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Theory-Based School and Community-Based HIV Prevention in Zimbabwe: A Prospective Study

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Abstract

The overall goal for this proposed project is to conduct a pilot study of a theory, school and community-based, HIV prevention programme for in and out of school adolescents and youths in Harare. The intervention will use a Reducing the Risk approach as well as incorporate a peer diffusion model into school interventions. It is expected that the proposed project will positively impact on adolescents and teenagers at risk for contracting HIV in Zimbabwe and will produce benefits that continue long after the project is concluded. The project will also empower teachers and health educators with the necessary information and training to successfully implement HIV school and community-based behavioural intervention studies in Zimbabwe that can continue long after the proposed project has concluded. This will be achieved through training, seminars, and on-going workshops for professionals and students during the entire research process.

Background of Problem

We have established in previous research in the United States that adolescents and young adults who have higher needs for novelty and sensation and are impulsive decision-makers are more likely to engage in behaviours that place them at substantially greater risk of HIV infection, sexually transmitted diseases, and pregnancy—such as initiating sex at an early age, having multiple sexual partners, and having sex following use of alcohol and other drugs. We also have shown that we can effect HIV-risk-related behaviour change, even for those whose individual characteristics (high sensation-seeking and impulsive decision-making) place them at higher risk. This has been accomplished by designing interventions to attract and persuade the highest risk takers (high sensation-seekers [HSS] and impulsive decision-makers [IDM]), while also having an impact on lower risk-takers. These school-based interventions have been successful in reducing the initiation of sexual activity among adolescents.

Zimbabwe is one of the African countries hardest hit by the AIDS pandemic with an estimated 25% or more of its 10.5 million population HIV infected. Life expectancy has dropped from age 70 to age 38. Currently, men seek out ever-younger girls, in the belief that virgins cannot infect them. Teenage girls are now showing high HIV infection rates. Studies indicate that older men are infecting younger women and as those women go on to infect other partners, even higher HIV infections rates may result. Although anti-retroviral medications have dramatically improved survival in the U.S. and Europe, the costly drugs are not an option for most Africans. Therefore, the only sure way to help reduce the threat of HIV is through prevention. We have shown in our ongoing research in the United States that by adapting a curriculum to make it more appealing to higher risk-taking adolescents we can bring about a

significant delay in initiation of sexual activity for both higher and lower risk-takers. That is, we have demonstrated that we can do something about HIV-risk related behaviour change, even for those whose individual characteristics (high sensation-seeking and impulsive decision making, or HSS/IDM) place them at a higher than average risk. In the proposed research, we will apply the knowledge we have gained in our research to adapting culturally-relevant classroom, small media, and peer opinion leader intervention for in and out of school adolescents in Zimbabwe. The proposed project will include 7200 students in 12 public high schools in the poorer neighbourhoods in Harare, and 1600 out-of-school youth in the same districts of the city.

Specific aims of the proposed project are to (a) determine how sensation-seeking, impulsive decision-making, and risky sexual behaviours are related among urban Zimbabwean adolescents and assess the importance of relevant social and psychological mediating variables; (b) determine how classroom, community, and peer opinion leader intervention can be adapted to be more successful at modifying the behaviour of HSS/IDM in in-school Zimbabwean adolescents; (c) determine how a peer opinion leader intervention can be adapted to be more successful at modifying the behaviour of HSS/IDM in out of school Zimbabwean adolescents; (d) develop, via focus and reaction groups, culturally relevant classroom or in-school interventions that will attract the attention of, increase the salience of HIV, and lead to behaviour change for HSS/IDM. Zimbabwean adolescents; (e) develop, via focus and reaction groups, an enhanced version of in-and-out of school peer diffusion interventions that increase the interest of HSS youth and target situations and behaviours relevant for IDM adolescents in Zimbabwe; (f) evaluate the joint impact of the community campaign and classroom intervention on the perceived risk of HIV, behavioural intentions and sexual risk-taking behaviours of in and out of school

urban youth in Zimbabwe; (g) evaluate the impact of the enhanced peer diffusion intervention on the perceived risk of HIV, behavioural intentions, acceptance of condom use, and sexual risk-taking behaviours of in-and-out-of-school urban youth in Zimbabwe; and (h) refine our model by making it culturally relevant to ensure that it effectively addresses risky sex, individual differences and situational factors, based on results of the intervention research

Intervention

The intervention will be modeled around a modified *Reducing the Risk* intervention combined with the peer diffusion model. In what follows, we will discuss these interventions in more detail.

Classroom-based Skills-oriented Intervention

A starting point for the classroom-based intervention for this project is the "Reducing the Risk" programme produced by Associates. This curriculum is one of a small number of curricula promoted by the Centres for Disease Control's Division of Adolescent and School Health (DASH) as effective in reducing HIV-related risk behaviour. According to the curriculum's authors, "the Reducing the Risk curriculum" is based on several interrelated theories - social learning theory, social inoculation theory and cognitive - behavioural theory." The curriculum is designed to enhance skills to resist unprotected sex by modeling those skills and then providing opportunities for practice. It emphasises explicit norms against unprotected sex by continually reinforcing the message that youth should avoid unprotected intercourse, that the best way to do this is to abstain from sex, and that if youth do not abstain from sex, they should use contraceptives (especially condoms) to guard against pregnancy.

and against sexually transmitted disease (STD), especially HIV. The curriculum in its current format (Barth, 1993) includes 16-17 class sessions, including lessons on abstinence, refusals, using refusal skills, delaying tactics, avoiding high-risk situations, getting and using protection (two lessons on birth control methods), knowing and talking about protection, three additional units on integrating skills, information about preventing HIV and other STDs, HIV risk behaviours, implementing a plan for protection from STD and pregnancy, and “sticking with” abstinence and protection.

The Reducing the Risk curriculum was modified to be more oriented toward the learning, cognitive, and affective orientations of high sensation-seekers (HSS) and impulsive decision-makers (IDM). Two central goals which this approach seeks to accomplish involve (1) increasing the arousal value of the content and its presentation while retaining its credibility in order to heighten attention and increase learning, and (2) providing instruction in and rehearsal of situations in which HSS/IDM adolescents have tended to respond in a more risky manner than LSS/RDM adolescents. We maintain that such instruction should not only include information specific to the special needs of these HSS/IDM adolescents, but also that it be taught in ways more likely to be effective in reducing impulsive decisions. Ideally, this would involve behaviour rehearsal to increase the probability the desired behaviours would approach automatic responses.

The following modifications were made to the Reducing the Risk curriculum to create the “Modified Reducing the Risk Curriculum,” targeted at high sensation - seeking, impulsive decision-making youth: including more audio-visual materials, such as short “trigger” films with teen-oriented music; involving peer facilitators in some of the lessons focusing students less on teacher - lecturers; introducing students

to a young person living with HIV; using input from teenagers in creating more realistic, high risk-taking role plays to provide both greater direct involvement and rehearsal of responses; increasing student participation by introducing more games and prizes into classroom exercises, and use of video cameras in the classroom by students in the creation of and observation of role-playing activities; and increased attention to ways of increasing pleasure for the impulsive decision-maker while reducing risk (e.g., separating alcohol use and sexual activities; the arousal-prolonging effects of condom use). Table 2 presents comparisons among the three curriculum conditions (comparison, RTR and modified RTR).

Table 1
Description of Curriculum Conditions

Intervention Variable	RTR	Modified RTR
No. of hours	14	14
Use of role playing	Yes	Yes
Use of peer facilitators	No	Yes
Extensive use of video	No	Yes
Young HIV speaker	No	Yes
Simulation activities	Yes	Yes
Discussion of pleasure enhancing properties of less risky behaviour	No	Yes
Community activities	Yes	Yes
Small group discussion	Yes	Yes
Student production of videos	No	Yes
Interactive experimental activities	No	Yes
Parental involved activity	Yes	No

Peer Diffusion Interventions

The Peer Diffusion Model for the diffusion of safer sexual practices (Kelly et al., 1991; Kelly et al., 1992b; Kelly, 1994a; Dearing et al., 1994), to be used in the peer-based interventions, is derived from conceptual and empirical work indicating that popular peer leaders who advocate safer sex can change peer group norms in a pro-prevention direction and in this way can motivate safer sexual behaviour in their peers.

Among young people, susceptibility to reference group normative and informational social influence increases as individuals enter adolescence, at about the same time that responsiveness to pressure from adults such as parents and teachers drops (Berndt, 1979; Brown, 1989a; Urberg et al., 1990). These interventions may also be effective because peer opinion leaders: provide similar role models whose behaviour is especially likely to result in observational learning (Bandura, 1994); transmit information which reference group members perceive as especially credible (Klepp et al., 1986); actually themselves promoting or actually engaging in a particular behaviour changes predominant attitudes toward that behaviour (Dearing et al., 1994); are more likely to be confided in than others (for example, adults); and may provide more consistent normative behaviour information than that provided by other change agents (health educators), since the peer opinion leader remains "on site" within his or her peer group.

For many of these reasons, the peer diffusion model of AIDS risk behaviour change developed by Jeffrey Kelly, Janet St. Lawrence and associates (Kelly et al., 1991; Kelly et al., 1992a; Kelly et al., 1992b; Kelly, 1994a, Kelly et al., 1997) has been the source of highly effective interventions. In their work, Kelly and colleagues (Kelly et

al., 1991, Kelly et al., 1992b, Kelly et al., 1997) have demonstrated that gay male popular opinion leaders who take a public pro-prevention stance in a social context where risky sexual behaviour is the norm can play a very important role in changing that behaviour. In this research, which was conducted in gay bars in several small cities, gay opinion leaders were identified on the basis of key informant observations (bartenders' listings of popular, influential patrons). The gay male opinion leaders who were identified were recruited to act as change agents and trained in a series of workshops to personally advocate AIDS risk behaviour change, to provide key AIDS prevention information, and to teach key AIDS prevention behavioural skills (Kelly, 1994b). After training, the peer opinion leaders contracted with the researchers to meet with a number of friends and acquaintances and to act as "change agents" with them. Kelly and colleagues' intervention induced very significant behaviour change in gay male bar patrons in several studies (Kelly et al., 1991, 1992b, 1997). In addition to demonstrating the efficacy of the peer diffusion-model-based AIDS risk behaviour change technique with gay men, this work also produced an extremely useful technology for identifying and training peer opinion leaders, and for assessing the effects of popular opinion leader-model-based interventions.

The specific success of the peer opinion leader model in promoting AIDS prevention among gay men (Kelly et al., 1991) and the general effectiveness of previous peer opinion leader-based interventions in changing a wide range of adolescent risk behaviours including smoking, alcohol, and drug use (Botvin & Eng, 1982; Botvin et al., 1990; Luepker et al., 1983; Murray et al., 1988; Telch et al., 1990; Wiist & Snider, 1991) suggests that using the peer diffusion model to change norms and to convey key AIDS risk reduction information and behavioural skills to adolescent populations should prove to be an effective approach to reducing their AIDS risk. Dr. Fisher (a consultant on the proposed research) and colleagues are currently assessing a peer

opinion leader-based intervention with high-risk, primarily minority high school students in New England.

Logistical Considerations

The majority of adolescents in Zimbabwe attend secondary school (either public or private), although school drop-out figures are on the increase. The high enrollment of adolescents and teenagers in schools makes a school-based HIV prevention programme a very sensible thing to do because such a programme is likely to reach more students. Instruction in Zimbabwean schools is largely conducted in English, a fact which facilitates cross-national trial of HIV prevention curricula with appropriate adaptations. At the same time, adolescents and youths who are out of school share a significant level of social involvement with those out of school. An HIV intervention targeting only in school adolescents would be limited in effectiveness since out of school peers are likely to continue with high risk HIV contracting behaviours with in-school peers. Out-of-school adolescents and youths are also at a higher risk of contracting HIV because they have more idle time, and more likely to be involved in sexual liaisons with older people.

Significance of the Study

AIDS is one of the major killers in many countries in Africa, and Zimbabwe is no exception. The numbers are expected to rise considerably among adolescents, particularly females. Zimbabwean adolescents and teenagers are currently considered to have the highest rate of HIV infection compared to any age group within the sexually active range, with girls having an infection rate that is 6 times that of boys. Only with effective preventive strategies will HIV and AIDS be eradicated.

The proposed pilot programme will assist in these efforts by effectively training school administrators, teachers, health educators, and behavioural science students with the requisite knowledge and skills needed to conduct HIV prevention interventions and, in part, providing theory-based HIV interventions to adolescents. These prevention strategies can be utilized in myriad settings long after the training has been concluded, and the research skills gained by local researchers and educators will assist Zimbabweans in assessing behavioural change and monitoring future interventions needed to slow the epidemic.

Above all, the proposed pilot HIV prevention programme for High school students could be the basis of an HIV prevention curricula usable across the country. A snap survey of adolescents and teenagers attending a cross-section of schools across the nation by the Zimbabwean based investigator, Elias Mpofu, revealed that most high schools did not have any HIV prevention curriculum programme. The proposed pilot project would suggest ways in which the Zimbabwe Ministry of Education, Sport and Culture can compliment the existing HIV/AIDS curriculum in primary schools with a high school version. The Zimbabwe Ministry of Education, Sport, and Culture's HIV/AIDS curriculum for primary schools also has an HIV prevention orientation, much like our proposed pilot programme for high school students.

Methodology

Participants

Participants will be adolescents and teenagers attending 12 high schools located in the high-density suburbs of Harare. Specifically, students attending Forms 1 and 2, and out-of-school peers will be surveyed and trained in HIV prevention behaviours. The

elevated levels of poverty among residents of high-density suburbs of Harare put adolescents and teenagers in those communities at a higher level of risk of contracting HIV. Rates of contracting HIV are higher among the poor because of the higher probability of trading in sex as a means of earning a living and/ or as entertainment. Children growing-up in impoverished neighbourhoods are also more likely to be exposed to adult sexual activities due to shortage of accommodation; - they are also more likely to want to experiment with sex at a younger age because of prior and early exposure to adult models and lower parental supervision or monitoring of child behaviour. They also have lower access to alternative sources of information on HIV prevention since many of their parents or families cannot afford a newspaper, television or radio. Thus, an HIV prevention programme targeting adolescents and teenagers in the high-density suburbs of Harare is likely to address a pressing need in those communities.

The pilot programme will be carried during normal school or day hours with the collaboration of school heads, teachers, and community-based Non-Governmental organizations. The school-based guidance and counseling teachers and form masters will be key resource persons in this project as will a selection of NGOs with experience in preventive health management involving Zimbabwean adolescents and youths.

Procedures and Project Time-Line

Month 1: Conduct 10 focus groups with in and out of school adolescents in life skills classes (taught at approximately age 13). Similar to focus groups we have held in the United States, we will collect information about risk-taking behaviours and reactions to different components of classroom interventions used in our modified Reducing

the Risk intervention and peer diffusion interventions used by Fisher et al. We will also conduct several cognitive group interviews using drafts of survey instruments to assess equivalence of meaning in English with Zimbabwean students; strengthen working relationships with curriculum coordinators, teachers in school system, agency staff; develop draft of adapted curriculum materials, conduct focus groups; conduct reaction groups; conduct in-depth panel interviews.

Months 2-4: Work with adolescent and youth collaborators, teachers, and administrators to develop a culturally relevant adaptation of our classroom intervention with peer diffusion components as determined to be appropriate for the population. Pilot-test adapted curricula and peer interventions. Provide training in data collection and issues related to experimental design will also occur during this time.

Month 5: Baseline surveys will be administered to 1500 in-and-out of school adolescents in approximately 2 districts of the city of Harare, half assigned to an intervention condition and half assigned to a comparison condition. Training in the implementation of the intervention and in conducting HIV prevention interventions will also occur during this month.

Months 6-9: A 12-15 hour intervention will be implemented in the intervention schools with careful monitoring of implementation by our in-country and U.S. teams. Training will also occur between months 6 and 9 in data analysis. A four-month post-intervention follow-up survey will be conducted in month 9, and data analyses.

Months 10-12: Collaborative report writing will occur with in-country and U.S. teams. Logistic regression analyses and hierarchical regression analyses (as

determined by the measurement level of the dependent variable) will be used to assess impact on attitudes and intentions, as well as initiation of sexual activity, condom use, number of partners, perceived risk for HIV and other sexual risk behaviours determined to be important in the formative phase of the research.

Both process and outcome data was collected from behavioural scientists, health educators, teachers, and behavioural science students to assess changes in skills related to experimental design, survey development, implementation of interventions and data analysis.

Results

A key outcome of the pilot HIV prevention project will be a school-based Reducing the Risk-Peer Diffusion curriculum usable in Zimbabwean school. The curriculum and procedures will be carefully documented presented to the Zimbabwe Ministry of Education, Sport and Culture for its consideration. Workshops on the pilot project's procedures and findings will also be shared with schoolheads, teachers, NGOs and parents associations throughout the country. The pilot project is likely to lead into a bigger project of a similar nature involving a cross-section of Zimbabwean schools and communities.

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