Perceived Sufficiency and Usefulness of IEC Materials and Methods Related to HIV/AIDS among High School Youth in Addis Ababa, Ethiopia

Amsale Cherie, Getenet Mitkie, Shabbir Ismail and Yemane Berhane

Abstract

This study was conducted to assess the perceived sufficiency and usefulness of HIV/AIDS information, education and communication (IEC) messages and materials as well as to identify preferences for IEC sources and methods. Data were collected using a self-administered questionnaire and focus group discussions. A total of 901 students in Addis Ababa, Ethiopia, participated in the study. Over three quarters of the respondents believed in the usefulness of IEC. IEC materials were perceived to be useful in increasing knowledge about HIV/AIDS by 456 (51%), to influence attitude by 357 (40%) and to acquire safer sexual practices by 382 (42%) of the respondents. None of the information sources and messages available for high school students highly satisfied the sufficiency indicators. Even though no single information source was highly preferred, radio and television ranked top. Life skills training was the most desired intervention by the students. IEC on HIV/AIDS was able to acquaint students with the disease rather than equipping them with knowledge and skill needed in their daily life. Therefore, appropriate and mutually reinforcing IEC messages with emphasis on life skill training are recommended. (Afr J Reprod Health 2005; 9[1]: 66–77)

Résumé

Suffisance perçue et utilité des matériels d'IEC et les méthodes liées au VIH/SIDA chez la jeunesse des secondaires à Addis Abeba, Ethopie. Cette étude a été menée pour évaluer la suffisance perçue et l'utilité des messages et des matériels de l'information, l'éducation et la communication (IEC) du VIH/SIDA ainsi que pour identifier les préférences pour les sources et les méthodes d'IEC. Les données ont été recueillies à l'aide d'un questionnaire auto-administré et des discussions à groupe cible. Au total, 901 étudiants à Addis Abeba, Ethiopie, ont participé à l'étude. Plus de trois quarts des repondants avaient confiance en l'utilité de l'IEC. On a perçu les matériels de l'IEC comme étant utiles quant il s'agit d'augmenter de 456(51%) la connaissance sur VIH/SIDA, pour influencer de 357(40%) l'attitude et pour acquérir de 382(42%) des répondents des pratiques sexuelles moins dangereuses. Aucune des sources d'information et des messgaes disponibles pour les étudiants des secondaires n'a bien satisfait les indices de la suffisance. Bien qu'aucune source d'information n'a été bien préférée, la radio et la télévision ont occupé la première place. La formation de technique de vie a été l'intervention la plus désirée par les étudiants sur la maladie plutôt que de les munir de la connaissance et la technique nécessaires dans leur vie quotidience. En conséquence, on préconise les messages de l'IEC appropriés et mutuellement renforçants, qui mettent l'accent sur la formation de technique de vie. (Rev Afr Santé Reprod 2005; 9[1]: 66–77)

Key Words: HIV/AIDS, information, radio, television, intervention, adolescents

Correspondence: Cherie Amsale, Medical Faculty, Department of Community Health, Addis Ababa University, Addis Ababa, Ethiopia, P. O. Box 33412, Tel: 45-44-42(Residence), 15-71-16(Office), 09-66-37-63; E-mail:amsalec2002@yahoo-com

Introduction

HIV/AIDS is a major public health problem in Ethiopia, affecting people in their prime and most productive years of life. Despite a great deal of efforts, curative medicine and efficacious vaccine for the problem remain elusive. Although life-prolonging treatments with antiretroviral therapy are available with limited access, they are expensive, difficult to administer and have severe toxic effects.[1,2] Therefore, primary prevention through the provision of information, education and communication (IEC) targeted at modifying behaviours remains top public health priority in HIV/AIDS prevention and control efforts.

Despite the long years of IEC strategy implementation the HIV epidemic is spreading more quickly than the efforts employed to prevent it. Globally, 30 million people aged 15–24 years have been infected with the virus; 9% of which is estimated to be in Ethiopia.[3,4] Currently, more than one out of six young people are infected with the virus in Ethiopia; majority acquired the infection through heterosexual intercourse.[5,6] Although IEC efforts have been effective in increasing youth awareness, misconceptions and misunderstandings about the modes of transmission and prevention of HIV/AIDS are widespread.[6-12] IEC intervention is yet to successfully bring about the desired behavioural change in youth.[7-12]

All the above shortcomings reveal some weaknesses on the ongoing IEC efforts; providing mere information alone is not enough to bring about the desired behaviour change. The complex context in which youth make choices regarding HIV/AIDS-related behaviour needs to be acknowledged, therefore, to excel the rate of explosion of HIV. IEC messages should be tailored to the needs, interests, expectations, motives, goals and psychological sets of youth. IEC efforts should move away from considering youth as passive dupes of manipulated objects to individuals having multiple, changeable and highly contextual identities.[13] Since youth are rarely responsive to attempts to coerce them into changing their behaviour, it is pertinent to continuously examine the extent to which youth perception of their needs is congruent with providers. Such information is meager in Ethiopia. This study thus aims to assess the perceived sufficiency and usefulness of IEC efforts on HIV/AIDS and preferences of high school youth so that appropriate strategies can be devised in a manner that will address the need of youth.

Methodology

The study was conducted in Addis Ababa, the capital of, and largest city in, Ethiopia. It has a population of over 2.6 million, with the youth constituting 20%.[14] There are 51 secondary schools in the city. The total number of high school students is estimated to be 133,026.[15]

The study design included a cross-sectional survey and focus group discussions with high school students in Addis Ababa. A two-stage sampling was used for the survey: the first stage was selection of schools while the second was selection of students. All high schools that enrolled Ethiopian students in grades 9 through 12 for the 2001–2002 academic year were considered for the study. Schools with a special student population (such as prisoners), foreign community schools, and students needing special assistance (such as the visually impaired) were excluded from the study.

The sample size was calculated based on the following assumptions: level of significance 95%, power 80%, design effect 2 and margin of error 5%. The exact level of perceived sufficiency and usefulness of IEC about HIV/AIDS among high school youth is unknown. Therefore, to get the largest sample size an estimate of 50% was used. There was a 20% allowance for non-response based on the findings from previous school-based studies, thus giving a sample size of 922 students.

A self-administered questionnaire, including both closed and open-ended questions, was prepared and translated from English to Amharic

(the national language), and then re-translated into English to ensure consistency of meanings. The questionnaire was pre-tested in a school that was not selected for the study and administered in Amharic. Supervisors and data collectors had earlier been recruited and trained. Data collection was coordinated and supervised by the principal investigator. It was completed within four days.

To complement the quantitative study and obtain in-depth information, focus group discussions were also conducted. Four high schools were selected randomly for the focus group discussion (FGD). A total of 40 students, five male and five female, who were members of the anti-AIDS club were selected from each school using purposive sampling method. Homogeneity of participants in terms of sex was maintained; two focus group discussions consisting of 10 participants were held for each sex group. The themes for discussion in the FGDs included common beliefs about the cause, modes of transmission and protective mechanisms of HIV/AIDS; sources of HIV/AIDS related information; and usefulness and sufficiency of HIV/AIDS information provided by different media channels. The discussions were moderated by the principal investigator and each session lasted 90 minutes. The discussions were led by the principal investigator and tape-recorded, while the assistant moderator took notes. The FGDs were transcribed; and analysis focused on identifying typical descriptions and explanations guided by the main themes of the study.

The raw data were entered into the computer using EPI INFO version 6.4 and analysed using SPSS version 10. The dependent variables included in the study were HIV/AIDS-related knowledge, belief, attitude, practice and behaviour; sources of HIV/AIDS information; perceived sufficiency and usefulness of IEC on HIV/AIDS; and information preferences. The independent variables were socio-demographic characteristics and IEC materials exposure.

Ethical clearance for the study was obtained from Addis Ababa University. Each respondent gave informed verbal consent, after being told the purpose and procedures of the study. All responses were kept confidential and anonymous. Relevant authorities at all levels gave written permission.

Results

Socio-Demographic Characteristics

A total of 922 in-school youth aged 15–24 years from 23 high schools were included in the study. Data were collected from 901 students, thus giving 97.7% response rate. Nearly half (51.5%) of the respondents were females. Ninety three per cent of them were in the age group 15–19 years and 83% of them were Christians. Almost all of the students lived with one or both parents. About three quarters of the students perceived themselves as belonging to a "medium" economy family. Ninety three per cent had access to radio and more than two thirds had access to television programmes at home. Sixty per cent and 46% of students respectively had a father and mother who completed at least high school education. Nearly 90% of fathers were employed, while more than half of mothers were homemakers.

Sources of Information about HIV/AIDS

All the students had heard about HIV/AIDS. More than half had heard about it for four years or more. More than half first heard about it on radio or television. The most common sources of HIV/AIDS information mentioned were radio and television. Ninety six per cent and 94% respectively were exposed to radio and television programmes at least once a month. The second most common source of information (80%) was posters in health facilities and schools. Fifty three per cent of students discussed HIV/AIDS with their parents, and they did so at least once a month. Slightly more than one third of students obtained information on HIV/AIDS from newspapers and leaflets. Only about one quarter had HIV/AIDS covered by their school curriculum, just as 24% had opportunity to see

how to use a condom in class and 21% had opportunity to learn about asserting oneself to negotiate safer sexual relations (assertive communication skills). About 7% of the students were current members of anti-AIDS clubs. A fifth of them had peer educators in their schools and most students who had access found it easier to talk with peer educators.

Perceived Sufficiency of HIV/AIDS Messages

The effectiveness of IEC messages is a more important indicator than frequency of exposure. A single well designed message may be more effective than many poor ones in achieving the desired objective, although sometimes effectiveness is related to frequency. Table 2 shows one measure of effectiveness, namely, perceived sufficiency of the IEC material by the target audience. Although none of the information sources was regarded as highly sufficient, radio and television were consistently perceived to be more credible, understandable, appropriate, timely and practically applicable sources of HIV/AIDS information than the other sources. Radio was perceived as the most accessible source. Less than half of the students said that health professionals and religious leaders are credible. However, only one fifth to one third of students found information from health professionals and religious leaders satisfactory. Anti-AIDS clubs ranked low in sufficiency while family and peers were last. More than half of the students said the IEC material contained the information they expected. Similarly, 50%, 60% and 58% of students respectively thought that the information was insufficient to give them the knowledge they needed, and to help them develop the desired attitudes and behaviours.

Perceived Usefulness of HIV/AIDS IEC Messages and Materials

As shown in Table 3, IEC materials on HIV/AIDS were perceived to be useful in influencing knowledge by 85%, attitude by 78% and practice by 75% of the respondents. In terms of actual knowledge, attitude and practice three quarters knew that AIDS is currently incurable, but one third apparently believed that there is a vaccine for it. Almost all students knew at least three correct modes of transmission and at least three correct means of prevention. There are still about five misconceptions shared by one quarter of students such as transmission as a result of wearing clothes worn by people living with HIV/AIDS (PLWHA), sharing toilets with PLWHA, mosquito bites, eating and shaking hands with PLWHA. Similarly, the misconception that poor nutrition can lead to HIV infection was shared by 43% of the students. Nearly one third would not eat a meal with a PLWHA, and half would not live in the same house with a PLWHA. Nine per cent of the students admitted being sexually active.

Preferences for Sources of Information, Messages and Channels of Communication about HIV/AIDS

Table 4 shows students' preferences for source of information on HIV/AIDS. Although none of the information sources was highly preferred by the students, radio and television were top on the list. More than half of the students wanted to be taught by health professionals. Almost 100% of them said the best time to listen to a radio or watch television message is in the evenings after 8.00 p.m. and on weekends. Most of the delivery options listed in the questionnaire was acceptable to at least a quarter of students. Two thirds of students favoured drama, 45% integration into school curriculum, and 29% song, as preferred media for delivering HIV/AIDS messages.

When students were asked to list three things they would like to know about HIV/AIDS, 46% wanted life skills training, 25% wanted to know more about the cause and transmission, while 29% wanted to know more about prevention.

Table 1 Socio-Demographic Characteristics of Addis Ababa High School Students, November 2001

Variable	Female		Male	
	Number	%	Number	%
Age (years)				
15–19	430	94.2	411	94.1
20–24	34	5.8	26	5.9
Religion				
Christian	400	86.2	378	86.4
Muslim	55	13.7	54	12.4
Others	9	1.9	5	1.2
Ethnicity				
Amhara	258	55.6	244	55.8
Oromo	76	16.4	77	17.6
Tigre	52	11.2	42	9.6
Guargie	40	8.6	40	9.1
Others	38	8.2	34	7.8
Marital status				
Married	8	1.7	2	4.3
Not married	456	98.3	435	99.5
Live with				
Both parents	308	66.4	267	61.1
One parent	127	27.4	138	31.6
Others	29	6.2	32	7.3
Perceived family economic status				
Poor	90	19.4	56	12.8
Medium	328	70.7	327	74.8
Rich	24	5.2	34	7.8
No response	22	4.7	20	4.6
Radio in the household				
Yes	431	92.9	406	92.9
No	33	7.1	31	7.1
Television set in the household				
Yes	326	70.3	302	69.1
No	138	29.7	135	30.9
Paternal education level				
Illiterate and non-formal	128	27.6	113	25.9
Elementary complete	96	20.7	121	27.7
High school complete	74	15.9	65	14.9
Above 12 grade	166	35.8	138	31.6
Maternal education level				
Illiterate and non-formal	178	38.4	169	4.3
Elementary complete	119	25.6	116	26.5
High school complete	70	15.0	58	13.7
Above 12 grade	97	20.9	94	21.5

Table 2 Perceived Sufficiency of HIV/AIDS Messages, Survey of Addis Ababa High School Students, November 2001

Variable	Category*	Number	%
Perceive source as credible	Radio	527	58.5
	Television	511	56.7
	Health professionals	422	46.8
	Religious leaders	384	42.6
	Anti-AIDS clubs	306	34.0
Perceive message as understandable	Radio	469	52.1
	Television	476	52.8
	Health professionals	300	33.3
	Religious leaders	307	34.1
	Anti-AIDS clubs	208	23.1
Perceive message as appropriate	Radio	459	50.9
	Television	446	49.5
	Health professionals	292	32.4
	Religious leaders	277	30.7
	Anti-AIDS clubs	197	21.9
Perceive information as timely	Radio	495	54.9
	Television	435	48.3
	Health professionals	236	26.2
	Religious leaders	270	30.0
	Anti-AIDS clubs	165	18.3
Perceive message as practically applicable	Radio	420	46.6
	Television	395	43.8
	Health professionals	211	23.4
	Religious leaders	287	31.9
	Family	189	21.6
Perceive source as accessible	Radio	482	53.5
	Television	308	34.2
	Religious leaders	147	16.3
	Family	166	18.4
	Peers	109	12.1
Interested in getting messages from	Radio	191	21.2
	Television	171	19.0
	Health professionals	82	9.1
	Religious leaders	116	12.9
	Family	155	17.2
Extent to which the IEC material contained the expected messages	Highly	245	27.2
	Moderate	259	28.7
	Fair	227	25.2
	Not at all	170	18.8
Sufficiency of the IEC compared with:			
Knowledge wanted	Sufficient	456	50.6
	Insufficient	445	49.4
Attitude want to develop	Sufficient	357	39.6
	Insufficient	544	60.4
Behavior or practices want to acquire	Sufficient	382	42.4
	Insufficient	519	57.6

*Categories not shown with insignificant or no responses include posters, pamphlets, neighbours, newspapers and school

Table 3 Perceived Usefulness of HIV/AIDS IEC in Terms of Knowledge, Attitude and Practices or Behaviour, Survey of Addis Ababa High School Students, November 2001

Variable	Category*	Number	%
Perceived increase in knowledge about HIV/AIDS	Yes	761	84.5
	No	140	15.5
Source helped to increase knowledge	Television	187	24.6
	Radio	166	21.8
	Health professionals	67	14.2
	Religious leaders	108	13.5
	Family	103	7.4
Perceived change in attitude as a result of IEC	Yes	704	78.1
	No	197	21.9
Source that helped change attitude	Radio	150	16.6
	Television	174	19.3
	Health professionals	69	7.7
	Religious leaders	108	12.0
	Family	81	9.0
Perceived change in behavior as a result of IEC	Yes	676	75.0
	No	225	25.0
Source that helped change behavior	Radio	145	21.4
	Television	149	22.0
	Health professionals	63	9.3
	Religious leaders	98	14.5
	Family	95	14.1

*Categories not shown with insignificant or no responses include posters, pamphlets, neighbours, newspapers and school

Results from the Focus Group Discussions

Cause, transmission and prevention

Respondents' reported that knowledge of the cause, transmission and prevention was high, but there were misconceptions and speculations, such as transmission through casual contact and mosquito bites. One participant reported:

> Since HIV is transmitted through blood and blood products there is no reason that one cannot get HIV from mosquito bites.

Many of the discussants said:

> Most youth have a fear to live and eat with PLWHA because they think that they will be exposed to the virus in one or the other way, the utensils they are using, the clothes they are wearing, even their hands and body may be contaminated with the virus.

Sources of information about HIV/AIDS

The sources of HIV/AIDS information mentioned include mass media, anti-AIDS clubs, leaflets, posters, religious leaders, teachers, friends, health professionals, parents and newspapers. The frequency of use and perceived effectiveness vary considerably. No full consensus was reached on any single best source of information for all.

Usefulness and sufficiency of HIV/AIDS IEC messages and materials

The group discussions confirmed that mass media is the most important source of information on HIV/AIDS, with parents, religious leaders, health professionals, peers and schools playing a much smaller role. Official broadcasts on radio and television have conveyed accurate information on HIV/AIDS, but the mass media also convey images that arouse sexual desires. Respondents reported that:

> The media are transmitting confusing and sometimes inappropriate images; it is difficult for us to know which one to choose.

Some youth spoke against condom advertisements that are presented without reference to alternatives and without usage instruction. One boy reported hearing on the television the word:

> Give value for your life everyday but we are not told how to do it, as a result students take it as a fun.

Posters and leaflets were not always up-to-date, clearly presented, or regularly produced in sufficient quantities. Horrifying messages about HIV/AIDS have also been sources of misconceptions.

Students in the focus groups indicated that HIV/AIDS is often not covered in the school curriculum, but when it is, it is included in Biology and covers only definition, cause, transmission and prevention mechanisms. Students felt that such information is not effective for behavioural change. In order to influence their practices, students need life skills such as decision-making, problem-solving, effective communication, assertiveness and conflict resolution. They noted that:

> Students are denied the right to get appropriate information even at school because the teachers themselves do not have the willingness, the courage as well as the knowledge to teach life skills.

Especially female students reported that discussion with teachers about such issues is too hard for them. AACs and peer educators were main information sources at school, but some of the respondents said:

> They are not providing the messages needed on continuous basis, and in some schools their presence is known only on World AIDS Days.

The students also gave reasons for not joining anti-AIDS clubs to include inconvenient time and venue, involvement with other clubs, not being admitted to the club, non-functionality of the club and lack of good role model among club members.

Most parents are not willing; they feel confused, embarrassed, lack the knowledge and skill to discuss sexuality with their children. Similarly, most students fear to discuss sex, sexuality and HIV/AIDS with their parents. Even if they do, they do not receive complete information, as a result:

> Family opinions and attitudes appear to be given relatively less weight than those of peers.

Especially female students said they do not feel comfortable talking about this subject with their parents for fear of being labelled as promiscuous. One student said:

> A friend of her died of criminal abortion for fear of not telling her pregnancy to her parents and many of our friends are suffering from different problems because of lack of parental support and guidance.

HIV prevention messages are likely to have the greatest impact when they address wider concerns relating to sexual behaviour including emotional needs. Young people have been exposed to many facts about HIV/AIDS but they rarely have an opportunity to ask questions and discuss their own ideas, thoughts and feelings. Theoretical knowledge is not sufficient, they need the skills to resist pressures and negotiate abstinence or the use of condoms. Especially female students pinpointed that:

> Most female students don't have access to appropriate information and education and are marginalized everywhere, at home, school and in the community. As a result they are exposed to HIV/AIDS, STDs, pregnancy, and violence. Consequently, they drop out from school and suffer from the social, psychological, emotional and economic problems.

Table 4 Preferences for Sources of Information, Message Content, Method of Delivery and Timing of Delivery among Addis Ababa High School Students, November 2001

Variable	Category	Number	%
By whom do you want to be educated about HIV/AIDS?	Radio	482	53.5
	Television	481	53.4
	Health professionals	468	51.9
	Religious leaders	420	46.6
	Family	381	42.3
	Anti-AIDS clubs	364	40.4
	Teachers	340	37.7
	PLWHAs*	339	37.6
	Peers	291	32.3
	Leaflets	269	29.9
	Newspaper	266	29.5
	Posters	239	26.5
How do you think information about HIV/AIDS should be communicated to you?	Drama	612	67.9
	Education	409	45.4
	Discussion	311	34.5
	Song	257	28.5
	News	211	23.4
	Speeches	177	19.6
Which day and time is convenient for being taught by radio and TV?	Evenings after 8 pm	480	99.6
	Weekends	482	100
	After 5 pm	102	21.2
	Before 8 pm	30	6.2
	Anytime	22	4.6
Things you would still like to learn about HIV/AIDS	Appropriate information, education	563	62.5
	All aspects of HIV/AIDS	193	41.3
	Life skills training	413	45.8
	Cause and transmission	225	25.0
	Prevention mechanisms	259	28.7
	How to live with PLWHA	63	7.0
	Behavior change	34	3.8
	Self discipline	20	2.2

*Persons living with HIV/AIDS

The images used by the mass media, as well as in the real world (such as adults), are not good role models. Adults do the opposite of what they profess. Especially boys and girls are threatened and forced to have sex by adult women and men in exchange for gifts and various materials.

Discussion

IEC is a vital armoury in curtailing the imminent increase in the spread of HIV. However, information on the achievement of IEC efforts from clients' perspective is scarce in Ethiopia. This study investigated the perceived usefulness and sufficiency

of HIV/AIDS messages and materials as well as preferences among high school youth in Addis Ababa. Over three quarters of high school students believed that their knowledge, attitudes and beliefs have changed to some degree through IEC. However, only half of the students felt that IEC is sufficient to give them the knowledge they needed. Forty per cent felt that IEC helped them develop the desired attitude changes, while only 42% felt that IEC helped them practice safer sex.

Before addressing the implications of this study, some methodological issues are considered. The survey was designed to be self-administered and anonymous to maximize disclosure. It was also enriched by qualitative analysis. However, social desirability bias may have affected the reliability and validity of students' response. Since the study is cross-sectional the directionality of the associations cannot be ascertained. On the other hand, the representativeness of the sample and the high participation rates make the findings generalisable to similar population.

It is striking that only about half of the respondents perceived IEC on HIV/AIDS to be sufficient in increasing their knowledge, attitude and practice as well as addressing their needs and expectations. In a country where HIV/AIDS infection rate is escalating, with adult prevalence of 6.6%,[4,16,17] this is an alarming finding. Addressing the concerns and interests of young people, therefore, is of paramount importance in designing an effective IEC programme.

The intent of IEC is to influence the cognitive, affective and psychomotor domains of the receiver.[5] This can be realised when the source is credible and the message is understandable, appropriate, timely, practically applicable, accessible and in line with the expectation and interest of the target audience. However, none of the information sources and messages was rated highly in all these, which may be the cause for the misconceptions and reluctance to bring about the desired behavioural changes.

IEC efforts aimed at youth must be developed with an understanding of how young people acquire knowledge, skills and attitudes that result in their desired behaviour. The youth are guided by their perceptions of a situation, which are not always accurate. Meanings are interpreted selectively, according to both individual and group psychological mindsets.[13] Therefore, the complex context within which youth make choices regarding sexual relations and their high risk sexual behaviour must be acknowledged in the design and delivery of IEC. An effective way to do this is by involving youth in the development process; in evaluating their needs, perceptions, and in designing and implementing youth-oriented programmes.

Compared to the national demographic health survey results, students in this study had high IEC exposure, were more knowledgeable and more sexually active.[18] This may be due to the wider coverage of the demographic health survey than our study. There is also a wide gap between the responses of the perceived usefulness of IEC in affecting knowledge, attitude and practice and the actual reported knowledge, attitude and practice. Thus, narrowing this gap by continually assessing the compatibility of the expected and provided message has supreme importance in curbing the spread of HIV/AIDS and averting its ill and tragic effect.

The mass media are emerging as one of young people's most common sources of information about HIV/AIDS.[11,12,19,20] Although the students were exposed to various interpersonal and mass media messages at different settings, radio and television were their main sources of information. Mass communication can create awareness, while only interpersonal communication can move to individual action.[21] Therefore, to bring about behavioural change, the interpersonal component must be seriously considered. On the contrary, the mass media is criticised for presenting contradicting and conflicting messages that arouse sexual feeling through popular films, music and printed material.[19,20] Moreover, the advertisement of condoms in the mass media is presented without

reference to other prevention alternatives and devoid of usage instruction. This may distort youth perception, thus resulting in faulty decision. IEC efforts should help youth reduce risk by taking into account this conflicting contextual environment. Youth need more practical information that will help them in their real life situations.

Although some studies indicate that young people prefer parents to be the main source of information about HIV/AIDS, many parents and children are still not comfortable discussing sexual issues.[19,22] Only about half of the respondents in this study discussed HIV/AIDS with their parents. Since parents are the first socialising agents and accessible source in time and place, utilising this potential has a considerable importance and a breakthrough to greater success in solving the problem.

HIV/AIDS was said to be integrated in biology lessons in the school curriculum. However, in this survey majority of the respondents did not perceive that they had taken lessons about HIV/AIDS in class. People are active information seekers if the information offered is responsive to their needs. Since perception is an active and motivated process what is perceived tends to be governed by personal interests, wants, concerns and expectations.[13] Therefore, the message should be of immediate, concrete and explicit relevance to the audience for it to be attended and internalized, which is lacking in the current mode of information delivery in the schools.

Students listed a wide variety of preferred sources of information, indicating that it is appropriate to continue pursuing a multimedia approach, as none of the sources was highly preferred. This might be attributed to the diversity of youth preference, perceived credibility of the sources and appreciation of efforts to address the needs and expectations of students. Respondents identified lack of family life education and lack of training in life skills as the two main hindrances to promoting safer sexual behaviours. The school-based approaches (curriculum, peer educators and anti-AIDS clubs) need to be strengthened. The survey results suggest that the family, religious leaders and health professionals can also play an important role, with many of them being viewed as credible and reliable.

In conclusion, HIV/AIDS IEC efforts were not sufficient to provide in-depth knowledge, influence attitude and change sexual behaviour in the schools. Apart from this, the youth were not made to develop life skills necessary to negotiate safer sex and to develop learner's skills such as decision-making, problem-solving, effective communication, and assertiveness and conflict resolution. In addition, IEC did not fully address the concerns, interests, expectations, hopes, fears and wishes of the youth regarding HIV/AIDS. Perceived increase in knowledge, attitude and practice were not up to expectation. Sufficiency of IEC is perceived to be low.

The following recommendations are given based on the findings of the study: students should be involved in the design, implementation and evaluation of IEC programmes for youths. This will ensure that students' feelings, experiences, expectations, concerns and problems would be taken into account at all stages. Emphasis in IEC should be on life skills training and practical application of HIV/AIDS information. Students need to learn how to negotiate safer sex, be assertive, and apply problem-solving and conflict resolution skills towards practicing safer sexual behaviour. Printed materials should be periodically updated and should be culturally, age and gender appropriate, as well as offer complete information in an attention-getting way. Teachers should be trained to strengthen school-based IEC. Peer education and anti-AIDS club programmes need review and strengthening. Parents need encouragement, support and resources to talk with and work with their children in maintaining responsible attitudes and safer practices. Where there is limited or no censorship over the media,

which includes sexually arousing materials, the youth need guidance and should be taught how to deal with the conflicting messages they receive.

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