Testing the Application of a Western Scientific Theory of AIDS Risk Behavior Among Adolescents in Ethiopia

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Objective: To test whether a theoretical scheme developed in the United States within the framework of Western science could be applied to a study of HIV risk behaviors among Ethiopian youths.

Methods: Informal interviews and focus group discussions were conducted to determine the relevance of particular AIDS-related risk and protective factors suggested by Jessor's theoretical framework and to generate additional risk and protective factors that were not suggested by a review of the (predominantly Western) literature on adolescent risk behavior. Data from informal interviews and focus group discussions were used to develop survey instruments and procedures for administering survey instruments. A pilot study among 99 youths was conducted to examine the reliability and construct validity of the survey instrument.

Results: Based on information from focus group discussions and informal interviews, we confirmed the relevance of particular AIDS-related risk and protective factors. The definition of existing constructs was expanded and additional risk and protective factors were incorporated into the existing framework. Existing items and procedures for administering survey instruments were improved and new items were generated. The reliability of survey instruments was determined and improved whenever possible.

Conclusions: We discuss the value of these preliminary steps for securing external validity by identifying theoretical constructs that are relevant to the population at hand and the use of a survey instrument that adequately captures these constructs and provides reliable information.

Key words: HIV; AIDS prevention; Ethiopia; risk behaviors, youth.
signed to reduce sexual risk behaviors among U.S. youths, Kirby (1995) recommended that AIDS intervention programs be theory-based, culturally sensitive, developmentally appropriate, and skill-oriented. Research on adolescence in Africa is scarce (Mwanalushi, 1979; Nsamenang, 1992; Negussie 1988; Schlegel & Barry, 1991) and has yet to give rise to any fully-fledged, African-based theories of adolescence. A small number of studies have been published on specific risk behaviors but lack an integrative theoretical framework (e.g., Gebre, 1990). Thus, one strategy for developing effective intervention programs in Africa requires testing the ecological applicability of theoretical models developed by scientists in other societies.

In this article we describe a series of preliminary steps that we followed in testing the applicability of a theoretical model developed in the United States to the study of adolescent vulnerability to AIDS in Ethiopia. The objective of these preliminary steps was to develop and administer a set of survey questions to Ethiopian youths regarding AIDS risk behaviors (see Figure 1). The ongoing study is designed to investigate the AIDS-related risk behaviors of adolescents living in Nazareth, Ethiopia, using Jessor's (1991) theory of adolescent risk behavior. The findings from this study should provide information about the usefulness of Jessor's theory applied to the risk behaviors of Ethiopian adolescents.

Jessor's theoretical framework was chosen for two reasons. First, in addition to individual factors, the framework allows for the consideration of social, political, and cultural factors likely to influence the risk behavior of adolescents. Second, it allows for the identification of risk and protective factors that could be addressed by adolescent HIV/AIDS prevention programs.

Jessor (1991) proposes that adolescent risk behavior can be understood in terms of antecedent risk and protective factors in five explanatory domains: perceived environment, personality, genetics/biological, social environment, and behavior. These domains represent the “web of causation” as an explanatory theory for adolescent risk behavior. The risk and protective factors in each domain can affect risk behavior either directly or indirectly through their relationship with risk and protective factors in other domains. Thus, risk behaviors cannot be explained by any single factor or domain: rather, risk and protective factors from multiple domains combine to influence the occurrence of risk behaviors. Furthermore, risk factors are conceptualized as leading to an increase in adolescent risk behavior whereas protective factors are conceptualized as mitigating the impact of risk factors on adolescent risk behavior. Because of this relationship between risk and protective factors, increase or decrease in risk behavior can be explained only by considering the presence of both risk and protective factors.

Despite its broad conceptual scope, we felt that the framework might be selectively biased in a number of ways that could reduce its applicability to the Ethiopian sociocultural setting. Theory within the American mainstream tradition of psychology has been criticized as culturally biased due to its limited database, due to culturally specific assumptions informing the interpretations of the data made by the authors, and due to the expectations of the primary audience to whom its explanations have been addressed (Serpell, 1990). Most of the empirical research from which Jessor's (1991) framework has evolved was conducted with North American samples, designed and interpreted by American theorists, and addressed primarily to American
audiences. Although the biological parameters of the AIDS disease are undoubtedly transculturally universal, it is far from self-evident that the social, political, and cultural factors that impinge on adolescent risk behaviors are equally general. Adolescence is a bio-socio-cultural phase of human development in which the impact of universally human biological processes of pubescence on behavior is mediated by cognitive and emotional processes. These processes often reflect culturally specific beliefs, traditional practices, and contextual constraints arising from the socio-cultural and politico-economic macrosystem within which adolescent development is embedded. Thus, aspects of any theoretical model developed in one culture for this topic may need to be modified in order to be used in another culture (Berry, 1969; Serpell, 1990).

Method

This project was initiated under the auspices of the Safe Guarding Youth from AIDS (SYFA) HIV/AIDS preventive intervention project. The SYFA project is a collaborative effort among Johns Hopkins University School of Hygiene and Public Health, Addis Ababa University, and the Ministry of Health in Ethiopia, and is funded by grants from UNESCO, UNICEF, and the World AIDS Foundation.

The first author of this report was born into an Ethiopian family that immigrated to the United States when she was ten years old. Consequently, she is able to communicate in one of the main indigenous languages, Amharic, and can legitimately claim a certain degree of “insider” cultural authenticity for her intuitions about psychosocial processes in Ethiopia. She completed her high school, college, and graduate training in the United States, and she has appropriated a good deal of mainstream American culture. Consultations to gain additional insights from informants familiar with Ethiopian adolescents were important for validating and refining the first author’s own intuitive judgments as well as gaining information useful for developing survey instruments to be administered to Ethiopian adolescents. The first phase of this study involved establishing professional contacts in Ethiopia, gathering epidemiological data on AIDS in Ethiopia, conducting a literature search on studies published in Ethiopian journals on the topics of AIDS in general and on the topic of adolescents and AIDS, and developing a proposal for studying AIDS-related risk behaviors among Ethiopian adolescents.

Phases 2 and 3 involved preliminary inquiries about the explanatory power of Jessor’s framework for understanding the AIDS-related risk behavior of Ethiopian adolescents. In phase 2, interviews were conducted with expert informants in the United States prior to traveling to the “field,” whereas later phases were conducted with relevant persons “on site,” in Ethiopia. The two major goals of phases 2 and 3 were to determine the relevance of particular AIDS-related risk and protective factors suggested by Jessor’s theoretical framework for understanding the risk behaviors of this particular population, and to generate additional risk and protective factors that were not suggested by a review of the (predominantly Western) literature on adolescent risk behavior. In examining these possibilities, we cast our net as widely as possible and relied on ethnographic principles in our approach to exploring local opinions relevant to Jessor’s (1991) conceptual framework. Thus, we invited our informants to tell us in their own words about their own conceptions of adolescence and behaviors that would place youths at risk for HIV/AIDS. A secondary goal of phases 2 and 3 was to refine the survey instruments and improve the procedures for administering them. We used ethnographic methods to solicit reactions from Ethiopian adolescents and adults to specific aspects of the research instruments we developed or modified.

In the preliminary conceptualization of the study, 10 explanatory constructs were identified within the broad scope of Jessor’s framework: (1) social and economic life, (2) exposure to sexual risk behaviors through media, (3) traditional values, (4) peer influence, (5) religious affiliation (Thornton & Camburn, 1989), (6) perceived life chances (Jessor, Van Des Bos, Vanderyn, & Turbin, 1995), (7) parent-child relationship (Armsden & Greenberg, 1987), (8) social support (Cutrona & Russell, 1987), (9) expectations for academic achievement (Jessor et al., 1995), and (10) the outcome variable of risk behaviors related to AIDS. We proposed standardized scales to measure five of the constructs. Scales were generated to measure social and economic life, exposure to sexually explicit information through media, traditional values, peer influence, AIDS-related risk behaviors, economic status, and demographic information. One of Jessor’s five explanatory domains (genetics/biological) was excluded from the scope of this investigation.
As we incorporated additional ethnographic feedback during the iterative passes through phases 2 and 3, the number of constructs increased from 10 to 25. Five constructs were introduced to reflect points raised by Ethiopian informants in the focus groups. Another five constructs were designed to index variables suggested as relevant by one or more U.S.-based advisors. One of the original scales was subdivided into two based on a reconceptualization of the underlying constructs, and another scale was subdivided into four scales. One new scale was added based on a decision to include a protective behavioral factor.

Phase IV was designed to examine the construct validity and reliability of the survey instrument. In addition to the 25 constructs and an ordinal scale to measure economic status, a social desirability scale was added to gauge the likelihood of socially desirable responses. The 24 risk and protective factors indexed by the final set of instruments adopted for the survey were each defined as belonging to one of four domains proposed by Jessor’s theory. Within each domain, the risk and protective factors are conceptualized as working together to influence adolescent involvement in AIDS-related risk behaviors.

Each construct was indexed by one or more scales, each of which included multiple items. For instance, the construct “perceived life chances” was indexed by a scale entitled Perceived Life Chances (Jessor, 1991). This scale includes 12 items, of which the following are two examples. “What are the chances that you will graduate from college? What are the chances that you will have a job that pays well?” The response alternatives to these items offered in the instrument were very high, high, fifty-fifty, low, very-low.

Our assessment of whether this approach was appropriate for the Ethiopian context was conducted at several levels. Is the construct (e.g., perceived life chances) understood and seen as relevant to adolescent risk behaviors in Ethiopia? Does it have exactly the same meaning in Ethiopia as in the United States? Are there any key features of perceived life chances in Ethiopia that are unknown in the United States and thus not represented in the scale? Are there any particular items in the scale that seem less relevant to the construct in Ethiopia or that are difficult for Ethiopian informants to understand?

Figure 1 describes the steps involved in developing the survey instruments that were eventually adopted for administration to a sample of Ethiopian youths regarding adolescent risk behavior. As illustrated by Figure 1, because of the iterative nature of this process, aside from the conceptualization of the project that took place during the first phase, phases 1, 2, and 3 were guided by the same subset of steps. Both phase 1 and phase 2 do not flow directly into the piloting of the measures but rather lead back to the beginning of the iterative cycle. Phase 3, on the other hand, leads to the end of the iterative cycle and the piloting of the measures.

Phase I: Gathering Information and Making Professional Contacts

Epidemiological Data

The epidemiological data on the modes of AIDS transmission and age distribution in Ethiopia suggest that in the absence of effective and affordable medical treatments, prevention among adolescents may be a viable approach to reducing the number of AIDS cases. Although the exact number of AIDS cases is unknown, the Ministry of Health in Addis Ababa, Ethiopia, estimated about 400,000 cases of AIDS and 2.5 million HIV-infected cases by the end of 1997. Heterosexual contact is the primary mode of transmission, and it has been reported that 87% of new infections are due to multiple partner sexual contact. Data on the age distribution indicate a bimodal distribution with relatively high rates among children under five, low rates through childhood and early adolescence, and rates that begin to rise from age 15 though adulthood. Although about equal numbers of male and female AIDS cases are reported overall, in the 15–19 age group female cases outnumber male cases. Because of the low prevalence of AIDS cases among children between the ages of 5 and 14, these years have been designated as the “Window of Hope” for HIV/AIDS prevention (Epidemiology and AIDS Department Ministry of Health, 1998).

Literature Review

Two areas of Western literature on adolescence provided relevant findings for this study: adolescent sexuality and adolescent risk behavior. Findings from these areas of research suggest several factors that may influence adolescent engagement in AIDS-related risk behaviors. Moreover, these factors can
be conceptualized as risk or protective factors within Jessor's theory of adolescent risk behavior.

Researchers who study adolescent sexuality have examined the role of environmental, family, peer, and individual factors on sexual behavior and sexuality among adolescents. With regard to environmental factors, while little empirical research exists to support the role of media on adolescent sexuality, researchers have documented the sexual content of information adolescents are exposed to through soap operas (Greenburg, Abelman, & Neuendorf, 1981, Greenburg & Busselle, 1996). Researchers have also found a relationship between parenting methods (Miller & Olson, 1986) and adolescent sexuality. Moreover, greater monitoring, parental knowledge of children's whereabouts (Romer et al., 1994), as well as perceptions of peer behavior (Dunkin-Ricks, 1992) have also been found to be associated with adolescent sexuality. Individual factors such as religious engagement (Thornton & Camburn, 1989; Miller & Olson, 1988; Studer & Thorton, 1987) and socioeconomic (SES) factors (Weinberg & Williams, 1980) have also been implicated.

Researchers whose work is guided by theories of adolescent risk behavior have examined the role of family, peer, individual, and cumulative risk and protective factors on adolescents' engagement in AIDS-related risk behaviors. Researchers report an association between parental monitoring (Small & Luster, 1994), parental attitudes (Resnick et al., 1997), and family relationship factors (Black, Ricardo, & Stanton, 1997) and adolescent sexual risk behavior. Adolescents' perception of peer behavior has also been found to be related to adolescent risk behaviors (Black et al., 1997). Both sexual risk behaviors and sexual initiation were reported to be associated with adolescents' attitudes about sexuality (Resnick et al., 1997).

Jessor's theory was chosen as particularly relevant to a study in Ethiopia because, in addition to its treatment of risk behaviors by adolescents, it allows for the incorporation of socioeconomic and cultural factors, which have been acknowledged as especially important by the SYFA project. The following social and cultural factors were identified by the SYFA project: living in trade centers, urbanization, migration, scarcity of jobs, lack of educational opportunities, increase in sexual activity, mass media, decrease in adolescent supervision by parents and elders, and relationship with older men as a means of gaining financial support (SYFA Project in Harar, 1995).

Conceptualization and Definition of the Research Problem

The key concepts and general research questions (see Figure 1) were formulated from the literature review, epidemiological data, and initial contacts in Ethiopia.

Phase II: Developing a Culturally Sensitive Approach for Field Research

This phase of the study provided formative advice on our mode of entry into Ethiopian society. The purposes were to determine whether the constructs in the study appeared relevant to Ethiopian adolescents, to generate additional risk and protective factors, and to refine the survey instrument and survey administration procedures (see Figure 1).

Procedures

We conducted informal interviews with four Ethiopian youths between the ages of 18 and 22 and two adults, who had immigrated to the United States within the last three years. Informants were contacted by a process of snowball sampling through informal networks within the Ethiopian community in Baltimore. Interviews were often conducted with one informant in informal settings where two or three other people were also present and sometimes contributed additional information or elaborated on the interviewee's responses. The interview consisted of four parts. First, participants were invited to give their opinions about the relevance of the constructs related to adolescent risk behavior and to generate additional constructs. Second, participants were asked to comment on whether or not survey questions adequately represented the constructs they were supposed to represent and were given an opportunity to generate new questions. Third, participants were asked specific questions about the survey instrument. Specifically, participants were asked whether items would be relevant to the lives of Ethiopian adolescents and whether they would be too difficult, embarrassing, or uncomfortable for adolescents to answer. Finally, questions were also posed about procedures for administering the questionnaire.
Findings and Applications

Information from these interviews was used to determine the relevance of constructs, to operationalize constructs under development, to refine existing items, and to construct the focus group guide that would be used in phase 3 (see Figure 1).

Determining the Relevance of and Expanding Construct Definitions. All of the risk or protective factors suggested by Jessor's framework were deemed by the informants to be relevant to understanding the AIDS-related risk behaviors of Ethiopian adolescents. No new risk or protective factors were suggested by participants. Information from the informal interviews was used to expand the construct definition of the scale of traditional values and generate items for scales that we had to develop. Based on discussions about arranged marriages and dating before marriage, the construct definition of traditional values was expanded to include traditional values related to these aspects of adolescent sexuality. The original construct definition for this scale was limited to traditional values related to virginity, appropriate age for marriage, age of spouse. Specifically, the following questions were added to the scale of traditional values, on the topic of adolescents having boyfriends/girlfriends and marriage. "Girls should not have boyfriends before they get married." "Boys should not have girlfriends before they get married." "The individual should be the one who chooses the person she/he is going to marry." "Families should be the ones that arrange marriages." The following response options were offered: strongly agree, agree, disagree, strongly disagree.

Constructing Focus Group Guide. Data from the informal interviews were used to formulate questions for the focus group discussions in phase 3. For instance, from these interviews we learned that participants rarely generated risk and protective factors after they had heard the ones we were proposing. We modified our procedures to ask participants to generate risk and protective factors before they had been exposed to factors suggested by Jessor's model.

Phase III: Local Contextual Assessment and Elaboration of Constructs and Instruments

After the survey instruments and procedures had been revised and the focus group guide further developed based on data from the informal interviews, focus group discussions were conducted in Nazareth, Ethiopia.

Purpose

The purpose of this phase was twofold. The primary goal was to make sure that the constructs chosen were relevant to Ethiopian adolescents and to generate new risk and protective factors, if needed. A secondary goal was to further refine items in the survey instrument and improve procedures for administering the survey instrument based on feedback from adolescents and adults. These goals were accomplished using ethnographic methods to ask Ethiopian adolescents and adults questions that would allow for the modification of Jessor's comprehensive theory of adolescent risk behavior.

Procedures

Data were gathered through two methods: focus group discussions and preliminary piloting testing of the survey instrument. Parents, youths, and teachers participated in the focus group discussions while only youths and teachers participated in the preliminary pilot. Prior to getting feedback from adolescents and youths, the questionnaire and focus group guide was translated by a professional translator into Amharic. Ethical clearance for the research was provided by the three institutions collaborating in the SYFA project. Adult respondents and parents of adolescents signed consent forms. Adolescents signed assent forms.

Participants. A total of about 40 adolescents, 24 teachers, and 26 parents participated in this phase of the project. Twelve focus groups were conducted with youths, parents, and teachers. The groups were conducted at high schools or elementary schools and included both single gender and mixed gender groups.

The decision regarding same or mixed gender groups depends on the nature of topic being discussed in a focus group (Stewart & Shamdasani, 1990). Separate male and female groups were conducted whenever possible because we anticipated that same sex gender groups would be necessary to allow female participants to voice their opinions openly. Other researchers who had conducted similar types of focus group discussions indicated that men tended to dominate the conversations. Since discussions about sexual matters are not common,
female participants may be inhibited in mixed gender groups. This was found to be the case with younger adolescents even when gender-specific focus groups were conducted. Adolescent girls in 7th and 8th grade were the most reserved during the focus group discussions. Adolescent girls in these grades are especially reserved when interacting with males and may be reluctant to speak during the focus group discussions.

Focus Group Moderators. Focus groups for male adolescents, fathers, and three of the four mixed gender teacher groups were conducted by a master’s level male Ethiopian psychologist. Focus groups for female adolescents, mothers, and one of the mixed gender teachers were conducted by an Ethiopian woman who had a bachelor’s degree in psychology and had extensive experience conducting focus group discussions and individual interviews.

Krueger (1988) stresses the importance of having a focus group moderator who guides the discussion and creates opportunities for interactions among participants as well as between the moderator and the participants. Although both focus group moderators had previous experience, the level of discussion in the focus groups varied. Teacher focus group discussions tended to have the most interaction among participants. The least discussion occurred in female adolescent groups where the focus groups were conducted more like a highly structured group interview because adolescent girls were reluctant to speak during the focus group discussions unless a question was directed to them. A fair amount of participation was generated in the male adolescent, father and mother focus groups, although participants in these groups tended to interact more often with the moderator than with other participants. These variations in group discussion can be attributed both to moderator’s skill level and to participants’ level of comfort participating in group discussions.

Focus Group Guide. The focus group guide consisted of three parts and asked some of the same questions that were asked during part one of the informal interviews. First, to help generate terminology that was familiar and comfortable for adolescents, participants were asked to generate words that mean “sexual intercourse.” Second, participants were asked to generate risk and protective factors for three risk behaviors: having sexual intercourse, not using condoms, and having multiple sexual partners. Two questions were used to prompt this process: “What are some reasons why adolescents are likely to engage in these risk behaviors? What are some things that keep adolescents from engaging in these risk behaviors?” Third, participants were asked to discuss how relevant the variables being studied were to Ethiopian adolescents. Some of these variables were derived from Jessor’s framework, whereas others were variables that emerged from phases 1 and 2, including self-esteem (Rosenthal, Moore, & Flynn, 1991), self-efficacy (Reitman et al., 1996; Rosenthal et al., 1991; Schaalma, Kok, & Peters, 1993; van der Pligt & Richard, 1994), risk perception (Abraham, Rubaale, & Kipp, 1995; van der Pligt & Richard, 1994) AIDS knowledge (Krahe & Reiss, 1995; Langer & Tubman, 1997; Rimberg & Lewis, 1994; Sikand, Fisher, & Friedman, 1996) and access to condoms (Magura, Shapiro, & Kang, 1994), and gender roles (O’Leary & Jemmott, 1995). Participants in the focus groups were given the opportunity to generate risk and protective factors first, so that their responses would not be biased by prior exposure to constructs derived from Jessor’s framework or other aspects of the Western literature.

Translation of Focus Group Discussions. Tape recordings of the focus group discussions were transcribed, summarized, and translated into English. The decision to summarize responses prior to translating was made to decrease the amount of time and resources necessary to translate over 20 hours of tapes. Reliability of the focus group data was assessed prior to analysis in two ways. A 10% sample of the full discussion transcript was independently translated by the first author. This was then compared with the English summary prepared by the translator. In most cases (94%–100%, mean 95%) the segments of the transcript represented by each concept in the translator’s summary were easily identified by the author as correctly translated. However, only a fair portion of the concepts (55%–95%, mean 72%) identified by the author in these samples of the full transcript were included by the translator in his summaries.

Preliminary Pilot. The preliminary pilot was conducted to refine the survey instrument and administrative procedures and included three steps. First, participants were asked whether the items in the survey instrument were relevant to the lives of Ethiopian adolescents, and whether any items would be too difficult, embarrassing, or uncomfortable for adolescents to answer. Second, participants were asked to discuss how and by whom the questionnaire should be administered. Finally, participants were asked to comment on whether or not survey questions adequately represented the constructs they were supposed to represent and were given an op-
portunity to generate new items. Participants’ responses were recorded and translated by the moderator.

Data Analysis. Analysis of data from the focus group discussions was conducted within and across focus groups. Participants’ responses to questions regarding risk and protective factors were identified and similar factors were combined. Changes that involved expanding the operational definitions, adding new constructs to the study framework, or generating new items were made only after rereading the original passages from the focus group discussion.

In the next phase of the analysis, a tally was made of the frequency with which concepts were mentioned across focus groups. In keeping with principals of consensus guiding analysis of focus group data (Knodel, 1993), only risk and protective factors mentioned in more than one focus group were considered. In cases where the risk and protective factors mentioned were adequately represented, no changes were made. Risk and protective factors not already covered by the study framework were incorporated as new constructs or used to expand the operational definition of existing constructs. For instance, value placed on independence and exploration is a construct that was not part of the original framework but was added after the focus group discussions.

In cases where a risk or protective factor mentioned in a focus group discussion was not fully represented by constructs in the study, we broadened existing constructs to incorporate concepts mentioned in the focus group discussions. For instance, value placed on independence and exploration is a construct that was not part of the original framework but was added after the focus group discussions.

Finally, decisions about whether a particular construct was relevant or not were tallied for each variable across focus group discussions. Responses to questions during the preliminary pilot were listed for each focus group and then across focus groups for each question. These comments were used to make revisions to the questionnaire and survey administration procedures. For instance, based on information from the preliminary pilot, we changed wording of questionnaire items, added new items, and decided who should administer the survey instrument.

Findings and Applications

The findings from this phase of the study were used to generate new constructs, confirm the relevance of existing constructs, expand the definition of constructs being captured using standardized scales or constructs under development, make changes to procedures for survey administration, and refine existing items and developing new items (see Figure 1).

Generating New Constructs. Most of the risk and protective factors mentioned during the focus group discussion were already part of the preliminary model derived from Jessor’s framework. We incorporated three new risk factors and two protective factors into the study based on input from focus group discussions: high value placed on independence and exploration, high value placed on sartorial (i.e., clothing) exploration, and low value placed on positive functions, and low value placed on negative functions of AIDS-related risk behaviors.

The construct of independence and exploration was generated based on focus group discussions about adventurousness being characteristic of the developmental phase of adolescence, colloquially designated by the evocative phrase “the fire age.” It was defined as adolescents’ need to establish independence from their parents and explore new things and places. Sartorial exploration was represented by a discussion on risk factors that included adolescent girls wearing revealing and tight clothes. We interpreted experimentation with clothes that members of the opposite sex might find to be attractive as sartorial exploration, rather than as a deliberate attempt for adolescents to place themselves at risk. The last risk factor, value placed on negative and positive functions of AIDS-related risk behaviors, was generated based on discussions about the anticipated consequences of risk behaviors: for example, adolescents believing that if they do not use condoms they would avoid conveying the message that they did not trust their partner versus adolescents believing that if they do not use condoms they put themselves at risk for being infected by the AIDS virus.

The two protective factors incorporated into the study were presence of someone who could give advice or guidance and parent-child communication. Both constructs were generated from discussions on communication and advice-giving around protective behaviors.
Determining the Relevance of Constructs. Most respondents endorsed variables derived from Jessor's framework as being relevant and related to the AIDS-related risk behaviors of Ethiopian adolescents. Most of the constructs derived from the literature review were relevant to understanding the risk behaviors of Ethiopian adolescents. Five of the six frequently studied variables were also incorporated into the study: self-esteem (Rosenthal et al., 1991), self-efficacy (Reitman et al., 1996; Rosenthal et al., 1991; Schalma et al., 1993; van der Pligt & Richard, 1994), risk perception (Abraham et al., 1995; van der Pligt & Richard, 1994), AIDS knowledge (Krahe & Reiss, 1995; Langer & Tubman, 1997; Rimbberg & Lewis, 1994; Sikand et al., 1996), and access to condoms (Magura et al., 1994). Gender roles limiting female adolescents' ability to reduce risk for AIDS (O'Leary & Jemmott, 1995) was not incorporated into the study because the responses given by participants applied to adults and not adolescents, making it difficult to develop items on this topic that would be relevant for adolescents.

Expanding Construct Definitions. Based on data from the focus group discussions, we modified several constructs to include new items: perceived life chances, accessibility of condoms, adult supervision, and AIDS knowledge. For example, the construct definition for the scale indexing exposure to sexually explicit written materials was expanded to include newspapers because “love stories” in newspapers were identified as risk factors for adolescent risk behaviors.

Based on discussions about perception of unemployment after graduating from high school and college as risk factors, we expanded the definition of the construct perceived life chances to include adolescents’ perceived chances of getting a job upon graduating from high school and college. Originally the definition for this construct was limited to perceived chances of having a preferred and enjoyable job, rather than any job.

Based on discussions about the reasons why adolescents may not use condoms, we expanded the construct definition for access to condoms to include social conditions in the environment. Previously the construct definition for this construct considered only the availability and affordability of condoms. The following questions were included in the scale in order to reflect this change. "Most adolescents are afraid to buy condoms because they worry about what people would think." "Most adolescents are afraid to buy condoms because they fear that someone they know might see them." The alternative responses offered were “strongly agree, agree, disagree, strongly disagree.”

Focus group participants discussed common beliefs about AIDS. Based on this information, we included the construct definition of AIDS knowledge to reflect local explanations for AIDS. The following items were added to the knowledge scale. “There is no such disease as AIDS.” “AIDS is a disease that used to be known as amenmin.” In Amharic amenmin is a fatal disease that people die from after they have lost a significant amount of weight. The response options were “true” or “false.”

Refining Existing Items and Developing New Items. Ten different Amharic words that mean “sexual intercourse” and could be used to ask adolescents about their sexual experience were generated by focus group participants. In the final survey instrument we adopted the word selected most frequently across the focus groups as the best word to use in this context. Furthermore, during the preliminary pilot adolescents and teachers gave important feedback that we used to further modify the questionnaire. This feedback included identifying questions that were too difficult, embarrassing, or likely to cause discomfort; suggesting changes in response alternatives; and suggesting rewording and additional questions. Finally, they identified petrol sniffing and forced sex as additional topics to be considered.

Procedural Changes. Participants were asked how the questionnaire should be administered, and by whom. For example, because adolescent focus group participants indicated that someone other than teachers should administer the questionnaire, we recruited local youth workers to administer the questionnaire, all of whom were young adults and had little formal association with the school.

Thus, findings from the focus group discussions yielded new constructs that had not been identified through the literature review and additional questions for existing constructs. Feedback from the initial pilot of the draft survey questionnaire was used to further refine the survey questionnaire.

Phase IV: Pilot Testing the Instruments With the Study Population

Due to changes from analysis of the focus group discussion, consultations with other researchers, and a final reformulation of the theoretical model for this study, the final constructs varied from the initial set of constructs: (1) religiosity, (2) belief in traditional
values, (3) self-esteem, (4) self-efficacy, (5) AIDS knowledge, (6) risk perception, (7) expectations for academic success, (8) perceived life chances, (9) value placed on independence and exploration, (10) value placed on sartorial exploration, (11) value placed on positive and negative functions, (12) perceived family supervision, (13) perceived family support, (14) perceived peer influence, (5) existence of someone who can give advice and guidance, (16) monetary exchange between adolescents and their boyfriends/girlfriends, (17) accessibility of condoms, (18) exposure to sexually explicit videos/films, (19) exposure to sexual risk behaviors in posters/postcards and newspapers, (20) parents-child communication, (21) availability of healthy recreational activities, (22) regular school attendance, (23) alcohol and drugs use, (24) dating, and (25) AIDS-related risk behaviors. A scale of social desirability was included to serve as a check for reliability of the data, and demographic questions about age, gender, grade in school, religion, marital status living arrangements, town of residence, and economic status were included. The measure of economic status was developed by adapting questions from other surveys that had been used in Ethiopia (1990 National Family and Fertility Survey Report, June 1993; Community and Family Survey: 1997, 1998). Economic status was measured by asking questions about mother and father occupation, housing conditions, possessions, number of rooms in home, type of roof and floor, and adolescents’ perceptions of their family’s economic status.

Purpose

A pilot study of the revised survey instrument was conducted to examine the reliability and construct validity of items and to reduce redundancy by decreasing the number of items in the final instrument.

Procedures

The changes in the survey instrument were translated by a translator in collaboration with the first author. This process ensured that the meaning of questions was consistent across both languages. The questionnaire was administered to 99 adolescents between the ages of 13 and 19: 51 adolescents from high school (24 male and 27 female) and 48 adolescents from an elementary school (23 female and 25 male). Three scales were administered in open-ended format to get information that would lead to the construction of closed-ended questions. After the data were collected, we calculated frequency and item analysis.

Findings and Applications

We used frequency data to check whether the patterns of responses differed from those we expected. In cases where the data indicated possible misinterpretation of the questions, we changed the wording of individual items. For example, because male respondents were more likely to report forced sex, this question was modified to clarify whether the respondent was being forced to have sex as distinguished from forcing someone else to have sex.

Establishing Reliability. Item analysis was run for all scales except those that contained open-ended questions and scales that included frequency responses. Fourteen of the scales achieved a coefficient alpha of .70 or above. For four scales, coefficient alphas between .60 and .69 were accepted when dropping more items did not result in improving the internal consistency of the scales. For two scales where there was not internal consistency, family support and risk perception, we added additional items. Item analysis was not used in the access to condoms scale because it assessed environmental conditions, the availability and affordability of condoms, rather than attitudinal constructs.

Although revisions based on item analysis improved the psychometric properties of the scales, there were instances when information gained during the focus group discussion may have been lost as a result of reliance on item analysis. For example, “AIDS is a disease that used to be known as amenin” was added to the knowledge scale as a result of focus group discussion. However, we later dropped this item to improve the coefficient alpha for the knowledge about AIDS scale.

After the internal consistency of scales had been improved and the number of items in the survey instrument reduced and open-ended questions had been written as closed-ended questions, we prepared a final draft of the survey questionnaire. This final draft contained scales that measured the constructs listed at the beginning of this section. It was translated and back translated into English by two independent translators.

Conclusions

This article has described the use of both qualitative and quantitative methods to conduct preliminary
work necessary for testing the applicability of a Western scientific theoretical framework as applied to HIV/AIDS risk behaviors among Ethiopian adolescents. Two major goals were (1) to determine the relevance of particular AIDS-related risk and protective factors suggested by Jessor’s theoretical framework for understanding the risk behaviors of Ethiopian youth and (2) to generate additional risk and protective factors not suggested by a review of the (predominantly Western) literature on adolescent risk behavior. A secondary goal was to further develop the survey instruments and procedures for administering the survey questions. Although these goals were not fully accomplished as planned in every phase due to the overwhelming amount of information generated and the exploratory nature of the work, the information gathered was useful in making what seemed to be important and necessary changes at the construct and item level.

Data from focus group discussions and individual interviews were used to ensure that the risk and protective factors suggested by Jessor’s theoretical framework were relevant to understanding the risk behaviors of Ethiopian adolescents. Second, additional risk and protective factors suggested during this process were incorporated into the model suggested by Jessor’s theory. Furthermore, certain constructs were expanded based on data from focus group discussions and individual interviews. The survey instrument was also further refined and new items generated based on these data. Finally, the reliability of the survey instrument was tested.

We have argued that testing the applicability of Jessor’s framework for understanding the AIDS-related risk behaviors of Ethiopian adolescents required the conduct of the exploratory adaptations described in this article. When the results of the finalized questionnaire are analyzed, if a relationship is found between AIDS-related behaviors and our culturally revised model, we will have confirmation of the usefulness of integrating theory derived from Western literature with input from Ethiopian informants. Conversely, our data may turn out to systemically disconfirm some local popular beliefs about the causes of adolescent risk behavior. Moreover, if in the future parents, youths, or professionals attempt to discuss our findings by suggesting that insufficient attention was given to uniquely powerful, local cultural factors, our attempt to elicit information about such factors and to include them in design of the survey may serve in modest degree as protection against such criticism. The importance of local perception of the validity of this type of research extends beyond sheer comprehension. If local professionals such as teachers and parents are going to use the findings of research to motivate and guide Ethiopian youths to avoid risk behaviors for AIDS, those findings will need to connect with preexisting ideas and understandings about adolescent risk behavior in the local population.

**Unresolved Issues and Limitations.** Although the sequence of steps that we have described appears to have generated a considerable number of modifications that enhanced the local validity of our methods, a number of unresolved issues remain. One of these is the degree to which informants without professional research training can be expected to share with researchers the reservations they feel about local cultural relevance. For instance, we reported that the focus groups discussions generated a much higher number of confirmations than rejections of the constructs derived from Jessor’s framework and other Western studies. One interpretation of this finding might be that these constructs have wide applicability across cultures. However, it is also possible that the manner in which the question was asked may not have allowed the participants to disagree. Participants were asked if they thought particular constructs applied to Ethiopian adolescents and if so how. It is possible that if respondents had also been asked if they could think of any reasons why these constructs may not apply to Ethiopian adolescents, a wider range of responses might have been generated.

A second issue relates to how profoundly a framework may need to be modified to accommodate insights from expert informants in a different sociocultural setting from that for which it was designed. One of the risk factors that was brought to our attention in three of the focus groups was the phenomenon of involuntary sexual intercourse. Our informants assured us that in contemporary Ethiopian society, girls enrolled in school in the age range covered by our study were quite frequently compelled by male students or older men to engage in sexual intercourse. Moreover, it appeared to the first author that both men and women attributed less agency to young women in the consensual decision to engage in sexual risk behavior. When reflecting on how to incorporate this phenomenon into the model guiding our study, we recognized that to treat such events as indices of a behavioral disposition on the part of the adolescent girl might be tantamount to “blaming the victim.” Yet to locate this “risk factor” in the general social environment would fail to acknowledge that only certain
individuals are exposed to HIV in this way. We decided to give our respondents in the final survey the opportunity to report involuntary sex, but we remain unsure whether in our quantitative analysis positive responses should be construed as individual characteristics predictive of risk behaviors along with voluntary acts, or as an entirely separate category of environmental hazard. This phenomenon may constitute an example of an area where the sociocultural conditions of a particular population are so different from those for which the theory was developed that its explanatory power is fundamentally undermined.

This article has described two preliminary steps necessary for testing the applicability of Jessor's theory within the Ethiopian context: choosing theoretical constructs that are relevant for the population at hand and the use of a survey instrument that adequately captures these constructs and provides reliable information. Although these steps are time-consuming, they ensure an adequate test of the applicability of a theoretical framework transported across cultures.

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