especially gays, had better morals and discipline and if we had figured out this epidemic earlier.

Implementing HIV Education: Beyond Curriculum

Susan Frelick Wooley

After years of denial, many rural communities are becoming aware of their vulnerability to HIV and AIDS. As the number of people with AIDS in the U.S. levels off, so does the distribution of cases. No longer is AIDS primarily an urban problem. Between 1991 and 1997, rates of diagnosed AIDS cases in rural areas increased from 4.9 (Van Sant, 1998) to 8.0 cases per 100,000 (Centers for Disease Control and Prevention [CDC], 1997). Between 1996 and 1997 the number of AIDS cases per 100,000 population was as high in many primarily rural states as in more urban states (Size, 1998).

Adolescents in rural areas differ little in their sexual behaviors from those in other areas [Centers for Disease Control and Prevention (CDC), 1998]. According to data from the 1997 Youth Risk Behavior Survey (YRBS), 48% of high school students in the United States had ever had sexual intercourse, 16% had four or more sexual partners, and 35% were currently sexually active. Among currently sexually active students, 57% reported using a condom the last time they had sexual intercourse, 17% used a birth control pill, and 25% had used alcohol or drugs the last time they had sexual intercourse. Eight percent of high school seniors had been pregnant or gotten someone pregnant. The YRBS also found that over 90% of students received HIV education in school, with percentages lower for minority youth than for whites. The state with the lowest rate (79.9%) is a rural southern state. In the same survey, 63% of high school students said they talked with parents or other adult family members about HIV and AIDS. The states with numbers below 60% included many primarily rural states and territories (CDC, 1998).

Once a community recognizes that its young people are vulnerable to HIV infection or are becoming parents at a young age a call for HIV prevention or sexuality education in schools often follows. Without an understanding of the process of implementing change in schools or of a community's resources for dealing with issues related to HIV and AIDS, such calls often fall on deaf ears or end in failed ventures. This paper presents information about implementing change in schools based on the author's experiences with developing and implementing a national curriculum (BSCS, 1987) and in coordinating a curriculum identification and dissemination project with a federal agency. Within two years of the first national level training for trainers on the second project, school personnel from 51 of 55 eligible states and U.S. territories had received training on at least one identified curriculum. In turn, over 38,000 students throughout the U.S. in both urban and rural areas received instruction on one of the identified curricula during that same two-year period (Wooley, 1996).

Just as changing health-related behaviors of individuals takes time and goes through predictable stages (Prochaska and DiClemente, 1986), introducing a new curriculum into a school takes time and goes through predictable stages. Introducing HIV education, a new curriculum, or a new way of presenting HIV prevention education in a school requires many people to change their behaviors. Effective HIV prevention curricula actively involve students and provide skills training and practice (Kirby, et al., 1994), yet few teachers are adept in teaching social skills. If a new classroom HIV prevention curriculum or series of lessons requires teachers to change not only the content but also the presentation methods they use, then teachers need to develop new skills. They need training, opportunities to practice, and follow up support, just as students need training, practice, and support to develop new social skills.

The people who must change include not only teachers, but also school administrators and decision makers. They determine whether curricular materials are consistent with mandates and community norms, approve funds for materials and training, allocate time for HIV prevention education, place such education within the school curriculum, arrange for training and follow up support, and seek appropriate consent. If a new curriculum involves interacting with community resources, people in community agencies will change how they interact with schools. If a curriculum includes improving family communication among its goals, students' families will change. To meet the needs of teachers who must change, teacher trainers will also have to learn a new program. Ultimately, a new HIV prevention curriculum should result in students changing their behaviors.

CBAM: A Model for Understanding the Process of Change in Schools

Both of these projects drew upon various models of diffusion of innovations as well as experience working with schools. Among the many models for diffusion of innovations, the Concerns-Based Adoption Model (CBAM) describes what happens and also provides direction for implementers (Hall and Hord, 1987). CBAM suggests that people implementing change will have different concerns and needs as they go through the implementation process (see Figure 1). For teachers in a school, the concerns follow a

predictable pattern. Knowing that pattern can help when developing a system for supporting the implementation process. Moving from one level to another in the model requires addressing people's concerns at each level.

Figure 1: Concerns-Based Adoption Model (CBAM)

1. Awareness	5. Consequences
2. Information	6. Collaboration
3. Personal	7. Refocusing
4. Management	

(Based on the work of Hall and Hord, 1987)

Awareness. To understand the CBAM, consider the process a teacher might go through in implementing a new HIV prevention curriculum. As a first step, the teacher must become aware of the new lessons or curriculum. Before a teacher reaches this stage, response to the new materials might be, "I do not know about this" or "I am not interested in this." Moving the teacher from pre-awareness to awareness requires some type of personal contact. A study in the Netherlands, where teachers make curricular decisions, found that most teachers did not actively seek out information about new curricula. They usually became aware of a new curriculum from written materials such as direct mailings sent by publishers or from colleagues who had some experience with the curriculum (Paulussen, Kok, Schaalma, & Parcel, 1995). Some strategies for moving teachers from pre-awareness to awareness are promotional flyers, presentations or exhibits at professional meetings, and staff meetings in schools where teachers share ideas. In rural communities, teachers often have fewer opportunities to interact with teachers from other schools and districts, so opportunities for sharing new ideas might be fewer.

Informational. Once a teacher becomes aware of something new that holds some interest, the next concern is informational: "What do the materials consist of?" "What does the curriculum offer that makes it worthy of consideration?" "What does it cost?" "How much time does it take?" Teachers in rural areas often have concerns about how they might get access to materials for review or whether training will be available at a convenient location. Teachers with these concerns need information about the curriculum. When teachers are at this level, written information about a curriculum or a presentation at a convention or a staff meeting might help satisfy their concerns.

Personal. Next come personal concerns such as "Where will I find the time and energy to prepare for something new?" "What kind of training will I need?" "What is my comfort level with the lesson topics?" When teachers are at this stage, a formal training on the curriculum can help them become familiar with and comfortable with the new materials. If the training offers follow up support and technical assistance, teachers can have some confidence in proceeding, knowing they have help if needed later on.

For sexuality education, concerns about community reactions are often high in rural communities. Potential adopters live and work in the community and realize that discussions of sexual matters can cause controversy. Thus, obtaining administrative, parental, and community support can address personal concerns of both teachers and administrators. If members of the community and representatives of students' families have not been involved prior to this point, they should be involved now. Successful implementers will take time at this stage checking out community and administrative support. Administrators, parents, and others in the community might well be at the pre-awareness level, so before proceeding with teachers, those shepherding the implementation process might need to shift their focus to others. To gain the acceptance and support of students' families, school board members, members of the religious community, and others in the community, implementers must address the informational and personal concerns of these stake holders.

Management. Teachers' next concerns revolve around management issues: "How will I obtain needed support materials?" "What are the phone numbers for local referral services?" "How will I organize the classroom — arrange the desks and chairs to facilitate active student involvement?" "How will I assign students to groups?" "How will I get students reconvened when they are engaged in small group work?" In rural areas, teachers might have concerns about locating local resources needed for the curriculum, such as access to trained adolescents infected with HIV who are willing to speak about their condition. A good training will begin to address some of these concerns, but only when the teacher prepares to teach the materials for the first time will he or she confront all the logistics involved. Having another teacher in the building or a local community resource person can help at this stage. A supportive building administrator is crucial. A regional resource center or district coordinator can provide considerable assistance. Management concerns will continue throughout the first use of a new curriculum. They will reemerge, but to a lesser extent, each time a teacher uses the curriculum.

Consequences. Only when teachers begin to feel comfortable with the flow of lessons and the mechanics of implementation will they wonder about the consequences of the curriculum: "How did the students react?" "Did any parents give feedback?" "Did students take the messages to heart and change in any way?" Consistent with behavioral research, when teachers perceive positive results — students enthusiastic about lessons and participating eagerly, parents thanking them for opening dialogue with their sons and daughters at home — they will gain confidence and become convinced of the value of the curriculum. If, however, teach-

ers experience negative consequences — students who mock the lessons, inability to obtain needed materials or resources in the community, opposition from members of the community, criticism from the school administrator — they will often discontinue use of the materials or modify them to eliminate the problems. If teachers in a remote location find that accessing materials or other resources is time consuming, they might eliminate effective, but time-intensive strategies. If a school or teacher builds evaluation into implementation, the evaluation results can address concerns about consequences, but evaluation results will usually be less compelling than the teacher's gut experience of consequences.

Collaboration. A teacher who is enthusiastic about a new curriculum because of positive experiences with it, will often want to share with colleagues. The teacher might also want to enhance the curriculum by increasing collaboration with community agencies. "How can I get others to use this — it's great!" "Could I get the art teacher to work with the students on the community awareness activity in the curriculum?" "How can I get more parents to participate in the family dialogue activity?" Giving teachers a chance to reconvene at this point can help them address their concerns about collaborating as well as about any personal, management, or consequences concerns they had that are still unresolved. In rural communities, teachers with these concerns often discover the lack of services, especially services for adolescents who have concerns about reproductive health issues including possible HIV infection or who require treatment for AIDS.

Refocusing. Some teachers who continue using a curriculum and become comfortable with it eventually have concerns about refocusing: "How can I take the skills in this curriculum and apply them to other content areas?" "Could my students work with a local AIDS service organization as part of their service learning requirement?" "Could I incorporate new information I learned at a conference into the lesson plans?" "Could I become a trainer and begin teaching other teachers?" Often, no one can provide support for these concerns because these teachers are charting new territory. However, they might begin the entire process anew — to develop new skills and change in new ways. As Gene Hall, one of the developers of CBAM, has said, "The road to suc-cess is always under construction."

Barriers and Facilitators to National Dissemination of Effective HIV Curricula

In 1991, the Centers for Disease Control and Prevention's Division of Adolescent and School Health (CDC/DASH) launched its Research to Classroom project. The purpose of the project was to identify curricula with credible evidence of effectiveness in reducing selected risk behaviors among school aged youth. The project started with curricula intended to reduce behaviors that place youth at risk for HIV infection. In addition, the project recognized the need to ensure that identified materials and accompanying training were available nationally to those interested in adopting the identified curricula (Education Development Center [EDC], 1994).

As the system evolved, CDC conducted formative research on the system itself (EDC, 1994). The formative research revealed that the most frequently reported barriers to implementing curricula with evidence of effectiveness were real or perceived controversy, time constraints, and lack of administrative support. Other frequently mentioned barriers included teachers' personal discomfort with sensitive controversial content, with skills teaching, and with sexuality in general. (Brener, 1995). The School Health Policies and Programs Study (SHPPS) findings that most health teachers lack professional preparation in health education (Collins et al., 1995) might explain some of teachers' discomfort. Another frequently mentioned barrier was how to fit the several hours required for effective HIV education into a school's existing health education offerings. Issues common to those in rural areas included the community wanting abstinence as the only message, denial that HIV presents a problem in rural areas, and lack of resources. In addition, when schools have small staffs and teachers assume many roles, teachers in rural schools often find the prospect of taking on one more task daunting. Furthermore, willing appropriately-prepared teachers and interested students often did not have enough flexibility to find a fit in their schedules. The barriers in this study fit into the CBAM paradigm; most represented personal or management concerns.

CDC's formative research also asked state-level education agency staff what contributed to successful implementation of evaluated HIV prevention curricula. Incentives such as free training, paying for substitutes, providing minigrants to schools, and providing graduate credit for attending trainings ranked first and probably addressed personal and management concerns. The next most frequently mentioned contributor to success was external support from community coalitions, parent groups, health and medical organizations, and individual parents. This support can address not only personal concerns but also concerns about consequences. Internal support from school administrators, school boards, and state mandates was another key factor and it addressed the same concerns. Having building level contacts, regional coordinators, eager teachers, or local advocates also contributed to successful implementation, as did training school teams that included both teachers and school administrators, compared to training teachers who participated as individuals.

Lessons Learned from a Statewide Curriculum Dissemination Project

The findings from CDC/DASH's formative research on its Research to Classroom project are consistent with those of a five-year state-wide effort to diffuse tobacco prevention curricula in North Carolina, funded by the National Cancer Insti-

tute (Smith, Steckler, McCormick, & McLeroy, 1995). Most of the North Carolina schools were in rural areas. The authors condensed what they learned over five years of implementation efforts into specific lessons, which fell into three broad categories – school environment and context, leadership, and training.

School environment and context. Within the school environment and context category, lessons learned included that turbulence, teacher and administrator turn over, as well as school restructuring, hindered implementation efforts of a new health-related initiative. Just because teachers in a school received training one year, one could not assume those same teachers would be at the school or have the same assignments the next year;therefore, schools needed continued availability of training and support. As part of the school's climate, the authors also found that standardized testing in other academic content areas affected implementation of health curricula. When the driving force in a school was to improve test scores in reading and math, health became a low priority. A third environmental influence was whether health topics were part of categorical curricula or infused. Categorical curricula often had financial support as well as external advocates and were thus more attractive to schools than comprehensive health education approaches. Even weaker were curricula that infused health content into other subject matter, a finding supported by the SHPPS study (Collins, et.al., 1995)

Leadership. The most effective leadership included a health coordinator at the district level and a high level district administrator who championed the effort. In addition, the curriculum needed a teacher or district level liaison (who could be the coordinator) who advocated for it and who provided encouragement and logistical support. This finding is very consistent with CBAM; if teachers can get their personal and management concerns met quickly, they are more likely to use the intervention.

Training. In North Carolina, the most effective implementation occurred when teachers and administrators had opportunities for a series of trainings. Pre and post training consultation also improved results. However, even with training, some teachers did not implement the curriculum. The reasons were either that they lacked administrative support or they felt uncomfortable with the intervention because it did not fit their teaching style – personal concerns. During a project update meeting held December 1991 in Denver, CO as part of a research study on a HIV prevention curriculum, Don Iverson shared that the most effective teachers were those who had received the five-days of training on the curriculum and had previous training in implementing skills-based curricula. The conclusion of the North Carolina study was that providing training and materials did not guarantee long term implementation. Long term change required trained administrators who provided support, teachers or coordinators who provided continuous reinforcement and support, on-going training for new staff, and community support.

Considerations Specific to Rural Areas

Because people in rural areas tend to have a sense of community, the community needs to have a stake in a new HIV prevention curriculum in the school. That support begins with key opinion leaders who have influence directly or indirectly with the school board, with the religious community, and with families of students. Each community has formal and informal leaders who can influence many people. These people need to be aware of what is proposed and support implementation (or at least not oppose it). If objections arise, these are the best spokespeople for diffusing potential controversy.

Effective implementation requires access to training, to materials needed for the curriculum, and to on-going logistical support and encouragement for teachers. In rural areas these can present barriers to implementation. For teachers from rural areas to attend training, they often must travel and be away from home and school responsibilities. Training costs, then, must include travel and substitute pay. Since rural schools often have little extra money, such costs can present barriers. If a few teachers and administrators can receive training away from home, they might be able to provide training for others on site, reducing the cost in time and money.

Sometimes, poorer schools can obtain loaned materials to help with costs. To secure loaned materials, however, teachers in rural areas must usually order them well in advance to allow shipping time. Teachers might need logistical support to arrange for shipping. Accessing follow up support often presents another barrier for those in remote areas. With the Internet and teleconferencing, people in rural areas can sometimes get such support without having to travel long distances.

Another issue common in rural areas is the content of HIV prevention materials. High school students in rural areas often lack access to confidential sources for reproductive health information or services. Buying condoms at the local store where everyone knows them and their parents or entering an STD or HIV testing facility where family members or friends work or might see them presents significant barriers for many young people. Prevention education programs in rural areas need to help sexually active young people get the services they need without usurping the important role of families in their lives.

So, what do you need to get effective HIV prevention education into schools in rural areas?

- An effective curriculum
- Trained teachers
- Sufficient time
- Supportive administrators
- A teacher or district-level staff person who can provide on-going encouragement and support

- Support from the community
- Access to needed materials and follow up consultation
- Access for students to services advocated in the curriculum.

AND patience.

Several resources exist for those wanting more assistance in implementing HIV prevention education in schools. *Educating for Health: A Guide to Implementing a Comprehensive Approach to School Health Education* (Marx & Northrop, 1995) provides information and tools useful for people at the local level. ETR Associates' *Dissemination Workbook* (1997) provides useful information and checklists for those working at a large district, regional, or state level. *Health Is Academic* (Marx & Wooley, 1998) provides guidance for those wanting to implement HIV education in the context of a coordinated school health program. *Buildin' Effective Coalitions to Prevent the Spread of HIV: Planning Considerations* (Allensworth, n.d.), *A Comprehensive Approach to Reduce Pregnancy and the Spread of HIV: An Advocacy Kit* (Allensworth & Rubin, 1997) , and *Thinking Ahead: Preparing for Controversy* (Newman & Farrell, 1991) provide suggestions and tools for building community support. Effective implementation of something new in a school takes three to five years. It takes a team of people who are committed for the long haul. It takes a vision of what can be and flexibility to negotiate the detours on the road that is always under construction.

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Epidemiological Investigation of Public Knowledge and Attitudes on HIV/AIDS

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Introduction

Thus far, the only means of battling the further spread of HIV/AIDS infection is through education and empowerment of communities and individuals. To design an effective HIV/AIDS education, prevention campaign, and curriculum, it is essential to understand the public's level of knowledge, attitude, and practices. Further, public opinion is an important force in formulating public policies and legislative agenda relating to public health issues (Torabi & Crowe, 1995; Torabi, McAllister & Kotecki, 1994). Thus far, few studies examined public knowledge, attitudes, perceptions, and correlates of AIDS (Sweat & Levin, 1995; Peruga & Celentano, 1993; Gallagher & Peterson, 1992; Ornstein, 1992). These studies revealed a lower level of knowledge and poor attitude toward AIDS, especially among certain demographic population. Further, they reported certain inconsistencies between individual knowledge about HIV/AIDS and attitude toward the infection and infected individuals, and pointed out that public education, with regard to HIV/AIDS, has not favored the minority group.

In a public knowledge and attitude study about AIDS among adults in Calcutta (Porter, 1993), it was found that over 30% of the people would not have dinner with or continue to work with an AIDS patient and 5% believed that all AIDS patients should be quarantined. Another public knowledge and attitude study conducted in Ireland (Harkin & Hurley, 1998) indicated a high level of knowledge regarding modes of transmission of HIV. Yet, there was confusion about casual transmission of the infection. However, the level of knowledge, attitude, and practice related to HIV/AIDS varies from community to community. It is important to examine the status of these variables in each community. Thus, this study was designed to investigate the knowledge, attitude, and selected practices among Indiana adults regarding HIV/AIDS.

Methodology

Sample: All residents of the state of Indiana age 18 years and older who live in a household that could be reached by telephone constituted the population of the study. Cross-sectional design using Standard Random Digit Dialing (RDD) methodology (i.e. including all households with one or more telephones, and those with unlisted numbers) was used to randomly generate survey sample households. A respondent was randomly selected to be interviewed at each residential telephone number which was answered. The Indiana University Center for Survey Research in Bloomington, Indiana conducted the interviews. The interview was anonymous and all answers were kept completely confidential. As with all sample surveys, there is the possibility of sampling error. The sampling error does not take into account other possible sources of error that can occur in any public opinion study.

Instrument and Data collection: This study utilized the National Health Interviewer Survey (U.S. Centers for Disease Control and Prevention: National Center for Health Statistics, 1988; 1994). The instrument consisted of 106 questions. Six demograph items regarding age, gender, marital status, education, income, and community setting were added. The purpose of the 106 closed ended questions was to provide population based data on adults' knowledge, attitudes, and action about HIV/AIDS, transmission of HIV, and their experience with HIV antibody testing. The questionnaire was adopted without any modification so that the obtained data could be comparable to the national data.

Data Analyses: The collected data were subjected to descriptive statistics as well as inferential statistical tests including chi-square test, confidence interval, and analysis of variance. A selected portion of the data also were compared to the comparable portion for the National data collected for the United States (U.S. Centers for Disease Control: National Center for Health Statistics, 1994).

Findings

A total number of 832 adults participated in the study and the margin of error for finding of all proportions reported here was about 3.5% for 95% confidence intervals. About 41 percent were males and 59% females. The age distribution was as follows: about 22% were 18 - 29 years; 46% 30 - 49 years and 32% were 50 years and older. About 54% of the participants were married, 16% never married, 16% divorced or separated, 8% were widowed and 6% living with a partner. Over 54% of the participants have had more than 12 years education 37% had a high school diploma and 9% less than 12 years of education. Nearly 70% of the subjects earned income of $25,000 or more, 27% reported less than $25,000, and 3% didn't respond. The sample reasonably represented different regions of the state. About 31% were from cities, 16% from suburban areas, 34% from small towns, and 19% from rural areas.

The subjects were asked if they had ever been tested for

the AIDS virus. About 17% did not answer the question. Of those who answered the question, 39% said "yes" and 61% said "no." The average number of times they had a blood test for AIDS virus was 2.6 times. Of those who have had the blood test, 45% voluntarily had asked for the blood test. About 80% got the results of their blood test, and 20% did not. About 6.5% have had a blood transfusion at any time between 1977 and 1985. Nearly 76% of the adults thought that the present blood supply is safe from transfusions.

The subjects' behaviors with regard to HIV/AIDS risk taking are summarized as follows: about 1% of the participants have taken illegal drugs by needle one or more times since 1987 and 99% had not. More than one percent of the subjects repeated that they have had sex for money or drugs one or more times since 1987. The sexual partners for the ten years reported to be about 50% men only. 38% women only. 10% have not had any sexual partners, and about two percent were men and women.

The subjects were also asked to what extent they thought that using a condom was effective in preventing the AIDS virus through sexual activities. The results are summarized in Figure 1. As Figure 1 shows, only 23% believed that condoms are very effective while 7% believed that condoms are not effective at all.

The respondents were asked about the effectiveness of a monogamous relationship in preventing the HIV/AIDS virus. The results are summarized in Figure 2 which shows about 10% believe that a monogamous relationship is not at all effective and 14% said it is somewhat effective in preventing the virus.

The participants were also asked about their chances of having the AIDS virus. The results are summarized in Figure 3 which shows that about 3% believe that they have a high or medium chance of already having the AIDS virus and about 27% said their chances are low and 70% indicated no chance

of having the virus. The respondents were also asked about their chances of getting the AIDS virus. The results are presented in Figure 4 which shows that about 3.5% indicated their chances are high or medium and yet about 44% indicated that they have a low chance.

The cross tabulation of the selected knowledge, attitude, and action questions by age, gender, education, community, and marital status, along with the results of chi-square test of significance, are presented in Table 1. Table 1 shows the relationships between public action (practices), knowledge, and attitude related to HIV/AIDS by participants' age, gender, level of education, community setting, and marital status. The bold-face numbers indicate that the listed variables

Figure 1.

Using a condom to prevent getting the AIDS virus through sexual activity is:

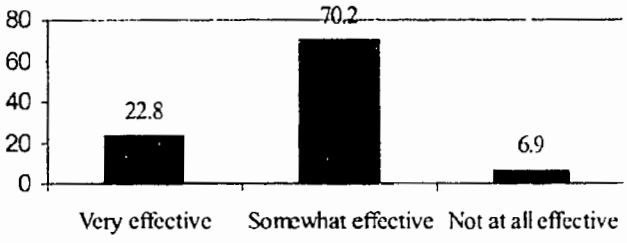

Figure 2.

Using a condom to prevent getting the AIDS virus through sexual activity is:

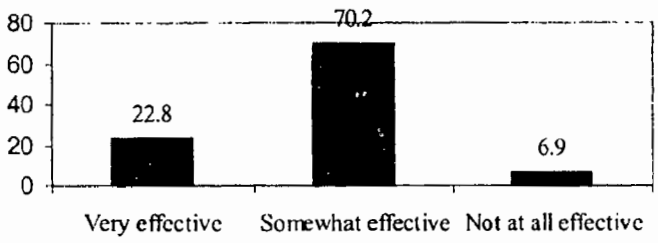

Figure 3.

Your chances of having the AIDS virus are:

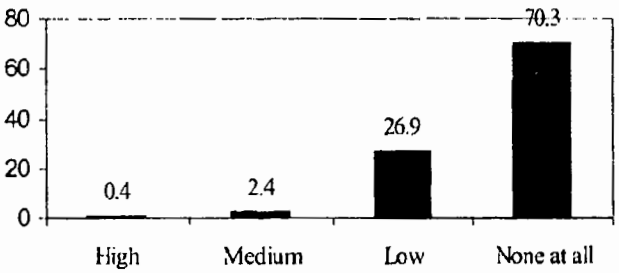

Figure 4.

Your chances of getting the AIDS virus are:

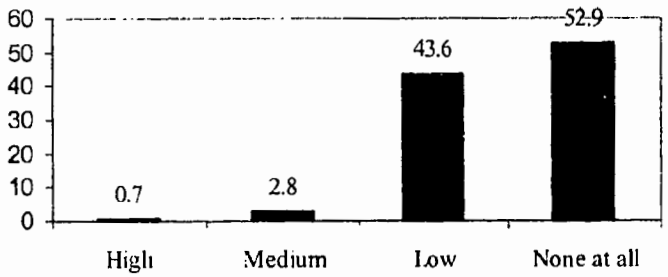

Table 1: Estimates of the percent of responses on public action and public knowledge and attitude from the 1996 Indiana survey, by selected characteristics.

		Age				*Gender*		*Education*			*Community*				*Marriage*		
	Total	18-29 years	30-44 years	45-64 years	65 or older	Male	Female	Less than 12	12 years	More than 12	City	Sub-urban	Small town	Rural	Married	Never married	Others
Public Action																	
1. In the past month, have you seen public service announcements about AIDS on TV?																	
Yes	*64*	68	68	60	57	62	65	61	67	62	63	63	63	68	62	66	65
No	*36*	32	32	40	43	38	35	39	33	38	37	37	37	32	38	34	35
2. Have you ever read brochures or pamphlets about AIDS?																	
Yes	*71*	**79**	**73**	**66**	**60**	**63**	**76**	**55**	**68**	**75**	74	72	71	63	**68**	**80**	**71**
No	*29*	**21**	**27**	**34**	**40**	**37**	**24**	**45**	**32**	**25**	26	28	29	37	**32**	**20**	**29**
3. Have you ever donated blood?																	
Yes	*44*	39	48	45	40	**51**	**39**	**26**	**37**	**51**	44	49	43	42	**48**	**42**	**37**
No	*56*	61	52	55	60	**49**	**61**	**74**	**63**	**49**	56	51	57	58	**52**	**58**	**63**
4. Have you ever discussed AIDS with children age 10 through 17?																	
Yes	*79*	60	80	82	100	**68**	**87**	87	80	77	76	72	86	78	79	100	80
No	*21*	40	20	18	0	**32**	**13**	13	20	23	24	28	14	22	21	0	20
5. Have you ever discussed AIDS with a friend or relative?																	
Yes	*78*	**82**	**80**	**80**	**64**	**71**	**83**	**62**	75	**83**	77	82	77	78	77	79	80
No	*22*	**18**	**20**	**20**	**36**	**29**	**17**	**38**	25	**17**	23	18	23	22	23	21	20
6. Have you ever had a talk with a health professional about taking the AIDS virus test?																	
Yes	*24*	**34**	**30**	**14**	**8**	23	25	**18**	**16**	**30**	30	22	24	18	22	27	27
No	*76*	**66**	**70**	**86**	**92**	77	75	**82**	**84**	**70**	70	78	76	82	78	73	73
7. Have you discussed taking the AIDS virus test with a private doctor?																	
Yes	*60*	55	60	62	83	56	62	56	72	56	63	58	64	41	59	45	69
No	*40*	45	40	38	17	44	38	44	28	44	37	42	36	59	40	55	31
8. Have you called an AIDS hotline to discuss taking the AIDS virus test?																	
Yes	*5*	4	9	0	0	8	4	0	3	7	3	8	7	5	4	13	4
No	*95*	96	92	100	100	92	96	100	97	93	97	92	93	95	96	87	96
9. Have you discussed taking the AIDS virus test at a prenatal clinic?																	
Yes	*14*	**26**	**10**	**4**	**0**	**3**	**20**	11	23	11	13	8	14	23	17	10	11
No	*86*	**74**	**90**	**96**	**100**	**97**	**80**	89	77	89	87	92	86	77	83	90	89
10. Have you discussed taking the AIDS virus test at an STD clinic?																	
Yes	*14*	19	11	12	17	16	13	22	10	14	17	16	13	5	**6**	**27**	**19**
No	*86*	81	89	88	83	84	87	78	90	86	83	84	87	95	**94**	**72**	**81**
11. Have you had your blood tested for the AIDS virus infection?																	
Yes	*39*	**53**	**48**	**26**	**13**	42	37	**27**	**32**	**45**	**45**	**43**	**39**	**28**	38	37	44
No	*61*	**47**	**52**	**74**	**87**	58	63	**73**	**68**	**55**	**55**	**57**	**61**	**72**	62	63	56
12. Was your blood test for AIDS virus infection:																	
Part of a blood donation	*8*	9	6	13	0	4	10	0	9	8	5	5	9	19	**7**	**8**	**10**
Voluntary	*38*	31	43	29	60	32	41	40	36	38	44	50	34	19	**24**	**38**	**59**
Other activities	*54*	60	51	58	40	64	49	60	55	54	51	45	57	62	**69**	**54**	**31**
13. Did you get the results of your test?																	
Yes	*85*	91	85	80	60	84	85	100	75	89	**95**	**90**	**81**	**63**	82	85	88
No	*15*	9	15	20	40	16	15	0	25	11	**5**	**10**	**19**	**37**	18	15	12
14. Were your blood tests for AIDS virus infection part of a blood donation?																	
Yes	*38*	39	37	43	20	**47**	**30**	25	38	40	33	57	35	33	**39**	**55**	**26**
No	*62*	61	63	57	80	**53**	**70**	75	62	60	67	43	65	67	**61**	**45**	**74**

(Numbers in bold-face indicate statistic significance at .05 level on Chi-square tests.)

Table 1: Estimates of the percent of responses on public action and public knowledge and attitude from the 1996 Indiana survey, by selected characteristics (continued).

		Age				Gender		Education			Community				Marriage		
	Total	18-29 years	30-44 years	45-64 years	65 or older	Male	Female	Less than 12	12 years	More than 12	City	Sub-urban	Small town	Rural	Married	Never married	Others
15. Do you expect to have a blood test for the AIDS virus infection in the next 12 months?																	
Yes	17	**31**	**29**	**8**	**3**	20	15	21	16	18	22	15	17	10	**10**	**37**	**20**
No	83	**69**	**80**	**92**	**97**	80	85	79	84	82	78	85	83	90	**90**	**63**	**80**
16. Will the test be.																	
Part of a blood donation	30	**18**	**39**	**36**	**50**	**37**	**24**	0	29	35	29	31	28	42	**44**	**28**	**18**
Voluntary	49	**67**	**41**	**21**	**0**	**33**	**63**	90	51	41	44	56	54	33	**25**	**57**	**63**
Other activities	21	**15**	**20**	**43**	**50**	**30**	**13**	10	20	24	27	13	18	25	**31**	**15**	**19**
Public Knowledge & Attitude																	
17. Is there a difference between having the AIDS virus and having the disease AIDS?																	
Yes	85	81	85	86	88	85	85	**75**	**83**	**87**	83	86	83	89	84	83	87
No	15	19	15	14	12	15	15	**25**	**17**	**13**	17	14	17	11	16	17	13
18. AIDS can reduce the body's natural protection against disease. Do you believe it is:																	
Definitely true	76	**81**	**81**	**74**	**61**	77	76	**54**	**68**	**85**	76	80	75	75	75	82	75
Probably true	19	**17**	**16**	**21**	**24**	19	18	**28**	**25**	**13**	17	19	20	19	19	15	19
Probably false	2	**1**	**2**	**2**	**5**	2	2	**8**	**2**	**1**	3	1	2	3	3	2	2
Definitely false	3	**1**	**1**	**3**	**10**	2	4	**10**	**5**	**1**	4	0	3	3	3	1	4
19. AIDS is especially common in older people. Do you believe it is:																	
Definitely true	1	0	1	0	1	0	1	1	1	0	0	0	1	0	0	1	1
Probably true	4	3	4	3	6	4	4	7	4	3	3	3	5	6	3	5	4
Probably false	36	39	32	35	45	34	38	31	38	37	33	39	37	39	37	34	36
Definitely false	59	58	63	62	48	62	57	61	57	60	64	58	57	55	60	60	59
20. AIDS can damage the brain. Do you believe it is:																	
Definitely true	12	9	12	13	15	10	13	15	11	12	10	11	12	13	**12**	**6**	**14**
Probably true	38	36	36	38	44	35	40	52	38	35	42	36	38	34	**35**	**40**	**43**
Probably false	38	42	40	37	32	42	36	24	41	39	34	40	39	43	**42**	**40**	**31**
Definitely false	12	13	12	12	9	13	11	9	10	14	14	13	11	10	**11**	**14**	**12**
21. AIDS usually leads to heart disease. Do you believe it is:																	
Definitely true	3	2	2	2	6	3	2	**7**	**3**	**2**	2	0	4	3	2	2	3
Probably true	30	27	32	27	34	25	33	**45**	**32**	**25**	29	27	30	33	31	22	32
Probably false	49	53	48	48	43	50	48	**37**	**48**	**51**	46	55	48	48	48	54	46
Definitely false	19	18	18	23	17	22	17	**11**	**17**	**22**	23	18	18	16	19	22	19
22. AIDS is an infectious disease caused by a virus. Do you believe it is:																	
Definitely true	64	**79**	**72**	**55**	**39**	64	64	**54**	**56**	**71**	66	59	67	60	**62**	**79**	**61**
Probably true	27	**18**	**22**	**32**	**42**	30	25	**28**	**34**	**22**	25	34	25	28	**28**	**18**	**29**
Probably false	4	**2**	**2**	**5**	**11**	3	5	**8**	**4**	**4**	6	2	3	6	**4**	**2**	**6**
Definitely false	5	**1**	**4**	**8**	**8**	3	6	**10**	**6**	**3**	3	5	5	6	**6**	**1**	**4**
23. Teenagers cannot get AIDS Do you believe it is:																	
Definitely true	2	**0**	**1**	**2**	**6**	**1**	**2**	**8**	**1**	**1**	2	1	2	1	**1**	**0**	**4**
Probably true	1	**0**	**0**	**1**	**5**	**1**	**1**	**4**	**2**	**0**	0	1	1	2	**1**	**2**	**0**
Probably false	1	**0**	**1**	**3**	**2**	**2**	**1**	**1**	**2**	**1**	2	2	2	0	**2**	**0**	**2**
Definitely false	96	**100**	**98**	**94**	**87**	**96**	**96**	**87**	**95**	**98**	96	96	95	97	**96**	**98**	**94**
24. AIDS leads to death. Do you believe it is:																	
Definitely true	70	68	72	71	69	**65**	**74**	**85**	**75**	**64**	70	63	74	70	68	67	77
Probably true	23	24	21	24	26	**26**	**21**	**11**	**20**	**27**	23	30	20	24	25	27	18
Probably false	5	5	6	3	4	**7**	**3**	**1**	**3**	**6**	4	6	4	4	5	5	3
Definitely false	2	3	2	2	1	**2**	**2**	**3**	**2**	**3**	3	1	2	2	2	1	2
25. A person can be infected with the AIDS virus and not have the disease AIDS. Do you believe it is:																	
Definitely true	60	**64**	**65**	**58**	**44**	56	63	**43**	**55**	**66**	61	61	59	58	60	68	56
Probably true	29	**23**	**25**	**33**	**43**	32	27	**42**	**34**	**24**	26	28	30	34	29	21	33
Probably false	6	**8**	**5**	**4**	**9**	5	6	**8**	**5**	**6**	7	5	6	4	5	6	7
Definitely false	5	**5**	**5**	**5**	**4**	7	4	**7**	**6**	**4**	6	6	5	4	6	5	4

(Numbers in bold-face indicate statistic significance at .05 level on Chi-square tests.)

Table 1: Estimates of the percent of responses on public action and public knowledge and attitude from the 1996 Indiana survey, by selected characteristics (continued).

		Age				Gender		Education			Community				Marriage		
	Total	18-29 years	30-44 years	45-64 years	65 or older	Male	Female	Less than 12	12	More than 12	City	Sub-urban	Small town	Rural	Married	Never married	Others
26. Looking at a person is enough to tell if he or she has the AIDS virus. Do you believe it is:																	
Definitely true	2	0	1	1	5	1	2	6	1	1	2	1	1	1	1	0	4
Probably true	3	0	2	4	10	4	3	8	4	2	2	4	4	4	4	2	3
Probably false	12	8	8	14	23	13	11	16	12	10	11	13	12	12	11	9	13
Definitely false	83	92	89	81	62	82	84	70	83	87	85	82	83	83	84	89	80
27. Any person with the AIDS virus can pass it on to someone else during sexual intercourse. Do you believe it is:																	
Definitely true	84	89	81	83	82	79	86	95	83	82	85	80	82	86	80	89	86
Probably true	13	9	15	13	16	17	11	4	13	15	12	18	14	11	16	8	12
Probably false	2	2	2	3	1	3	2	0	2	2	2	1	3	2	3	2	1
Definitely false	1	0	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1
28. A person with the AIDS virus can look and feel healthy and well. Do you believe it is:																	
Definitely true	69	80	75	63	48	69	69	55	61	76	71	70	69	65	68	76	67
Probably true	26	17	22	31	40	26	26	31	33	21	25	28	25	28	28	18	26
Probably false	3	2	2	4	6	3	3	8	3	2	2	2	3	5	4	2	2
Definitely false	2	1	1	2	6	2	2	6	3	1	2	0	3	2	0	4	5
29. A pregnant woman with AIDS virus can give the AIDS virus to her baby. Do you believe it is:																	
Definitely true	74	76	78	73	61	67	78	74	70	76	73	73	75	73	71	79	75
Probably true	24	22	20	26	34	30	20	25	27	22	24	25	23	26	26	21	22
Probably false	2	2	2	1	5	3	2	1	3	2	3	2	2	1	3	0	3
30. There is a vaccine available to the public that protects a person from getting the AIDS virus. Do you believe it is:																	
Definitely true	1	1	0	0	3	1	1	3	1	1	1	0	1	1	1	0	2
Probably true	5	3	3	6	11	4	6	12	8	2	5	2	7	4	4	7	5
Probably false	20	25	16	17	31	19	21	28	24	16	24	21	19	15	18	24	23
Definitely false	74	71	81	77	55	76	72	57	67	81	70	77	73	80	77	69	70
31. There is no cure for AIDS at present. Do you believe it is:																	
Definitely true	79	84	83	77	70	76	82	75	76	82	81	83	77	79	77	82	83
Probably true	13	9	11	16	18	16	11	9	15	12	13	11	15	10	15	12	10
Probably false	2	2	2	1	2	2	2	1	3	2	2	2	1	3	2	1	2
Definitely false	6	5	4	6	10	6	5	15	6	4	4	4	7	8	6	5	5
32. A person will get AIDS from working near someone with the AIDS virus. Do you think it is:																	
Very likely	2	1	1	2	6	1	2	5	2	1	1	2	2	3	2	1	2
Somewhat likely	9	10	8	6	15	8	10	17	12	6	9	5	11	9	9	10	8
Somewhat unlikely	16	16	17	15	15	19	14	22	19	13	16	18	16	15	16	17	15
Very unlikely	42	39	42	44	44	43	42	26	40	47	42	46	42	41	44	43	40
Definitely not possible	31	34	32	33	20	29	32	30	27	33	32	29	29	32	29	29	35
33. A person will get AIDS infection from eating in a restaurant where the cook has the AIDS virus. Do you think it is:																	
Very likely	5	4	3	5	8	4	5	15	5	3	6	3	3	6	3	8	5
Somewhat likely	16	15	16	17	19	17	15	19	21	13	14	11	17	23	16	18	17
Somewhat unlikely	23	22	25	19	26	23	23	20	27	20	25	25	21	19	24	19	24
Very unlikely	40	42	37	41	40	43	38	29	34	45	40	44	39	38	41	40	37
Definitely not possible	16	17	19	18	7	13	19	17	13	19	15	17	20	14	16	15	17
34. A person will get AIDS infection from kissing, with exchange of saliva, someone who has the AIDS virus. Do you think it is:																	
Very likely	23	9	20	32	34	22	23	30	26	19	23	22	23	20	25	12	23
Somewhat likely	26	19	28	26	33	30	24	29	30	24	27	21	25	34	28	24	26
Somewhat unlikely	20	27	23	12	17	21	20	16	19	22	16	26	24	16	20	26	18
Very unlikely	22	28	20	22	14	20	23	14	17	26	24	21	21	19	20	29	21
Definitely not possible	9	17	8	8	2	7	10	11	8	9	10	10	7	11	7	9	12
35. A person will get AIDS infection from shaking hands, touching, or kissing on the cheek with someone who has the AIDS virus. Do you think it is:																	
Very likely	1	0	1	1	3	1	2	4	2	0	0	1	3	0	1	1	2
Somewhat likely	3	2	3	2	4	3	2	6	4	2	4	2	2	3	3	5	2
Somewhat unlikely	13	9	15	11	17	17	10	8	14	13	13	13	11	15	14	16	9
Very unlikely	38	27	34	47	47	41	36	35	41	36	33	43	38	42	39	32	39
Definitely not possible	45	62	47	39	29	38	50	47	39	49	50	41	46	40	43	46	48

(Numbers in bold-face indicate statistic significance at .05 level on Chi-square tests.)

Table 1: Estimates of the percent of responses on public action and public knowledge and attitude from the 1996 Indiana survey, by selected characteristics (continued).

		Age				Gender		Education			Community				Marriage		
	Total	18-29 years	30-44 years	45-64 years	65 or older	Male	Female	Less than 12	12 years	More than 12	City	Sub-urban	Small town	Rural	Married	Never married	Others
36. A person will get AIDS infection from using public toilets. Do you think it is:																	
_ Very likely	*4*	**3**	**4**	**5**	**4**	**3**	**5**	**7**	**6**	**3**	4	2	5	3	4	2	5
_ Somewhat likely	*11*	**11**	**8**	**10**	**17**	**8**	**12**	**18**	**14**	**7**	10	7	12	12	8	13	13
_ Somewhat unlikely	*16*	**15**	**17**	**15**	**19**	**19**	**15**	**17**	**21**	**13**	17	21	15	14	17	16	15
_ Very unlikely	*36*	**33**	**34**	**37**	**44**	**40**	**33**	**31**	**34**	**38**	31	35	36	44	38	35	33
_ Definitely not possible	*33*	**38**	**37**	**33**	**16**	**30**	**35**	**27**	**25**	**39**	38	35	32	27	33	34	34
37. A person will get AIDS infection from sharing needles for drug use with someone who has the AIDS virus. Do you think it is:																	
_ Very likely	*97*	98	98	96	95	96	98	96	97	97	96	97	98	96	97	97	97
_ Somewhat likely	*3*	2	2	4	5	4	2	4	3	3	4	3	2	4	3	3	3
38. A person will get AIDS infection from being coughed on or sneezed on by someone with the AIDS virus. Do you think it is:																	
_ Very likely	*6*	**2**	**5**	**5**	**17**	**3**	**8**	**15**	**8**	**3**	8	1	7	5	**5**	**3**	**10**
_ Somewhat likely	*20*	**13**	**19**	**26**	**25**	**23**	**18**	**21**	**23**	**19**	20	20	17	28	**23**	**16**	**18**
_ Somewhat unlikely	*20*	**21**	**21**	**18**	**19**	**22**	**19**	**17**	**23**	**19**	17	20	22	20	**21**	**20**	**18**
_ Very unlikely	*37*	**35**	**37**	**38**	**34**	**36**	**37**	**35**	**32**	**39**	36	43	34	36	**36**	**37**	**36**
_ Definitely not possible	*17*	**29**	**18**	**13**	**5**	**16**	**18**	**12**	**14**	**20**	19	16	20	11	**15**	**24**	**18**
39. A person will get AIDS infection from attending school with someone who has the AIDS virus. Do you think it is:																	
_ Very likely	*2*	**2**	**2**	**0**	**5**	**1**	**2**	**7**	**2**	**1**	1	1	3	3	1	2	3
_ Somewhat likely	*3*	**1**	**2**	**4**	**6**	**2**	**4**	**14**	**1**	**2**	3	2	2	3	2	2	5
_ Somewhat unlikely	*11*	**6**	**12**	**10**	**15**	**14**	**8**	**12**	**15**	**8**	11	9	12	10	12	10	9
_ Very unlikely	*39*	**31**	**38**	**40**	**54**	**41**	**38**	**32**	**41**	**40**	33	44	40	44	40	35	41
_ Definitely not possible	*45*	**60**	**46**	**46**	**20**	**42**	**48**	**35**	**41**	**49**	52	44	43	40	45	51	42
40. A person will get AIDS infection from mosquitoes or other insects. Do you think it is:																	
_ Very likely	*8*	9	8	6	10	7	8	**15**	**11**	**4**	8	2	11	8	8	4	10
_ Somewhat likely	*19*	19	22	18	14	19	19	**28**	**21**	**17**	20	18	18	20	19	23	18
_ Somewhat unlikely	*16*	16	15	16	15	15	16	**18**	**16**	**14**	13	17	16	18	16	16	14
_ Very unlikely	*34*	37	30	33	41	37	32	**24**	**33**	**37**	34	36	32	36	33	37	34
_ Definitely not possible	*23*	19	25	27	20	22	25	**15**	**19**	**28**	25	27	23	18	24	20	24
41. Have you ever heard of a blood test that can detect the AIDS virus infection?																	
_ Yes	*84*	**86**	**90**	**84**	**65**	82	85	**65**	**80**	**90**	83	90	84	80	84	87	82
_ No	*16*	**14**	**10**	**16**	**35**	18	15	**35**	**20**	**10**	17	10	16	20	16	13	18
42. To the best of your knowledge, are blood donations routinely tested now for the AIDS virus infection?																	
_ Yes	*96*	96	97	96	92	95	97	94	95	96	96	97	96	94	97	96	94
_ No	*4*	4	3	4	8	5	3	6	5	4	4	3	4	6	3	4	6
43. Do you think the present supply of blood is safe for transfusions?																	
_ Yes	*76*	82	74	76	71	**80**	**73**	**51**	**74**	**81**	**75**	**87**	**72**	**76**	**78**	**79**	**70**
_ No	*24*	18	26	24	29	**20**	**27**	**49**	**26**	**19**	**25**	**13**	**28**	**24**	**22**	**21**	**30**
44. A woman uses a diaphragm to prevent getting the AIDS virus through sexual activity. Do you think it is:																	
_ Very effective	*2*	**0**	**1**	**3**	**2**	**2**	**1**	3	2	1	1	5	2	0	1	1	2
_ Somewhat effective	*19*	**22**	**15**	**18**	**29**	**23**	**17**	29	19	18	18	18	22	18	17	25	21
_ Not at all effective	*79*	**78**	**84**	**79**	**69**	**75**	**82**	68	79	81	81	77	76	82	82	74	77

(Numbers in bold-face indicate statistic significance at .05 level on Chi-square tests.)

Table 2. Demographic Characteristics of the National and The State of Indiana Samples.

		National Percentage (n=20974)	Indiana Percentage (n=829)
Age	18 - 29	22.3	21.8
	30 - 49	41.6	46.1
	50 and over	36.1	32.1
Education	< 12 years	20.7	9.0
	12 years	36.6	36.6
	> 12 years	42.7	54.4
Gender	Males	42.5	41.3
	Females	57.5	58.7

are statistically significant at .05 by chi-square test. This table format is consistent with the Health Statistics Report of the National Center for Health Statistics with the following exceptions. In this article, the variables on community setting and marital status have been added, along with statistical tests of significance. Due to space limitations and self explanatory nature of the table, it is not feasible to discuss every item in Table 1 here. However, few of the important items are summarized as follows.

Question number 11, which is whether or not they have had a blood test for the AIDS virus infection, was statistically related to age, education, community setting, and marital status. In other words, the younger, the more educated, from larger cities, and single people were more likely to have had their blood tested for the infection. With regard to question number 13, people from larger cities and single were more likely to get the results of their blood tests. As expected, question number 17 was statistically related to the participants' level of education. Those with higher educational backgrounds were more likely to know that there is a difference between having the AIDS virus and having the disease of AIDS.

Question 22 states that "AIDS is an infectious disease caused by a virus." This variable was statistically related to age, education, and marital status. Again, younger, more educated, and married people were more likely to believe that statement is definitely true. Overall, 65% of the subjects definitely believe that AIDS is an infectious disease caused by a virus.

With regard to question number 25, 60% believe that "a person can be infected with the AIDS virus and not have the disease AIDS" is definitely true. About 21% think it is very likely or somewhat likely that a person will get AIDS infection from eating in a restaurant where the cook has the AIDS virus (question 33). The question number 36 stating that a person will get AIDS infection from using public toilets was statistically related to the subjects age, gender, and level of education. In other words, older, female, and less educated subjects were more likely to think that a person will get AIDS infection from using public toilets. Overall, about 15% think the above statement is very likely or somewhat likely.

With regard to question number 41, have you ever heard of a blood test that can detect the AIDS virus infection, 16% responded "no." This statement was statistically related to age, education, and again, older, and less educated were more likely to be uninformed of the availability of the AIDS test. About 24% do not think that the present supply of blood is safe. Males, more educated, from city and suburban communities, and married people were more likely to think that the supply of blood is safe for transfusions. Finally, as Table 1 shows, about 21% think that if "a woman uses a diaphragm to prevent getting the AIDS virus through sexual activities" it is very effective or somewhat effective.

Comparison with National Data: Recognizing the time difference between the national data regarding AIDS knowledge and attitude (National Center for Health Statistics, 1994) and this survey, it still may be useful to compare selected variables between the state of Indiana and the national data. The demographic comparison is presented in Table 2.

As Table 2 shows, the percentage distribution for both groups with regard to age and gender is reasonably similar. The subjects' distribution by education is somewhat different.

Knowledge comparison between the two groups with regard to public awareness campaigns about AIDS on television was examined. Table 3 shows the comparison on how much the two groups knew about AIDS, and whether they had seen or heard announcements about AIDS on television. Chi-square test showed significant statistical differences from their responses

Table 3. Comparison of Knowledge and Awareness of Public Campaigns

	Indiana	National	Chi-square
How much would you say you know about AIDS			
A lot	19%	26%	87.42*
Somewhat	58	45	
A little	21	21	
Nothing	2	7	
Seen Announcements about AIDS on television	Yes 64 No 36	Yes 86 No 14	286.74*
Heard announcements about AIDS on television	Yes 27 No 73	Yes 51 No 49	179.58*

(see Table 3). When looking at the question as to how much the subjects know about AIDS, 26% of the national subjects and 19% of Indiana subjects indicated they knew a lot, but the overall majority differed significantly by indicating that they knew "somewhat" to "a little." Table 3 also shows that higher percentages of the public at the national level had seen or heard announcements about AIDS on television than their Indiana counterpart. These differences are statistically significant.

The groups' knowledge and attitudes related to mode of transmission of AIDS/HIV were also compared. When asked about the use of condoms to prevent getting the AIDS virus, both samples differed significantly ($p < .05$) in their responses. A low percentage of the subjects from both groups (23% vs 27%) thought condoms were very effective, but the gap between the majority (70% vs 55%) was noticeable by the indication that condoms were somewhat effective in preventing the contraction of the AIDS virus. Even with such a response, both groups thought their chances of having the AIDS virus were low to none. They differed, however, in the expression about the chances of actually getting the virus. The national subjects had a slightly higher percentage response than Indiana subjects (66% vs 35%) in this category. In the investigation of the subjects' attitude towards contracting the AIDS/AIDS virus, comparisons were made of the subjects' likelihood of getting the disease under different conditions of everyday life. Again, using Chi-square analysis, there were observable significant differences ($p < .05$) between the groups. Both differed over the expression that it was somewhat unlikely to very unlikely for a person to get AIDS or AIDS infection working near someone with the AIDS virus, and eating in a restaurant where the cook has the virus ($p < .05$). Indiana subjects were less definite (31% vs 38%) than the national subjects about contracting the disease this way. With regards to getting the HIV AIDS virus from using public toilets, a lower percentage of the national subjects thought it was definitely not possible (28% vs 33%) than Indiana subjects. The majority of individuals from both groups were more confident of themselves as they indicated in identical responses that this mode of disease transmission was somewhat unlikely to very unlikely. When looked at sharing of plates, forks, or glasses with someone who has the AIDS virus, Indiana subjects were more positive than the national subjects ($p < .05$) in the expression that it was some what unlikely to very unlikely to get the HIV/AIDS virus this way. The subjects also differed in their beliefs that it was somewhat unlikely for mosquitoes or other insects to transmit the disease. Further, they thought it was very unlikely for one to get the infection if one was coughed or sneezed on by someone who has the AIDS virus ($p < 0.05$). There was a split in the response as to whether attending school with a person who has the AIDS virus is a likely way for getting HIV/AIDS virus; however, Indiana subjects had a stronger belief than the national subjects (45% vs 38%). The groups also differed in their response ($p < 0.05$) that it was very unlikely to get the disease attending school with a person with the AIDS virus (47% vs 39%). Except for some minor differences, the majority of the subjects from both groups thought it was very unlikely that people can get the HIV/AIDS virus from mosquitoes or other insects.

Discussion and Recommendations

The study revealed considerable misunderstanding, misconception, and lack of knowledge about HIV/AIDS prevention among adult residents of Indiana. For instance, still about 15% of the public did not differentiate between having the AIDS virus and having the disease AIDS. Only about

76% of the public believed that AIDS can definitely reduce the body's natural immunity against defense. Again, only 64% definitely believed that AIDS is an infectious disease caused by a virus. Still, about 5% of the public believed that looking at a person is enough to tell if he or she has the AIDS virus. About 8% believed that there is a cure for AIDS. About 11% believed that a person will get AIDS from working near someone with the AIDS virus. Approximately 16% have not heard of a blood test that can detect the AIDS virus. Nearly 24% did not believe that the present supply of blood is safe for transfusions. These simple facts clearly indicate a serious need for HIV/AIDS education throughout the state. Based on Table 1, one can make the following conclusion. Generally speaking, younger, female, single, highly educated, and urban groups were more knowledgeable and had more positive attitudes toward HIV/AIDS prevention.

Subjects from both the state and national groups (U.S. Centers for Disease Control Prevention, 1994) were generally familiar with the HIV/AIDS virus at about the same level; the gap in knowledge differences between the groups was profoundly in favor of the national subjects since they showed a higher level of awareness and also believed certain statements to be true more than false concerning HIV/AIDS infection, including the mode of transmission. However, this can be attributable to several reasons including the time difference, the unequal number of subject representation, and the possibility that the national subjects may have a higher information exposure relative to the HIV/AIDS virus than Indiana subjects. This was not necessarily the focus of the investigation. This is consistent with the argument that a wider exposure may have been responsible for the difference. Among the most important findings were responses relating to the fact that AIDS is caused by a virus, and that AIDS can damage the brain. Respondents from both groups also knew on a higher level that one can be infected and not have the disease, and there is no cure for AIDS at the moment.

In order for preventive efforts to have reached a large number of the population, messages would have been received through different advertisement media as evidenced in the responses by the participants. This is particularly significant because the deadly nature of the disease is a very important public health issue and public awareness cannot be overemphasized. We should note that every state in the nation has a different approach and commitment to issues regarding the HIV/AIDS virus; therefore, the differences in public knowledge and attitude within any given state may be dependent on general educational efforts and public awareness as well as the availability of prevention programs supported by unrelenting commitment of both state and local governments to addressing critical issues regarding the HIV/AIDS virus.

With regards to attitude, the study population had different responses to items relating to the questions investigated. These had to do with the likelihood of AIDS infection contraction within the public arena. Fewer subjects from Indiana thought that working with someone with AIDS is a likely way through which a person can get the AIDS infection. Conversely, the majority of the respondents thought it was somewhat unlikely, but definitely not possible, to contract the HIV/AIDS virus from eating in a restaurant where the cook has the AIDS virus; neither was it possible to contract the infection from sharing of plates and glasses nor from the use of public toilets. Nearly all of the subjects indicated it was very likely to get the infection by sharing needles for drug use with someone who has the AIDS virus. These findings are significant because although there may have been differences in the general knowledge and attitudes about AIDS and the AIDS virus, the subjects knew that casual association is not a mode of transmission for AIDS. This important element cannot be overlooked because knowing the mode of transmission of any disease is a focal point for its prevention. The more the general public is aware of HIV/AIDS virus transmission, the more effective preventive efforts may be.

The difference in responses from Indiana and the national data concerning the effectiveness of condom use and personal vulnerability to the AIDS virus is striking. It is evident that while there is public awareness about AIDS in the media, there is also the need for public education about the use and effectiveness of the condom. This includes availability and accessibility to programs that teach skill development, the correct method for condom use, and the proper technique of use. There is evidence from this investigation that continuous education about the HIV/AIDS virus is still a critical factor in the control and containment of the disease. The general public needs health educators more intensively in every state in the nation, particularly from those that share conservative views about the use of condoms. It appears there is some lack of clarity among Indiana subjects as to how much they know about AIDS. Whereas, they present affirmative responses to most questions under inquiry, the lack of high percentage of definitive responses to issues such as personal vulnerability to AIDS means that the state could be a step behind in public education about AIDS infection.

This investigation presents the need for consistency of public awareness campaigns against AIDS regardless of moral and ideological beliefs of individual states in the nation. Only then can the public distinguish between what is fact or fiction regarding the contraction of AIDS. Secondly, the expansion of educational campaigns through the print and electronic media is necessary. In some locations of the public sector, there may only be one effective way of reaching a large segment of the population such as through newspapers and other dailies. Those avenues should be explored as possible ways of education and investigation of knowledge, attitudes, and practice with regard to the prevention of the HIV/AIDS virus. Perhaps such endeavors would not disregard the sensitivity of the subject within communities, but the message content should be factual enough to close the gap between what is fact and how much people know about AIDS on a general basis.

The findings of the study suggest the following

recommendations:

1. To design effective educational intervention, it is important that public knowledge, attitude, and practices be systematically investigated.
2. To monitor progress and establish any trends in public awareness with regard to HIV/AIDS prevention in the State, this epidemiological study should be replicated about every two years.
3. Specific misunderstanding and misconception and any myth related to prevention, mode of transmission, and HIV blood testing should be taken into consideration in any public education campaign. It is critically important that the public be fully informed with facts so they can protect themselves and their communities from further spread of the infection.
4. While this study revealed specific information about public knowledge, attitude, and action related to HIV/AIDS prevention, we lack similar data from most vulnerable target populations, namely adolescents and young adults. Consequently, it is important that we also consider studying routinely this group's knowledge, attitude, and practices on HIV/AIDS prevention.

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Health Motivation and HIV Risk Behavior Among College Students From Urban and Rural Communities

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Introduction

The year 1981 marked the onset of the human immunodeficiency virus and acquired immunodeficiency syndrome (HIV/AIDS) epidemic in the United States (Rathus & Boughn, 1994). Initially, the epidemic was isolated among young homosexual men and individuals who shared needles for injecting drugs. Today, the incidences of HIV infection and AIDS are growing more among women, teenagers, and children. Without medical technology available to prevent the acquisition and transmission of HIV infection, prevention education is an important method available to stop this disease from affecting more people. By introducing the facts about HIV/AIDS, educators present basic information for individuals. Nonetheless, educational programs may need to include theoretical components that can help educators understand their target population's motivation behind HIV-risk behaviors and thus develop appropriate prevention programs. This study utilized the Health Motivation Model to determine the motivational factors that affect college students toward HIV prevention and how this information can be used in HIV/AIDS educational programs. By 1992, HIV infection had become the sixth leading cause of death in young people (Hein, 1992). In 1993, it was reported that one in five of all reported cases of AIDS was among the 30-39 year age group (Centers for Disease Control and Prevention [CDC], 1993). As the infection rate continued to increase, the Centers for Disease Control and Prevention (1995a) reported in 1995 that HIV disease was the leading cause of death among people 25-44 years of age. Currently, men having sex with men continues to be the leading transmission mode and the number of people most infected with AIDS are between the ages of 30 and 39 (CDC, 1997).

It is estimated that one in 500 college students is infected with HIV and one in four new infections occurs in people under age twenty-two (Douglas, Warren, Kahn, & Collins, 1995). HIV has had an impact on this population because it is during the period of adolescence that HIV-risk related sexual and drug activities begin (Hein, 1987). Since HIV cannot be detected immediately, HIV continues to spread among adolescents and young adults. Therefore, many HIV infected adolescents and young adults are unaware of their HIV positive status and are likely to continue to transmit the virus unknowingly to other sexual and/or injecting drug partners (Hein, 1991). AIDS has become, and will continue to be, a leading killer of young people in the United States.

Since there is a continued concern with the growing number of young adults acquiring HIV infection, research needs to focus on why this group continues to be a high risk population. During the early years of the AIDS epidemic, researchers explored a number of avenues to help explain why young adults are a vulnerable population to HIV infection. Numerous studies were conducted to assess the level of knowledge, attitudes, and behaviors of young adults (Baldwin & Baldwin, 1988; DiClemente, Forrest & Mickler, 1990; Fisher & Misovich, 1990; Mickler, 1993). Based on the findings of these research projects, innovative curricula were developed in order to educate young adults about HIV/AIDS with the goal of limiting the number of young adults becoming infected.

Petosa and Jackson (1991) utilized the Health Belief Model (HBM) to predict safer sex intentions among adolescents, from which they concluded that educational programs to support safer sex intentions should focus on health-related motivations among young students. They further contended that with older adolescents it may be more effective to expand educational efforts to address factors directly related to their motivational schema and environment. It has been found through literature reviews by Fisher and Fisher (1992) that interventions focusing on information and motivation seemed most likely to have a positive effect on AIDS-preventive behavior. Therefore, determining the motivational factors that may assist in preventing HIV among young adults is essential (Petosa & Jackson, 1991; Fisher & Fisher, 1992) toward the overall goal of reducing the annual number of newly infected young adults.

McEwen (1993) utilized the Health Motivation Model to examine the motivation of health promotional behaviors. Specifically, this study focused on determining the variables that would produce and influence the motivation of health promotional behaviors and how these variables interact. Thus, the need to conduct research combining the theory of motivation and HIV prevention is timely and of an urgent nature in order to prevent more young adults from acquiring HIV infection.

HIV/AIDS will have a great impact on the next generation of adults. "Given the latency from time of infection to disease, the vast majority of infected teenagers will not become sick until the very time when they would be joining the labor force, forming families, and entering the most eco-

nomically productive years of their lives" (Hein, 1992, p. 14). Therefore, it is imperative that adolescents and young adults learn HIV prevention skills and that health educators research the best means to reduce the number of individuals becoming HIV infected.

This study specifically surveyed college students from both urban and rural communities about their motivation toward HIV prevention and their current HIV risk behaviors. The intention of this research study is to provide data on college students regarding motivation and HIV risk behaviors and also to examine differences that may exist between students from these two communities.

Background Literature

Since the onset of the AIDS epidemic, adolescents and young adults have been at risk of contracting the human immunodeficiency virus (HIV) because many engage in risky sexual behavior as well as injecting drugs. The high rate of risk-taking behavior suggests that this age group will experience HIV infection at an increased rate (DiClemente, 1990). In the June 1996 CDC Surveillance Report, 18%, or 98,028 cases of AIDS, were within the 20-29 year old age category. In addition, 45% of the AIDS cases fell within the 30-39 year old age group. This supports the 1989 conclusions by the CDC that HIV would continue to increase across the 13-30 year old population (CDC, 1989).

The number of adolescents and young adults age 13-19 years diagnosed with HIV and AIDS in the United States continues to increase. Within a few years, AIDS has become one of the leading causes of death in the United States. According to Hein (1992), AIDS was the ninth leading cause of death among children age one to four, and the sixth leading cause of death among those age fifteen to twenty-four. In the latter age group, the number of AIDS related deaths increased one-hundred fold between the years 1981 and 1987. AIDS as a cause of death, is moving rapidly toward the top five leading causes of death in young people age fifteen to twenty-four (Hein, 1992).

Rural America is not immune to HIV infection as the number of new AIDS cases is multiplying at a rapid rate and the AIDS epidemic has become increasingly dangerous as it spreads into these areas (Lam & Liu, 1994). There was a thirty-seven percent increase in 1989 of diagnosed AIDS cases in rural areas as compared to a five percent increase in areas with a population of over 500,000 (National Commission on AIDS, 1990). In 1990, the CDC stated that twenty percent of the AIDS cases in the United States were diagnosed in rural areas and the AIDS epidemic is shifting from urban areas to rural areas of the South and Midwest (Kaiser Family Foundation, 1996). The CDC (1995a) reported that 5.36% of AIDS cases were found among residents of areas with less than 500,000 in population, indicating that AIDS outside of urban America is rising. Based on the increase of AIDS cases in rural areas, Holmberg (1996) stated that there is a need for epidemiological research and public health interventions to determine why HIV infection continues to be a problem in small cities and rural areas. Therefore, young adults reared in rural communities may have additional concerns and issues surrounding HIV prevention versus those reared in urban communities.

HIV education is desperately needed in rural communities. Ignorance and misinformation impede adequate care for those who require medical treatment as well as those who need to participate in HIV prevention education. Educational programs must be developed based on the unique characteristics of rural communities with dissemination into the community. The programs must be realistic, up-to-date, and directly address all the issues surrounding HIV infection. As the number of AIDS cases continues to rise in the United States, rural America will experience a growing need for education and knowledge, essential components in the fight against HIV, as well as expanded assistance programs for those already affected.

A number of studies in the past have focused on young adults' knowledge, attitude and behavior about HIV/AIDS with the results from these studies applied to educational programming. Researchers found that young adults have a good understanding of the basic facts regarding HIV/AIDS; however, many still engage in high risk behaviors. The Centers for Disease Control and Prevention conducted a study to examine the extent to which American college students are at risk for HIV infection (Douglas, et al., 1995). Labeled The 1995 National College Health Risk Behavior Survey, the study gathered data from a representative sample of full and part- time undergraduate students age 18-24 years, attending both two and four year private and public schools. The results indicated that the high number of sexual partners and lack of consistent condom use put both female and male college students at risk for HIV infection.

Peer pressure, lack of maturity, and alcohol and drug use seem to be the major factors that place college students at risk for HIV infection (CDC,1995b). College students are less likely to take precautions against acquiring HIV when under the influence of mind-altering drugs. Their perceptions of vulnerability significantly decrease and their judgments about perceived risks of a specific situation are altered when influenced by drugs and alcohol. Therefore, if individuals do not perceive themselves as susceptible to particular health threats, they are not likely to adopt self-protective behaviors (Burger & Burns, 1988).

College students continue to practice HIV risk behaviors because they do not feel they are susceptible to acquiring HIV. For example, heterosexuals who do not inject drugs minimize their threat toward HIV infection and tend to underestimate the number of AIDS cases within the population (Mickler, 1993), thus believing that "it-can't-happen-to-me." Mickler's article on college students' perceptions of their own and other people's vulnerability to AIDS discussed a phenomenon called the illusion of unique vulner-

ability (Burger & Burns, 1988). This phenomenon is a self-serving bias that affects individuals' judgment of their personal probability of experiencing a negative incident. Mickler's research on heterosexual college students' vulnerability to AIDS found that the respondents believed they were at low risk for acquiring HIV. The college students also felt they were less susceptible for HIV than other people, even those of the same gender, sexual orientation, and vocation. The majority of participants felt that his or her own chance of contracting HIV was less than 8 in 100. Based on these findings, it was recommended that health educators need to inform and convince young adults that there is a possibility they could contract HIV if they participate in high risk behaviors.

Since the spread of HIV infection is primarily due to the practice of risk behaviors, many researchers examined behavioral theories as a mode to help explain why individuals practice high risk behaviors. Many researchers have stressed the importance of incorporating behavioral theory research with introductory HIV/AIDS education research in order to help explain and predict health-related behaviors. Theories can give educators a framework for the goals of an intervention, or assist in explaining the determinants of risk-taking behaviors when working with defined populations. Utilizing theories to develop HIV prevention programs may help to improve educational efforts, saving valuable time, resources, and lives.

The majority of research on motivation has been traditionally conducted in the areas of behavioral psychology (McClelland, 1985; Weinberger & McClelland, 1990), business administration (Maher & Braskamp, 1986), and most recently in the area of health education (Fisher & Fisher, 1992). According to Weinberger and McClelland, the word "motivation" is derived from the Latin word *movere*, which means "to move." Among many psychological research projects, the question of what motivates individuals to behave in a certain manner has been of keen interest. Psychologists want to reveal the causes of behavior, and motivation is one aspect of human behavior that may assist in answering why people behave in a certain way. Specifically, when studying the concept of motivation, psychologists are attempting to explain the psychological causes of action or behavior (Weinberger & McClelland, 1990). Myers (1989) defined motivation as "a need or desire that serves to *energize* behavior and to *direct* it toward that goal" (p. 349). In fact, in 1981, Kleinginna and Kleinginna (cited in Weinberger & McClelland, 1990), reported ninety-eight separate definitions of motivation, thus showing its diverse phenomena and theoretical orientations.

The movement toward the concepts of health and motivation as an entity in and of itself did not appear in the literature until after the introduction of the Health Belief Model (Rosenstock, 1974). The terms health motivation and wellness motivation have been utilized by health education professionals and nursing professionals in order to help explain and understand the "whys" of behavior. Wellness motivation has been defined by Cox and Wachs (1987) as an individual's intention to initiate and sustain health behavior. Health motivation is defined as constantly changing, multifaceted, interacting forces (either perceived or actual) which affect choices and result in behavior or action(s) that influences the individual's health (McEwen, 1993). Either definition can be used to understand and help define the "whys" of an individual's behavior toward health promotion or destruction. Over the past decade, there have been numerous studies conducted on the relationship between motivation, behavior, and health. Many research studies have been conducted in the fields of physical fitness, cardiovascular health, and other health education areas (Burke, 1987; Clarke, 1991; Fleury, 1991).

Theoretical frameworks are important to the development of HIV prevention programs. Programs are often more distinct and easily evaluated when a specific theoretical base underlies the program (Huszti & Chitwood, 1989). One such model that has been utilized in many areas of health education is the Health Belief Model, which guided the direction and development of the Health Motivation Model. The Health Belief Model was designed to explain health behavior and to help educators understand health motivation and health beliefs while focusing on health preventive actions (McEwen, 1990). Based on this concept, the Health Motivation Model was developed to focus on the motivation of health promotional behaviors. The variables included in the Health Motivation Model are previous knowledge, external aids and hindrances, internal aids and hindrances, perceived value of action, and a catalyst.

HIV/AIDS will have a great impact on the next generation of adults. Since this disease does not show its ill effects until years after the antibodies are detected, many adolescents and young adults will not become ill from HIV until later in life (Hein, 1992). Therefore, it is imperative that adolescents and young adults learn more than just the facts about HIV. They need to learn prevention skills that are based on their behaviors and understand why they chose to participate in high risk behaviors. Utilization of the Health Motivation Model can provide health educators with additional information when developing HIV/AIDS prevention programs. Examining the motivation of young adults toward preventing HIV can give health educators a better understanding of why many individuals in this population continue to practice high risk behaviors. Incorporating the reasons why young adults are not motivated toward HIV prevention can, hopefully, lower the number of infected individuals each year and, ultimately, remove AIDS as a leading killer of this age group.

Methodology

The Health Motivation Assessment Inventory (McEwen, 1990), a self-report instrument, was modified and used to

obtain data for this study. The survey instrument, a modified version of the Health Motivation Assessment Inventory, assessed how an individual was motivated to engage in a behavior which was perceived as beneficial to health, and consisted of 4 demographic questions, 35 health motivation questions, 3 HIV behavioral risk questions, and one open-ended question, the catalyst variable. Subjects were given the instrument to complete during one of their undergraduate health courses.

Results and Discussion

The final study was conducted at three universities in Indiana. The sample of 595 subjects was obtained from 630 questionnaires. Subjects in this study included undergraduate young adults between 18 and 21 years of age.

Treatment of the Data

To test the hypotheses related to the study, (a) 2X2 analysis of variance (ANOVA) procedures were performed on each behavioral variable to test main effects for knowledge (KNOW) and community (COMMUN) as well as for possible knowledge by community interactions, and (b) 2X2 ANOVA procedures were performed on each behavioral variable to test main effects for motivation (MOT) and community (COMMUN) as well as for possible motivation by community interactions. Additionally, qualitative analysis was performed on the open-ended catalyst question. Qualitative data analysis was used as an inductive process of organizing the data into categories and identifying patterns among the categories (Schumacher & McMillan, 1993).

The hypothesis was tested using the null form with an α=.05 as the level of significance for all quantitative statistical procedures.

Sample Characteristics

Table 1 summarizes the frequency and percent of the entire sample for each of the following demographic variables: age, class rank, community (where the subject grew-up), race/ethnicity, gender, number of sexual partners, condom use during last sexual intercourse, and injecting drug use (IDU). Since an aspect of this study was to examine health motivation and HIV risk behaviors among college students from rural communities, data regarding college students from rural communities are also presented in comparison to college students from urban communities.

Demographic Characteristics

The age distribution of the 595 subjects included in this study were primarily 21 years old or older (32%), and the majority were sophomores (29%). The distribution that identified the community where the respondents grew-up consisted of urban (53%) and rural (46%). The racial and/or ethnic distribution was primarily European American (White, 85%). The gender distribution indicated the majority were female (65.9%) and 34.1% were male.

Behavioral Characteristics

Table 1 also presents the behavioral characteristics of the entire sample. With regard to number of lifetime sexual partners, 35% indicated having had sexual intercourse with 1 or 2 partners. With regard to condom use during the last sexual intercourse experience, 141 (23.7%) indicated never having had sexual intercourse. Of those who were sexually active, 230 (38.7%) of the subjects or their partner used a condom during their last sexual intercourse experience, and 224 (37.6%) of the subjects or their partner did not use a condom during their last sexual intercourse experience. The number of subjects who never injected illegal drugs was 98%.

Testing of the Hypothesis

This study involved a convenience sample, examining a set of independent variables, motivation toward HIV prevention (MOT) and community (COMMUN) with the following dependent behavioral variables: number of sexual partners in lifetime; condom use during last sexual intercourse experience; and use of injecting drugs during lifetime. In order to test the hypothesis related to this study, 2X2 Analysis of Variance (ANOVA) methods were applied to each of the dependent variables.

Hypothesis

There is no difference between motivation related to HIV prevention and HIV risk behavior among college students from urban and rural communities.

The percent, mean and frequency of urban and rural subjects' level of motivation toward HIV prevention, and the number of sexual partners during their lifetime was calculated (Table 2). For both urban and rural subjects, the higher the level of motivation toward HIV prevention, the lower the number of sexual partners reported.

To test the null hypothesis, three 2X2 analysis of variance (ANOVA) procedures comparing motivation and community (urban and rural) with each of the HIV risk behavior dependent variables (sexual activity, condom use, and injecting drug use) were conducted. The results of the first ANOVA with the number of sexual partners revealed a significant main effect for motivation (F=34.06, p=.001). A non-significant F-ratio was calculated for community, as well as for the MOT X COMMUN interaction (Table 3).

The percent, mean, and frequency of urban and rural subjects' level of motivation toward HIV prevention and condom use during their last sexual intercourse were calculated. Both the urban and rural groups indicated that with a higher level of motivation toward HIV prevention, condoms were more likely to be used by the subject or their partner (Table 4).

Table ..

Summary of Sample Characteristics

Variable	*f*	Percent	Urban, *f*(%)	Rural, *f*(%)
Age:				
17 yrs	8	1	4 (1)	4 (1)
18 yrs	116	19	65 (21)	51 (18)
19 yrs	159	27	76 (24)	83 (30)
20 yrs	116	20	64 (20)	52 (19)
21 yrs and older	196	33	108 (34)	88 (32)
Class Rank:				
Freshman	149	25	79 (25)	70 (25)
Sophomore	177	30	91 (29)	86 (31)
Junior	133	22	67 (21)	66 (24)
Senior	136	23	80 (25)	56 (20)
Community:				
Urban	317	53	317	
Rural	278	47		278
Race/Ethnicity:				
African American	37	6	28 (9)	9 (3)
American Indian	4	1	3 (1)	1 (1)
Asian American	17	3	12 (4)	5 (2)
European American	511	86	257 (81)	254 (91)
Hispanic American	26	4	17 (5)	9 (3)
Gender:				
Female	392	66	191 (60)	201 (72)
Male	203	34	126 (40)	77 (28)
No. of Sexual Partners:				
Never had sexual intercourse	141	24	81 (25)	60 (22)
Sexual intercourse with 1 or 2 ptnrs	212	36	110 (35)	102 (37)
Sexual intercourse with 3 or 4 ptnrs	108	18	47 (15)	61 (22)
Sexual intercourse with 5 or 6 ptnrs	41	7	25 (8)	16 (5)
Sexual intercourse with 6+ ptnrs	93	15	54 (17)	39 (14)
Condom Use & Last Sexual Intercourse:				
Never had sexual intercourse	141	24	81 (26)	60 (22)
My partner/I used a condom	230	38	125 (39)	105 (38)
My partner/I did not use a condom	224	38	111 (35)	113 (40)
Injecting Drug Use:				
Never injected illegal drugs	587	99	315 (99)	272 (98)
Have injected illegal drugs	8	1	2 (1)	6 (2)

Table 2.

Percent, Mean, and Frequency of Urban and Rural Subjects' HIV Motivation Prevention Level and Number of Sexual Partners During Lifetime

	URBAN			RURAL		
MOTIVATION	%	*Mean	*f*	%	*Mean	*f*
high	87.1	1.0	276	90.6	1.0	252
low	12.9	2.4	41	9.4	2.5	26

(*0=no sexual partners; 1= 1-2 sexual partners; 2=3-4 sexual partners; 3=5-6 sexual partners; 4=6 or more sexual partners)

Table 3.

Subjects' Number of Sexual Partners During Lifetime: Summary of 2X2 Analysis of Variance (ANOVA)

Sources of Variance	SS	df	MS	*F*	*p*-value
Main Effects	60.43	2	30.21	17.71	.001
MOT	59.04	1	59.04	34.60	.001
COMMUN	.12	1	.12	.07	ns
2- Way Interactions	.009	1	.009	.05	ns
MOT COMMUN	.009	1	.009	.05	ns
Explained	60.80	3	20.28	11.88	.001
Residual	1008.34	591	1.71		
Total	1069.19	594	1.80		

Table 4.

Percent, Mean, and Frequency of Urban and Rural Subjects' HIV Motivation Prevention Level and Condom Used During Last Sexual Intercourse

	URBAN			RURAL		
MOTIVATION	%	*Mean	*f*	%	*Mean	*f*
high	87.1	1.0	276	90.6	1.0	252
low	12.9	2.0	41	9.4	2.0	26

(*0=no sexual partners; 1=partner/subject used a condom during last sexual intercourse; 2=partner/subject did not use a condom during last sexual intercourse)

In order to continue to test null hypothesis, a 2X2 analysis of variance (ANOVA) comparing motivation and community with the second dependent variable, condom use during last sexual intercourse, revealed a significant main effect for motivation (F= 38.45, p=.001). A non-significant F-ratio was calculated for community, as well as for the MOT X COMMUN interaction (Table 5).

The percent, mean, and frequency of urban and rural subjects' level of motivation toward HIV prevention and injecting drug use during their lifetime were calculated (Table 6). Injecting drug use was low for both urban and rural subjects, which was also consistent with a high level of motivation toward HIV prevention.

In order to complete the testing of the hypothesis, a 2X2 analysis of variance (ANOVA) comparing motivation and community with the third dependent variable, injecting drug use during lifetime, revealed a significant main effect for community (F= 4.54, p=.007), and for motivation (F= 4.96, p= .007). Additionally, a non-significant F-ratio was calculated for the MOT X COMMUN interaction (Table 7).

Since each of the results of the ANOVA calculations for all three dependent variables did not meet the criteria for significance, the null hypothesis was retained.

Table 5.

Subjects' Condom Use During Last Sexual Intercourse: Summary of 2X2 Analysis of Variance (ANOVA)

Sources of Variance	SS	df	MS	*F*	*p*-value
Main Effects	21.90	2	10.95	19.58	.001
MOT	21.50	1	21.50	38.45	.001
COMMUN	2.31	1	2.31	4.14	ns
2- Way Interactions	.66	1	.66	1.18	ns
MOT COMMUN	.66	1	.66	1.18	ns
Explained	22.89	3	7.63	13.64	.001
Residual	330.53	591	.56		
Total	353.42	594	.60		

Table 6.

Percent, Mean, and Frequency of Urban and Rural Subjects' HIV Motivation Prevention Level and Injecting Drug Use During Lifetime

	URBAN			RURAL		
MOTIVATION	%	*Mean	*f*	%	*Mean	*f*
high	87.1	0.0	276	90.6	0.0	252
low	12.9	0.0	41	9.4	0.8	26

(*0= have not used injecting drugs during lifetime; 1=have used injecting drugs during lifetime)

Table 7.

Subjects' Injecting Drug Use During Lifetime: Summary of 2X2 Analysis of Variance (ANOVA)

Sources of Variance	SS	df	MS	*F*	*p*-value
Main Effects	130	2	.006	4.96	.007
MOT	.009	1	.009	7.24	.007
COMMUN	.005	1	.005	4.54	.034
2- Way Interactions	.002	1	.002	1.76	ns
MOT COMMUN	.002	1	.002	1.76	ns
Explained	.14	3	.004	3.50	.015
Residual	7.76	591	.001		
Total	7.89	594	.001		

Qualitative Analysis

One open-ended question, in Part IV, was placed on the survey instrument in order to assess the variable catalyst. This section of the instrument was designed to capture a critical event in which the subject was motivated to participate in an action or behavior that can be perceived as beneficial toward HIV prevention. The responses from this section were examined independently from the previous three sections of the instrument. Part IV of the instrument was identified as "Incentive." The subjects were given the following directions:

Briefly answer the following question in the space provided below: Name an event or situation that you believe would motivate you to avoid HIV infection. For example: You learn that a friend is infected with HIV. Due to this news, if you would decide to become sexually active, it would be with only one uninfected partner.

Urban

The response rate for this question from urban subjects was 62% (n=196). As each response was examined, two specific categories were developed based on how the subject recorded his or her answer. The first category (Category I) was that an event needed to occur in order for the respondent to consider taking action or change their behaviors. The second category (Category II), which included more responses, indicated that prevention behaviors currently exist. Specifically, the prevention behaviors are practiced because either an event has already occurred or subjects' level of knowledge about HIV has caused them to protect themselves against HIV infection.

Rural

The response rate to the catalyst question from rural subjects was 50% (n=137). As each response from the rural subjects was recorded, categories, themes, and patterns were explored. The two categories that emerged were the same as the urban categories. The first category (Category I) was that an event needed to occur in order for the respondent to consider taking action or change current behaviors toward HIV prevention. The second category (Category II), was that prevention behaviors currently exist due to an event that has already occurred. The second category, overall, had more responses than the first category.

Discussion

When examining the sexual behaviors of the students in this sample, the majority have had sexual intercourse in their lifetime. The results regarding sexual experience was about the same for respondents from urban (74%) and rural (78%) communities. Overall, the entire sample is at a higher risk for HIV infection by being sexually experienced, especially those indicating having 2 or more sexual partners in their lifetime. These results are consistent with other research which indicates that 80% of female and 77% of male college students have had sexual intercourse in their lifetime (Douglas, et al. 1995). The current study does not differentiate between married and unmarried subjects. Therefore, further investigation is warranted since this issue has an effect on measuring HIV-risk. Further research might include measures on personal demographics regarding current sexual practices instead of lifetime sexual practices.

The second behavioral question, which was a good indicator of HIV risk behavior among the subjects, dealt with condom use. Condom use by the subject or partner during their last sexual intercourse experience was indicated at a slightly higher incidence than those subjects and partners who did not use condoms. In comparison to urban subjects, rural subjects and their partners were less likely to use a condom during the last sexual intercourse experience. The 1995 National College Health Risk Behavioral Survey (Douglas et al., 1995) results corroborate this by stating that over a third of the subjects reported using a condom at last intercourse. However, it is unsure if the subjects in this research study, who indicated they were sexually active, were also using condoms during every episode of sexual intercourse.

Finally, an overwhelming number of students in this study have not injected illegal drugs in their lifetime. The majority of those who did indicate using illegal injecting drugs were from rural communities. Although anonymity was stressed, many students may not have answered this question honestly due to the fact that injecting certain controlled drugs is illegal and they may have feared prosecution. Additionally, the question regarding illegal injecting drug use did not specify if the respondent *shared* the injecting drug needle. Further investigation should include "sharing" of injecting drugs to further capture true HIV risk behavior.

The hypothesis addressed the differences between community and motivation with HIV risk behaviors. Motivation toward HIV prevention was significant, specifically with regard to the number of sexual partners, condom use during last sexual experience, and injecting drug use. The community in which the subject grew-up did not have a significant influence on the HIV preventive behaviors examined in this study. Implementation of the concept of motivation for HIV/AIDS educational programs should be incorporated by sexuality educators. The discussion of motivation can be included in an HIV/AIDS program, especially integration with the topics of self-esteem, preventive HIV behaviors, peer pressure, and the etiology of HIV infection.

This study does not differ in behavioral results with other studies comparing rural and urban young people. Too many health professionals mistakenly believe that youth living in rural areas are shielded from the many risk factors that increase their exposure to HIV infection (Durrant, 1992). This

research study suggests that many young people living in rural areas are engaging in HIV risk behaviors which are very comparable to those living in urban communities.

The catalyst question which inquired about an event which may promote the prevention of HIV infection yielded a significant number of responses from the subjects. Two basic categories emerged from the responses. The first was that an event had already occurred; therefore, the respondents in this category indicated that they were currently practicing HIV preventive behaviors. Many of the subjects shared a major incident surrounding an issue of AIDS which caused them to seriously re-evaluate their HIV risk behaviors. The issues, whether it was the death of someone with HIV or having been exposed to HIV from a previous sexual partner, made enough impact on the subjects' lives to motivate them to practice HIV preventive behaviors. In addition to reinforcing basic HIV/AIDS facts, this information encourages health educators to inform young adults about the human reality of HIV/AIDS.

The second category of responses indicated that an event would need to happen in order for the subjects to incorporate HIV preventive practices. The subjects in this category stated that they would have to be personally affected by HIV/AIDS before they would consider practicing HIV preventive behaviors. Again, health educators can utilize these responses to assist young adults in making conscious personal decisions about their behavior. Specifically, health educators can convey the important message that young adults should not wait for something bad to happen before taking preventive measures against acquiring HIV infection.

Practical Implications for Health Educators

HIV/AIDS will continue to present a tremendous challenge to every community. However, with each challenge is an opportunity to examine beliefs, attitudes, and behaviors. Health educators can help communities face the challenges of HIV/AIDS by sharing information through open discussions about sexuality, as well as sexual and injecting drug practices.

This study showed that motivation had an effect on the degree to which the subjects in this study practiced HIV prevention behaviors. What motivates a person to behave in a certain way depends on many factors. Health educators can devise teaching methods that emphasize motivation is necessary to promote the importance of practicing HIV preventive behaviors. For example, the health educator can survey the students about their future goals and then educate the students about the fact that people with HIV infection have a shortened life span, and, therefore, are not able to achieve future goals. Educational programming can relay the message that a certain degree of motivation toward the prevention of HIV infection is necessary if the students are to achieve their future goals.

With information obtained from this study, health educators can conduct educational programming which may lead to a greater understanding of HIV/AIDS among young adults. Educating people about HIV/AIDS is never an easy task: however, prevention messages, coupled with motivational theory, can be essential to creating a better understanding of HIV/AIDS and halting its spread.

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Strategies For Strengthening Professional Preparation In Support of HIV Prevention and Health Education

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Introduction

Parents, teachers and community members in many rural areas in the Unites States perceive a low need for aggressive implementation of HIV prevention through health education programs designed to focus on HIV prevention and other high risk health behaviors. Their perception is supported by their belief that risk taking behaviors that put youth in serious jeopardy are mainly a problem of urban environments (Cohen, 1997). This often leads to underdeveloped and insufficiently supported educational programs in schools to address HIV prevention and other health risk areas. However, HIV prevention programs and health education are required in the majority of states. In addition, the statistics indicate that the incidence of HIV infection and AIDS in rural areas has been increasing. From 1991 to 1992 the incidence of AIDS increased three times faster in the rural areas than the urban and suburban areas of residence (Berry, 1993 & Cohn, 1997).

According to Berry (1993), the epidemiology of AIDS in rural areas has not been fully defined. What is known is that during the first wave of the epidemic AIDS primarily affected gay or bisexual men in the rural areas. During the second wave of the epidemic, those most at risk for HIV infection are in the rural South, women (particularly African American women), adolescents, migrant and seasonal farm workers, and people who abuse substances, including alcohol. Poverty is also associated with the second wave of the epidemic (Berry, 1993). Topping and Hartwig (1997) described their patients in rural areas who are HIV infected as more likely to have become infected through heterosexual contact or through injected drug use, more likely to be poor, and more likely to be African American.

It is the concern for HIV infection in the youth population that has been the primary target for the HIV prevention program of the American Association for Health Education (AAHE). In a study which assessed knowledge and attitudes about AIDS among adolescents in the rural southwest part of the country, it was revealed that students had knowledge of the basic transmission routes. However, misconceptions on casual contacts and negative attitudes persist in ways that could interfere with youth adopting safe behavior (Miller, W.A., Qualtere-Burcher, P., Lauber, C., Rockow, J.P. & Bauman, K.A., 1990). This study further indicated a need to strengthen the educational outreach of prevention programs in rural areas.

In rural areas there are fewer resources and little competition for health education and health services. Thus, sparsely populated rural areas rely more upon the local school as the outlet for program dissemination (Institute of Medicine, 1997). Thus, it is essential that schools deliver strong HIV prevention programs. There is consistent support by many organizations for the philosophy that HIV prevention should be delivered through comprehensive health education (K-12). This would maximize reinforcement of essential health education skills such as data gathering, analysis, decision-making, and refusal skills. One of the primary challenges presented by relying upon the school for prevention programs is the lack of teacher preparedness to deal effectively with HIV prevention and comprehensive health education. The overwhelming majority of classroom teachers for grades K-5 have little or no pre-service training in health education, even though there is agreement at local, state and national levels that they are the best person in the school environment to effectively deliver health education. It is recommended by most states and professional organizations that students in the middle school grades be taught by a health education specialist. However, states approach this issue in various ways. Some states make no provision for health education specialists in middle grades and some states allow health education as a specialty area in their middle school teacher certification. Other states have health education combined with physical education for middle school grades and above. There is little consistency in actually having a trained health education teacher for the middle grades in most school systems.

To bridge the gap between the level of elementary and middle school teacher preparedness and the expectation that they present HIV prevention programs in the classroom, local education agencies(LEAs) and state education agencies(SEAs) have spent significant resources during the past decade to provide in-service professional development to teachers. The next area of major need, apparent to AAHE, is to stem the tide of elementary and middle school teachers graduating from teacher education programs without the preparation necessary to deliver comprehensive health education which includes HIV prevention. The leadership of the Association believe that teacher preparation programs for elementary teachers, middle school generalists, and special education teachers really must prepare their teachers in HIV prevention and health education unless the educational system wants to continue to force LEAs and SEAs to bear all of

the responsibility for preparing classroom teachers for grades K-6 in some states, and grades K-8 in other states, to deliver HIV prevention and health education. For the past four and a half years, AAHE has implemented a series of strategies for strengthening professional preparation in support of HIV prevention as a part of comprehensive health education in schools.

An unpublished study (Breitenstein & Fortune, 1996), determined the top ten barriers to preparing elementary, middle school, and special education teachers in the areas of comprehensive school health education and HIV prevention. The following are among the barriers:

- Comprehensive School Health Education is not a national priority
- There is a general lack of understanding among educators of the importance of school health and its value to children and youth.
- Health education is not perceived as part of the "core" K-12 curriculum
- Discomfort with HIV/AIDS education, including education about condoms
- Lack of awareness that Health Education is a separate curriculum entity

In support of the belief that it is essential for the nation to close the gap between what elementary, middle school, and special education teachers are expected to teach and what they are prepared to teach, AAHE developed a five year project funded by the Division of Adolescent and School Health of the Centers for Disease Control and Prevention which focuses on strengthening the professional preparation of teachers for the delivery of HIV prevention and comprehensive school health education programs. The activities of the past four and a half years are described below.

Four Component Approach

There are four major components of the AAHE approach to enhancing the health education preparation of elementary, middle school generalists and special education teachers. These are:

1. Development of School Health Education Advocates (SHEAs).
2. Development and agreement on the competencies that teachers need.
3. Materials to assist teacher education faculty in preparing future teachers.
4. Developing support for enhanced teacher preparation by state and local agencies.

School Health Education Advocates

There are approximately 1,200 institutions of higher education that prepare teachers. The majority of these campuses have elementary teacher preparation as part of their offerings. In contrast, there are health education professional preparation programs (majors and minor programs) on approximately 215 campuses. That means that nearly a thousand campuses may be actively preparing elementary and middle school teachers in an environment where there is little or no professional health education expertise. Who will be the advocate for implementing preparation in health education for elementary, middle school, and special education teachers on these campuses? It could be any interested and caring teacher education faculty member, but unless someone is specifically identified, no one will be advocating for this purpose on campus.

It was with the situation above in mind that AAHE staff has recruited teacher education faculty on over 680 campuses across the country to serve as School Health Education Advocates(SHEAs). What are the expectations of SHEAs? They have made a commitment to:

- Promote the inclusion of health education, including HIV/AIDS prevention education, in the course work of elementary, middle school, and special education teachers.
- Strengthen collaboration between elementary and middle school preparation faculty and health education preparation faculty where health education programs exist.
- Receive the HIV/AIDS project newsletter and other pertinent correspondence and circulate these resources within their department/college/school of education.
- Assist in the assessment of the status of teacher education programs with regard to health education, including HIV/AIDS prevention education.

Each SHEA has developed an individualized action plan and reports the progress being made on campus in relationship to the expectations listed above. This reporting process assists the AAHE staff to determine the impact of the SHEA network.

Teacher Competencies

In 1989, AAHE convened a joint committee with the American School Health Association to develop educational standards for the preparation of elementary teachers in the area of health education. The outcome of that work was a series of responsibilities and competencies to serve as guidelines for use by teacher preparation faculty. AAHE currently distributes a brochure entitled *Health Instruction Responsibilities and Competencies for Elementary Classroom Teachers*. The anticipated outcome is that as a result of their professional preparation program, prospective elementary teachers will be capable of assuming these responsibilities and demonstrating these competencies in the classroom. The responsibilities and competencies were modeled after *A Framework for the Development of Competency-based Curricula for Entry Level Health Educators* (National Task Force on the Preparation and Practice of Health Educators, 1985)

A second document, in development, outlines the responsibilities and competencies of non-health education specialists at the middle grades level of instruction. It focuses upon

the role of health education in the middle grades curriculum and how middle school teachers have an opportunity to collaborate with the implementation of the comprehensive health education curriculum and the coordinated school health program. This work is being developed in collaboration with the National Middle School Association and a variety of other national education organizations.

Materials for Teacher Education Faculty

The project staff has developed a variety of materials during the past four years which include:

- What Every Educator Should Know About HIV/AIDS Education
- A policy resolution in support of teacher preparation in health education
- A project Newsletter which is published periodically and mailed to all SHEAs (currently on volume 4)

The newsletter provides: 1) news from current literature; 2) a "Deans" column written by an administrator of a college or school of education on how to strengthen HIV prevention and health education preparation for elementary and middle school teachers; 3) news on the work of AAHE and other national organizations in the area of HIV prevention education; and 4) a mechanism to report success stories from SHEAs to their colleagues on other campuses.

In addition to the SHEA newsletter, the project has mailed a variety of other materials to members of the SHEA network that were produced by other organizations which would be useful to the SHEAs in accomplishing their goals. It has been a challenge to the AAHE staff to optimize the SHEA network as a dissemination mechanism and still maintain quality control over the materials that the SHEAs receive. The goal is for them to receive a regular supply of state of the art material that will assist them in their roles without assaulting them with a myriad of commercial materials.

Support for Teacher Preparation by State and Local Agencies

One of the important components of the project has been the development of a technical assistance kit for state and local coalitions willing to support the enhancement of teacher preparation in health education at nearby campuses. The technical assistance kit provides policy and foundation documents that can be used by groups and organizations for curriculum revision and teacher certification reform to address the need for elementary, middle school, and special education teachers to have preparation in health education and HIV prevention.

In collaboration with the Society of State Directors of Health, Physical Education and Recreation, AAHE is creating a policy development manual which provides information State Education Agencies can use to develop policies on elementary and middle school teacher preparation in health education. The long term goal is for all states to develop and implement such policies. It is anticipated that in order to reach this goal, AAHE staff may need to provide technical assistance and training for the staff of State Education Agencies on the use of the policy manual.

Conclusion

To address the HIV prevention needs of youth in rural settings it is essential that the teaching workforce be adequately prepared as schools will likely remain the primary source of prevention education. In order to ensure their preparedness, it is essential to provide the elementary, middle school, and special education teacher workforce with basic knowledge and skills they can draw upon to implement both HIV prevention education and comprehensive health education. Special knowledge and skills that will assist in implementing effective HIV prevention and comprehensive health education programs in the rural setting include: 1) awareness of the denial that HIV transmission is a significant problem for rural areas; 2) sensitivity to cultural issues specific to rural populations; 3) recognition of the emerging predominance of heterosexual transmission; and 4) mechanisms for increasing sensitivity for those infected with HIV and creating supportive environments in small communities.

The most cost effective and easiest venue in which to provide teachers with this knowledge and these skills is during the pre-service education experience. What strategies can ultimately ensure that preparation? A variety of both voluntary and non-voluntary (mandated) strategies can be used to accomplish this goal. They include such possibilities as:

- state certification systems requiring health education experiences as part of teacher certification requirements
- providing health education methods courses for all future teachers in elementary education
- infusing health education competencies and skills into existing course work for elementary, middle school and special education teachers.
- obtaining NCATE guidelines that would require schools and colleges of education to prepare elementary teachers in health education in order to receive full NCATE accreditation.

All or any of these strategies could assist in meeting the goal of the teacher workforce being prepared to successfully implement HIV prevention and other health education curricula. In truth, it is likely that in the end it will be some combination of these strategies that brings about success, if indeed, success is achieved. It is with this in mind that AAHE has initiated the multidimensional project described in this article. Creating change of this magnitude is not to be perceived as a simple or easily accomplished task. Mandated change is very unlikely, but if it should occur, it will still take education faculty a number of years to make curricular adjustments. If voluntary introduction of health education preparation into existing teacher training programs is going

to be the primary method for producing a cadre of elementary, middle school and special education teachers that are appropriately prepared to implement health education and HIV prevention programs, then it is necessary to focus energy toward a decade of systematic effort, not a few years.

The voluntary approach will require collaboration with other education professionals at a level that health educators have never before conducted. Teacher educators will need to understand the essential need of a well prepared teacher workforce to deliver health education programs that work. Because health education programs exist on no more than 20% of campuses preparing teachers, many teacher education faculty will need to either seek health education professional development experiences themselves, or involve health education consultants to assist in the task of revising elementary, middle school, and special education teacher preparation programs. AAHE project staff urge all health educators interested in helping to bridge the gap in teacher education to become involved and to work toward both voluntary and mandated changes whenever opportunities arise.

Acknowledgments

This project was supported by a cooperative agreement with the Division of Adolescent and School Health of the Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, grant no. U81/CCU310203.

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The Relationship of Family Factors To Alcohol Use and Sexual Risk Behavior: Implications for HIV/AIDS Prevention

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Abstract

In this study of 135 university undergraduates, we used a retrospective event-specific methodology to examine the relationship of family variables at age 10-12 to alcohol use and high-risk sexual behavior at time of first intercourse and at time of first intercourse with most recent sexual partner. Family variables did not predict alcohol use but did predict condom use. Also, we found that subjects' relationship with their same-sex parent at age 10-12 was a more powerful predictor of future condom use than their relationship with their opposite-sex parent. The authors discuss the implications of these and other findings for HIV/AIDS prevention.

The behavior of many adolescents puts them at high risk for contracting the HIV virus. Public health agencies such as the Centers for Disease Control (CDC), National Institute on Drug Abuse, and the U.S. Public Health Service have all targeted adolescents as a potential risk group (Bingham, 1989; CDC, 1990; Schuster, 1988; U.S. Public Health Service, 1987). While the AIDS mortality rate for 15- to 24-year-olds is low, AIDS has become one of the 10 leading causes of death for this age group (Kilbourne, Buehler, & Rogers, 1990). Although only a small percent of AIDS cases are in the under 20 group (2%), 18% fall in the 20- to 29-year-old group (CDC, 1996). Given the long incubation period of the disease, many in this group were probably infected as teens.

Of particular concern are the high-risk sexual behaviors which put adolescents at risk for contracting the HIV virus (Donovan & McEwan, 1995). AIDS education and prevention programs must directly address these risky behaviors (Adams, Piercy, Jurich, & Lewis, 1992). We must also study why some adolescents engage in life-threatening risk-taking behavior. Unless we better understand the causes of sexual risk-taking behavior, our efforts at effective intervention will be compromised.

Adolescents' High Risk Sexual and Drinking Behaviors

Alcohol has been identified as one potential cause of sexual risk-taking (Cooper, 1992; Donovan & McEwan, 1995; Flora & Thorensen, 1988), particularly for adolescents. Adolescents who report heavy drinking are more likely to have unprotected sexual intercourse (Luster & Small, 1994; Parker, Harford & Rosenstock, 1994). Similarly, approximately 40% of the college students participating in a study by Desiderato & Crawford (1995) indicated that they would probably be less likely to use condoms during sex if they had consumed alcohol. In a national household probability sample of adolescents, Elliot and Morse (1989) report that 23% of boys who had sexual activity in the previous year used alcohol. Sexually active young women are also more likely to use alcohol than those who have not had sexual intercourse (Zabin, Hardy, & Smith, 1986). Adolescent involvement in alcohol has been related to the early onset of sexual activity, increased frequency of sexual activity, and a higher degree of sexual involvement (see reviews by Donovan & McEwan, 1995, and Ensminger, 1987). Moreover, Mott and Haurin (1988) found these relationships to be independent of race and gender. Indeed, Bentler and Newcomb's (1986) research suggests that the strength of the relationship between alcohol use and sexual behavior may have been systematically underestimated due to the unreliable measurement of one or both of these behaviors.

Particularly important to AIDS prevention is the fact that, although condom use among teens has doubled during the 1980s (Forrest & Singh, 1990), several studies suggest that alcohol use may reduce condom use (Parker et al., 1994; Robertson & Plant, 1988; Strunin & Hingson, 1992).

The Alcohol - Sexual Behavior Link

Although alcohol and sexual behavior have been linked throughout history in our literature and popular culture, as well as through correlational research such as that cited above, the causal link is less clear (Cooper, 1992). It may be that adolescent alcohol consumption does indeed increase the likelihood of high risk sexual behavior. This may happen through the disinhibiting nature of alcohol or through affecting cognitive abilities necessary to foresee the consequences of behaviors. One's expectations of the effects of alcohol may also affect sexual behavior (Cooper, 1992). Alternatively, some third factor, such as sensation seeking personality or unconventionality, may be affecting both sexual and drinking behavior. In addition, cultural patterning and social learning would appear to play a role in both alcohol and sexual behaviors. Finally, the context of both behaviors may be important factors. For example, for adolescents both drinking and sex often occur in contexts where adults are not present (e.g., after school) and where both behaviors are sanctioned by peers (e.g., parties) (Cooper, 1992; Leigh, 1990b; Leigh and Stall, 1993).

The Family as a Potential Influential Variable

The above discussion highlights the importance of identifying the conditions that may influence alcohol use and risky sexual behavior as well as their progression to HIV infection. One promising factor to examine is the at-risk adolescent's family. The family is the central environment of most young children and can remain a powerful influence for many adolescents. Several comprehensive reviews (e.g., Glynn, 1984; Harbin & Mazair, 1975; Stanton, 1979a, 1979b) and reviews of reviews (Glynn, 1981; Stanton, 1978) have chronicled the massive research and theory related to the part played by families in teenage alcohol/drug abuse.

General family factors such as the degree of parental nurturance and support, parent-child communications, quality of the parents' marriage, quality and consistency of family management, and the substance use of parents have been found to predict adolescent alcohol/drug use (e.g., Barnes, 1984; Coombs & Landsverk, 1988; Fors & Rojek, 1983; Glynn & Haenlein, 1988; Hundleby & Mercer, 1987; Patterson, 1982; Piercy, Volk, Trepper, Sprenkle, Lewis, 1991; Simcha-Fagan, Gersten, & Langner, 1986; Stanton, 1985; Stanton & Todd, 1982). Similarly, parent-child communication and healthy family functioning have been associated with contraceptive use (Casper, 1990; Fisher, 1987; Handelsman, Cabral & Weisfeld, 1987; Leland & Barth, 1993; Luster & Small, 1994; Mueller & Powers, 1990; Sher, Emans, & Grace, 1982).

What remains unknown is the extent to which family factors may influence the alcohol-sexual behavior discussed earlier. This will be the focus of the present investigation. If family factors do influence this relationship, it may be that the family can be used more planfully in HIV prevention initiatives. That is, the impact of HIV prevention programs may be heightened by directly addressing family variables.

Time-Linked, Event-Specific Methodology

Previous studies examining the link between alcohol and high-risk sexual behavior have been criticized for focusing on general drinking habits and general frequencies of sexual activity without examining drinking and sexual behavior during the same occurrences (Leigh, 1990b). Various authors suggest instead an event-specific "critical incident" design in which respondents are asked a number of questions about a specific sexual incident (Bailey, Ennett, Ringwalt, Dennis, and Iachan, 1993; Cooper, 1992; Leigh & Stall, 1993). The target incident may be the person's first sexual experience, most recent sexual encounter, or most recent sexual experience with a non-monogamous sexual partner. Information is gathered on unsafe and "safer" sexual behaviors, and whether alcohol or drugs were used during these events (Leigh & Stall, 1993). The present study used this event-specific methodology to both examine the alcohol-sex link as well as whether the perceived early family functioning of the respondents related to both at-risk sexual behavior, defined in this study as not using condoms, and alcohol use. Two sexual incidents were used: the person's first experience of sexual intercourse and his/her first sexual intercourse with his/her most recent sexual partner.

Research Questions

The general questions we sought to address in this study include:

1. Are perceived family variables related to alcohol use at time of first intercourse?
2. Are these family variables related to safer sex behaviors at time of first intercourse?
3. Are alcohol and unsafe sex related at time of first intercourse?
4. Are the relationships identified above maintained when these variables are examined in terms of another time-specific event: first intercourse with most recent partner?

Methods

Participants and Procedure

Questionnaires were distributed to 350 college students enrolled in an introductory course in marriage and family relations at a state university in the Midwest. The introductory class fulfills a university requirement and typically enrolls students from all schools within the university. Students were instructed to complete the questionnaire at home if they were willing to participate in the study. To insure anonymity, subjects placed completed questionnaires in a self-addressed envelope and mailed it back to the present researchers.

A total of 170 students returned the questionnaire for a response rate of 49%. The sample for this study consisted of the 141 students who indicated that they had participated in sexual intercourse at some time in their lives. Six of these students were eliminated from the analyses due to missing data, resulting in a final sample size of 135 students. The average age of these participants was 19. There were 103 females (76%) and 32 males (24%). The racial breakdown was as follows: 93% Caucasian; 2% Hispanic; 1% African American; 4% Asian; 1% Native American. All schools within the university but two (Education and Veterinary Medicine) were represented by the participants.

Measures

The following instruments were used to measure family variables:

a) The Parent-Adolescent Communication Scale (PAC), a 20-item scale developed by Barnes and Olson (1982), was used to assess the quality of general communication between parents and adolescents. The measure is comprised of two subscales. The first, Open Family Communication (OFC), measures the more positive aspect of parent-adolescent com-

munication, with higher scores reflecting more positive communication. The second subscale, Problems in Family Communication (PFC), focuses on such negative aspects as hesitancy to share and negative styles of interaction. Higher scores for this subscale indicate greater problems in parent-child communication.

The presence of two factors were confirmed through an unrestricted varimax rotated factor analysis based on a national sample of 925 adolescents and their parents. The two resulting factors reflect the present two subscales of the Parent-Adolescent Communication Inventory. Chronbach's alpha for this national sample was .87 for the Open Family Communication subscale and .78 for the Problems in Family Communication subscale (Barnes and Olson, 1982). In this study, Chronbach's alpha for the completion of the scale in reference to mothers was .90 for the Open Family Communication subscale and .75 for the Problems in Family Communication subscale. In reference to fathers, Chronbach's alpha was .91 for the Open Family Communication subscale and .78 for the Problems in Family Communication subscale.

b) The Supportive Sex Discussion Scale (SSD), a nine-item scale developed by Neer and Warren (1986) was used to measure the degree to which participants perceived their discussion with their parents about sexuality to be supportive. Higher scores indicate more supportive discussions with parents. Chronbach's alpha for this study was .82 for moth-ers and .76 for fathers.

c) The Family Assessment Device (FAD). We used the General Functioning scale of the FAD in the present study (Epstein, Baldwin, and Bishop, 1983). This scale is comprised of 12 items and measures the overall health/pathology of the family. The respondent is asked to indicate on a four-point scale the degree to which each item describes his/her family. Healthier scores reflect healthier family functioning. This scale has moderate to strong correlations with the other six dimensions of family functioning measured by the FAD (r ranges from .48 to .76) and has a high degree of internal consistency (Chronbach's alpha = .92). The scale also has been found to reliably discriminate between nonclinical and clinical families. Chronbach's alpha for this study was .91.

Participants were asked to complete these scales with reference to a specific point in time, between the ages of 10 and 12 years. The early adolescent age range was set because the parent-child relationship at that age has been related to subsequent alcohol and drug use (Coombs & Landsverk, 1988) and because pre-teens in this age range have been targeted for intervention in many alcohol/drug prevention programs. Moreover, since school transitions are developmentally important phases in adolescent adjustment (Blyth, Simmons, Carlton-Ford 1983; Crocket, Petersen, Graber, Schulenberg & Ebata, 1989; Simmons & Blyth, 1987), the age range of 10-12 also reflects the time of youth transition from elementary to junior high school.

Sexually active participants were asked to think about their first intercourse experience and indicate a) whether or not they used alcohol just prior to and/or during their sexual encounter, and b) whether or not they used a condom. These two questions also were asked in reference to their first intercourse with their most recent sexual partner.

Results

Using standard discriminant function analyses, we found that family variables at age 10-12 did not reliably discriminate between participants who did and did not use alcohol at first intercourse (Wilks' Lambda = .95, p = .50), between those who did and did not use alcohol at first intercourse with most recent partner (Wilks' Lambda = .97, p = .92), or between those who did and did not use a condom at first intercourse with most recent partner (Wilks' Lambda = .97, p= .88).

However, family variables did reliably discriminate between participants who did and did not use condoms at first intercourse (Wilks' Lambda = .82, p = .001). Applying the classification weights generated by the analysis to the sample demonstrated that, overall, 73% of the cases were classified correctly. While 76% of the participants using a condom were correctly classified as condom users, 24% were misidentified as nonusers. Similarly, 70% of the respondents who did not use condoms were correctly identified as nonusers, 30% were misclassified as users.

We conducted follow-up univariate analyses of variance, with condom use versus no use as the independent variable and each family measure as the dependent variable, to examine which family variables were significantly related to use of condoms. The analyses revealed that condom use was significantly related to PFC-mother (F = 7.70, p = .01), PFC-father (F = 7.64, p = .01), and OFC-father (F = 6.39, p = .01). Compared to participants who did not use a condom at first intercourse, those who did use a condom had fewer communication problems with their mother, fewer communication problems with their father, and more open communication with their father. No other family variables were found to be significant (see Table 1).

We also explored the role of gender in the relationship of family variables to alcohol and condom use. Again, using standard discriminant function analyses, we found that family variables at age 10-12 did not reliably discriminate between participants who did and did not use alcohol at first intercourse (men: Wilks' Lambda = .76, p = .40; women: Wilks' Lambda = .95, p = .68), between those who did and did not use alcohol at first intercourse with most recent partner (men: Wilks' Lambda = .90, p = .96; women: Wilks' Lambda = .94, p = .73), or between those who did and did not use a condom at first intercourse with most recent partner (men: Wilks' Lambda = .66, p = .38, women: Wilks' Lambda = .97, p = .96). However, family variables did reliably discriminate between participants who did and did not use condoms at first intercourse for both men (Wilks' Lambda = .59, p = .05) and women (Wilks' Lambda = .81, p = .005). Applying the classification weights generated by the analyses to the sample demonstrated that,

Table 1

Means And Standard Deviations Of Family Variables For Students Who Used Versus Students Who Did Not Use Condoms At First Intercourse

Variable	Used Condom Mean (s.d.)	Did Not Use Condom Mean (s.d.)
GFS	37.34 (8.12)	34.74 (7.94)
PFC-Mother	26.39 (7.24)	29.93** (6.59)
PFC-Father	28.30 (8.04)	32.07** (6.29)
OFC-Mother	37.80 (8.77)	38.22 (7.35)
OFC-Father	33.54 (9.78)	29.15** (9.11)
SSDS-Mother	26.99 (7.77)	26.46 (6.80)
SSDS-Father	25.22 (6.63)	25.11 (5.00)
	n = 89	n = 46

* $p < .05$
** $p < .01$

overall, 82% of the cases were classified correctly for men. While 87% of the men using a condom were correctly classified as condom users, 13% were misidentified as nonusers. Similarly, 76% of the men who did not use condoms were correctly identified as nonusers, 24% were misclassified as users. In contrast, 74% of the women were correctly classified, overall. Seventy-eight percent of the women using condoms were correctly identified as condom users, with 22% being misclassified as nonusers. Sixty-nine percent of the women who did not use condoms were correctly identified as nonusers while 31% were misclassified as users.

Follow-up univariate analyses of variance revealed that, for men, condom use was significantly related to PFC-father ($F = 9.59$, $p = .004$) and OFC-father ($F = 11.51$, $p = .002$) while, for women, condom use was significantly related to PFC-mother ($F = 5.31$, $p = .02$) (see Tables 2 & 3). Compared to men who did not use a condom at first intercourse, those who did use a condom had fewer communication problems and more open communication with their father. For women, condom users had fewer communication problems with their mother than did nonusers. No other family variables were found to be significant.

Finally, chi-square analyses were conducted to examine the relationship between alcohol and condom use. Findings were nonsignificant at both first intercourse (Chi-square = .006, $p = .937$) and at first intercourse with most recent partner (Chi-square = .52, $p = .47$).

Discussion

Our results did not support the relationship of family vari-

Table 2 **Means And Standard Deviations Of Family Variables For Students Who Used Versus Students Who Did Not Use Condoms—Male Subsample**

Variable	Used Condom Mean (s.d.)	Did Not Use Condom Mean (s.d.)
GFS	39.53	35.17
	(6.28)	(7.15)
PFC-Mother	26.20	29.53
	(6.30)	(5.43)
PFC-Father	25.93	33.00**
	(6.73)	(6.17)
OFC-Mother	37.73	36.47
	(7.37)	(6.18)
OFC-Father	36.27	27.71**
	(7.00)	(7.23)
SSDS-Mother	29.01	26.82
	(6.63)	(5.85)
SSDS-Father	27.80	24.88
	(5.97)	(4.27)
	n = 15	n = 17

* $p < .05$
** $p < .01$

Table 3 **Means And Standard Deviations Of Family Variables For Students Who Used Versus Students Who Did Not Use Condoms—Female Subsample**

Variable	Used Condom Mean (s.d.)	Did Not Use Condom Mean (s.d.)
GFS	36.89	34.48
	(8.41)	(8.48)
PFC-Mother	26.43	30.17**
	(7.46)	(7.27)
PFC-Father	28.78	31.52
	(8.24)	(6.41)
OFC-Mother	12.19	10.76
	(9.07)	(7.88)
OFC-Father	32.99	30.00
	(10.20)	(10.07)
SSDS-Mother	26.57	26.24
	(7.95)	(7.40)
SSDS-Father	24.70	25.24
	(4.27)	(5.45)
	n = 74	n = 29

* $p < .05$
** $p < .01$

ables to alcohol use at two event-specific occasions. Perhaps our retrospective measurement of family functioning is problematic. On the other hand, it may be that more proximal variables (i.e., setting, peer pressure) account for whether the person uses alcohol during those occasions. Similarly, more proximal family variables (e.g., one's relationship with his/her parents at the time of the incident) may be more powerful predictors than our retrospective family data at age 10-12.

Retrospective family variables (particularly the overall quality of parent-adolescent communication), however, do seem to predict condom use, particularly for men. At time of first intercourse, the prediction rate of condom use category (i.e., use, no use) was 82% for men and 74% for women. Why would family variables result in more accurate classification of condom use for men than women? Perhaps it is because men have more control over negotiating condom use than women since condoms are a male-centered method. It may be, then, that family factors that influence boys at age 10-12 translate into better safer-sex negotiation skills at first intercourse. Or perhaps issues of faithfulness and commitment, which may be more salient for women than men, translate into women trusting their first sexual partner more than men regardless of the messages they may have gotten about safer sex from their family of origin. Similarly, the man may interpret his partner's insistence of condom use more negatively (e.g., "She doesn't trust me") than a woman might (e.g., "He cares enough to protect me."), making women's efforts to negotiate condom use less effective than the efforts of men. Again, these differences may relate to differences in early gender socialization not tapped in the present instruments.

Linguists argue that men and women have different conversational styles in situations that call for persuading another person or communicating one's values or ideas (Tannen, 1990). These conversational styles of men and women are often interpreted in different ways: men, who tend to use direct styles, are often seen as making commands or "leading the discussion." On the other hand, women, who tend to begin discussions with questions and lead discussions in a more collaborative style, are often perceived by men as "unsure of themselves" (Tannen, 1990). These different styles of communication have intriguing implications for heterosexual partners' discussions of safer sex. Perhaps when a woman tries to communicate her desire to use a condom, her partner may not take her request seriously because of her communication style. However, when a man makes a request to use a condom, his communication style may be taken more seriously, leading to a greater likelihood of safer sex behavior.

Thus, although these results suggest that family variables affect males' decisions around future safer sex behavior more than females, this conclusion may be misleading. It is possible that family variables may equally affect the values systems and ideas around safer sex for both females and males. However, women may not be as successful at convincing their partners to use a condom because of the male partners' perception of the unique communication style of many women. Whatever the reason, the quality of parent-child communication at age 10-12 translates into more responsible sexual behavior for men than women. These findings seem to suggest that early HIV prevention programs should address parent-child communication.

There are also important implications in our findings that men's relationship with their fathers was more influential for their future condom use than their relationship with their mothers while, for women, mothers were more influential than fathers. It may be, therefore, particularly important to include fathers in family interventions with sons and mothers in family interventions with daughters since the quality of these same-sex relationships seems to be a salient factor in the youth's future safer sex behavior.

Why was general parent-child communication found to be related to condom use while the family's general functioning and supportive sex discussions with parents not found to be influential? Since condom use requires negotiation, skills developed through parent-child communication may be more important to successful negotiation of condom use than the general quality of family functioning. However, we were surprised that supportive sex discussions with parents were not associated with condom use. Such discussions would seem more relevant to sexual encounters with a partner than the more global assessment of parent-adolescent communication measured by PAC. Perhaps it is the content of sexual conversations between parents and adolescents rather than the supportiveness of these discussions that is relevant to safer sex behavior. Future research is needed to explore this possibility.

We also found little support for the popular contention of alcohol use being a disinhibiting agent that increases the likelihood that a couple will not use a condom. That is, we found no relationship whatsoever between alcohol use and condom use. Our finding is similar to those of Leigh (1990), Leigh & Miller (1995), and Temple & Leigh (1992). Perhaps, rather than a disinhibiting agent, alcohol use is better thought of as a part of the ritual of sexuality for our college student subjects. However, given that some studies have found a relationship between alcohol use and condom use (e.g., Hingston, Strunin, Berlin, & Heeren, 1990; Freimuth, Hammond, Edgar, McDonald, & Fink, 1992; McEwan, McCallum, Bhopal & Madhok, 1992) our speculation must be considered tentative at best.

How do our findings relate to current theoretical models that are being applied to HIV/AIDS prevention? Cognitive theories such as the Health Belief Model (Becker, 1974) and the Theory of Reasoned Action (Ajzen & Fishbein, 1980) focus on cognitive variables as the reasons for behavior change. However, neither theory attempts to explain the origins of certain beliefs (St. Lawrence, Brasfield, Jefferson, & Alleyne, 1995). Thus, neither theory addresses directly such variables as early parental communication as factors related

to later sexual behavior.

On the other hand, social learning theory (Bandura, 1986) recognizes that individuals learn in a social context, and therefore may be more useful in helping us understand the results of this study. For example, subjects with good communication with their parents at age 10-12 may have developed self-efficacy (Bandura, 1989) that resulted in negotiating condom use with later sexual partners.

We wish to acknowledge the potential limitations implicit in our methodology. First, the event-specific methodology depends on the subjects' memory of their high-risk behavior at two points in time. We can only assume the accuracy of their memory of these events. Similarly, the retrospective nature of the family variable data is subject to distortion. We cannot be certain that the subjects' actual relationships with their parents were what they remember them to be. Finally, the lack of diversity in our sample limits the generalizability of our results.

Conclusion

Our results highlight the importance of family variables to safer sex behavior, particularly the influence of same-sex parents on their pre-teen's future condom use. Early intervention involving family may help shape beliefs that foster more protective, responsible sexual behavior. More broadly, the findings identify the need to expand theoretical models currently underlying intervention efforts to include factors, such as family, that shape the beliefs used to guide sexual decisions. A better understanding of these factors will improve the possibility of creating a safer sexual world for adolescents and young adults.

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FACING FACTS: HIV Prevention and Sexual Health

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Introduction

Today's teenagers never knew a world without AIDS. The statistics are frightening: it is estimated that one half of all new HIV infections in the United States are among people under 25 (Centers for Disease Control and Prevention [CDC], 1998b); one in four sexually active teens will have a sexually transmitted disease this year (Eng & Butler, 1997). The proportion of AIDS cases among adult/adolescent females in the U.S. has tripled since 1985 (CDC, 1998a). In 1996, AIDS cases in rural areas represented 6.7% of all AIDS cases in the United States (CDC, 1996).

Adolescent sexuality has changed dramatically during the past 40 years. In the 1950s, petting was the most common intimate teenage sexual experience, adolescents reached physical maturity later and married earlier, and teenage intercourse was uncommon except among the oldest and often engaged or married adolescents (Haffner, 1995). Patterns of sexual behavior differed widely between young men and young women, as well as among youth from different backgrounds.

Today's teenagers reach physical maturity earlier and marry later. There has been a steady increase in the percentage of young people having sexual intercourse, and in the percentage doing so at younger and younger ages (Haffner, 1995). Almost all teenagers experiment with some type of sexual behavior. Patterns of sexual activity are now fairly similar between young men and women, and young people from different ethnic, socioeconomic, and religious groups.

There is public and professional consensus about what is sexually unhealthy for teenagers. Professionals, politicians, and parents across the political spectrum share a deep concern about unplanned adolescent pregnancy; out-of-wedlock childbearing; sexually transmitted diseases (STDs) including AIDS; sexual abuse; date rape; and the potential negative emotional consequences of premature sexual behaviors.

However, there is little public, professional, or political consensus about what is sexually healthy for teenagers. The public debate about adolescent sexuality has often focused on which sexual behaviors are appropriate for adolescents, and ignored the complex dimensions of sexuality. The "just say no" approach to adolescent sexuality believes that the only healthy adolescent sexuality is abstinence from all sexual behaviors until marriage, and that adults should work to eliminate teen sexual experimentation. The "just say not now" philosophy encourages young people to abstain until they are more mature, but given the high rates of teenage sexual involvement in intercourse, recommends that young people have access to contraception and condoms whether or not adults approve of their behavior. Other adults adopt a "don't ask, don't tell" posture and simply pretend that adolescent sexuality and sexual behavior do not exist.

This adult difficulty acknowledging teenagers' emerging sexuality may actually increase teenagers' risk of pregnancy and sexually transmitted diseases. The majority of adults disapprove of teenagers having intimate sexual relationships, and adolescents often perceive this disapproval. Many teenagers are willing to risk pregnancy and disease rather than damage their "reputation" with their parents or experience the disapproval of adults with whom they must interact to obtain contraceptives and condoms.

In 1994, SIECUS convened the National Commission on Adolescent Sexual Health. Following eighteen months of deliberations, the Commission issued a report calling for a new approach to adolescent sexual health. Society has a responsibility to help adolescents understand and accept their evolving sexuality and to help them make responsible sexual choices, now and in their future adult roles. The Commission believes that adults must focus on helping young people avoid unprotected and unwanted sexual behaviors rather than asking them to abstain from all sexual behaviors. Individual adults and society in general must help adolescents develop the values, attitudes, maturity, and skills to become sexually healthy adults. The Commission developed a Consensus Statement on adolescent sexual health (see page x), which has been endorsed by 53 national organizations, including the Society for Adolescent Medicine, the American Medical Association, and the American College of Obstetrics and Gynecology (Haffner, 1995).

The very words "sexual health" are an oxymoron in America. Most adults in America live with a dark box of shame, guilt, fear, ignorance, and history of negative sexual experiences that affect their ability to be in intimate relationships, their ability to deal with policy issues around sexuality issues, and the way they approach their clients and students. Most adults say that they want something else for their children.

1) ADOLESCENTS ARE NOT THE PROBLEM; ADULTS ARE.

The 1997 Institute of Medicine Report, "The Hidden Epidemic," calls for a "significant national campaign to foster social change toward a new norm of healthy sexual behavior" (Eng & Butler, 1997). America is not sexually healthy;