

Swiss teenagers, AIDS and sexually transmitted diseases: presentation and evaluation of a preventive exhibition

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Abstract

As part of a larger school-based health program for Swiss apprentices and students, an AIDS and sexually transmitted disease (STD) prevention exhibition was offered to 7000 boys and girls aged 15–19. Its objectives were: (1) to reinforce their knowledge of STD and AIDS transmission and prevention, and (2) to modify their attitudes and behavior regarding (a) the decision whether, when and how to have sex and (b) the use of condoms. The exhibition consisted of six posters, reviewed by specially-trained teachers and nurses. Condoms were presented in an amusing way and were freely available. A case control follow-up survey was carried out 12 weeks later in two random samples: 798 subjects from an experimental school and 600 subjects from a control school completed an anonymous multiple-choice questionnaire. Of the respondents, 69% were sexually active, and among this group, 76% of the boys and 59% of the girls had used a condom at least once but only 15% used them regularly. As regards knowledge, both groups reached high levels (75–97% of right answers); the group exposed to the exhibition scored higher for only two items ($P < 0.05$). Significantly more teenagers in the experimental group said they had handled condoms or had condoms with them 'just in case ...'. This evaluation shows that an AIDS and STD prevention exhibition for teenagers may be both feasible and effective. However, future intervention programs should include practical interpersonal counseling

on topics such as mutual trust, contraception issues, and the purchase and use of condoms.

Introduction

Switzerland, a confederation of 23 cantons, currently has the highest proportion of AIDS patients in Europe, with a rate that was around 174 per million people in December 1989 (Office Fédéral de la Santé Publique). This serious situation explains why the Swiss Federal Office for Public Health planned a national campaign against AIDS, which was launched in February 1987, and which is aimed at the entire population. This campaign, called 'STOP AIDS', is still going on and consists of TV advertisements and programs on AIDS, street posters and pamphlets directed at young people, homosexuals and pregnant women, and action directed at so-called high-risk groups. The use of condoms for sexual relationships with multiple or casual partners, the non-sharing of injection equipment for drug users, as well as the notion of fidelity between sexual partners, are all heavily emphasized. This extensive campaign has been subjected to an evaluation (Hausser *et al.*, 1988, 1989, 1990).

Even if all adolescents cannot be considered at risk, they represent an important target group for an AIDS prevention program, since they are in a process of discovering their sexuality and often have more than one partner—some of whom may exhibit high-risk behavior. At the present time, one of the most efficient ways to prevent the spread of AIDS among young people is to promote the use of condoms as widely as possible. This type of primary prevention also constitutes a good measure against sexually transmitted disease (STD) (Martin and Michaud, 1988). The use of the HIV test should be dis-

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couraged, as it can wrongly reinforce adolescents' feeling of invulnerability (Martin and Michaud, 1988; Office Fédéral de la Santé Publique, 1988).

The present paper focuses on the presentation of an AIDS and STD prevention exhibition developed in January 1987 in a large vocational school of about 7000 apprentices aged 16–19 in the canton of Vaud, Switzerland. It also gives the main results of a survey which was conducted 3 months later in this center and in another similar school.

The exhibition was developed within the general context of a 6 year old school health project, called the 'Youth and Health Program' (Michaud and Martin, 1984) which is mainly promoted by public health nurses working in close coordination with physicians and teachers. It offers, in the general field of health monitoring and promotion, individual screening based on a comprehensive health interview, emergency and non-emergency individual counseling and care and, finally, health education activities which take into account the needs and wishes of the pupils themselves. As the same nurses are responsible for all the activities, close coordination between these three aspects of the program can be guaranteed. The project described in this paper is an example of this concept of prevention.

The exhibition

The objectives of the AIDS–STD exhibition were as follows (Michaud *et al.*, 1987; Martin and Michaud, 1988):

- (1) To improve young people's knowledge of the transmission and prevention of AIDS and STDs, focusing on the practical means which prevent the transmission of the virus and on the situations that carry no risk of infection.
- (2) To modify teenagers' attitudes and behavior towards contraception in terms of fostering discussion with their partners and choice of condoms.
- (3) To help young people take personal and responsible decisions about their sex life: this objective implies the inclusion of psycho-social and ethical issues in the discussion.

- (4) To give apprentices personally concerned about AIDS and STDs an opportunity to discuss their problems with one of the public health nurses working in the school. If necessary, they are given addresses of where to find medical and/or psychological help.

The preparation of the exhibition was a 3 month long process that included the collaboration of certain pupils and teachers. It was decided that it would deal above all with the everyday life aspects of STD and HIV transmission and prevention and not with theoretical matters. The problems would be presented in a comprehensive and positive way. The language would be simple and understandable but not titillating.

The project included a six-panel exhibition, dealing with sex life, AIDS and STD transmission, STD symptoms, the use of condoms and, finally, the way to behave with HIV carriers and AIDS patients. The exhibition was presented and constantly manned by nurses, teachers or other specially-trained staff. Each class of around 15 pupils spent 20–30 minutes in the exhibition. The discussions were very encouraging in most instances. Condoms were exhibited in various ways: sketched, inflated and knitted; humour was part of the exhibition! Condoms were also available: around 30 000 of them were distributed.

Individuals who had more questions or who needed counseling were invited to go to the nurse's office, where a member of staff was always on hand.

The exhibition was 75% funded by the Swiss Federal Office of Public Health, and the Cantonal Public Health Service provided the remainder. It cost, together with the evaluation process, US\$15 000.

Methodology of the survey

The objectives of the evaluation were: (1) to obtain base-line data on the knowledge apprentices had of STDs and AIDS, as well as their attitudes towards contraception (i.e. condom use) and their sexual behavior, and (2) to measure the impact of the exhibition.

We chose a quasi-experimental design using a post-

test with a control group. Three months after the exhibition, two samples of classes were selected, one from the experimental school and another from a control school which was smaller than the experimental school but similar in other respects. The apprentices were asked to complete an anonymous two-page multiple-choice questionnaire dealing with knowledge of AIDS and STDs, attitudes towards contraception, sexual behavior, and demographic information such as age, sex, type of job and place of residence. The instrument was not internally validated but was tested and further modified before extensive use. No one refused to fill in the questionnaire. Answer rates to different questions ranged from 70% to over 90% (mostly above 90%).

We did not seek to distinguish between heterosexual and homosexual behavior: this topic was, in our context, too sensitive to be included in such a brief questionnaire.

The results were processed with SPSS for cross-tabulations and classical regression analysis.

Results

Study sample

The sample covered by the survey (Table I) consisted of 1398 French-speaking 16–20 year old apprentices, of whom 71% was boys. There was no significant difference between the experimental and the control group in terms of age, but boys, sexually active individuals and adolescents who lived in towns

and cities (more than 5000 inhabitants), were slightly over-represented in the experimental group. The distribution of trades (not seen in the figure) was, overall, the same in both groups.

Knowledge

Concerning knowledge of AIDS, around 10% of the respondents felt very well informed, 70% fairly well informed, 15% not well informed and 5% ill informed. There was no statistical difference between either groups, nor between boys and girls.

The percentages of correct answers to different items (Table II) varied between 68% and 95%, with a slight difference in favor of the experimental group for some items, such as non-transmission of the virus via all types of kissing and the absence of risk of contamination from the hairdresser.

A cumulative index of correct answers was constructed: 40% of the respondents made no mistakes (out of a total of 11 items), 30% one or two errors, 20% three to six errors and 10% more than six. There was no difference between the experimental and the control groups. Boys and girls, sexually active as well as inactive, had similar levels of knowledge.

Attitudes

Attitudes towards condom use were not only more difficult to assess but also not easy to interpret: even if young people say they are willing to use condoms, one does not exactly know to what extent they will really do so when having sexual relations. As

Table I. Study sample

	Experimental group N = 822 (%)	Control group N = 576 (%)	Differences P-values (χ^2)
Boys	79	68	
Girls	21	32	0.001
< 17 years	40	44	
≥ 17 years	60	56	NS
Sexually active	22	30	
Sexually inactive	78	70	0.01
Urban	71	61	
Rural	29	39	0.001

Table III shows, virtually all respondents (99%) knew what a condom is and most of them had handled one. Nearly 70% had discussed the topic of condom use with their partner. Far more boys than girls had purchased condoms or had one on them 'just in case ...'.

Respondents were also asked what they would do if they considered having sex with a partner they did not know well [an 'at risk situation' (Table IV)]. Half of the respondents claimed they would be ready to

use a condom—although there must be some doubt whether the youngsters who say they would use condoms readily really would do so when faced with a situation in reality. Perhaps the 15% who say they would experience difficulty are more realistic! The majority of the rest of the respondents did not feel concerned because they felt they would not face this situation (girls more so than boys, $P < 0.005$). Again, whereas 50% considered the use of condoms convenient and safe, one-third had a negative

Table II. Knowledge of transmission of HIV infection

	Correct answers (%)	Differences between experimental/control schools (P-values)
Kissing	95.6	0.05
Sharing food	97.9	0.1
Going to the hairdresser's	97.0	0.05
Not washing after sexual intercourse	75.2	0.2
Cat scratches/mosquito bites	94.8	0.2
Swimming pool	97.0	0.2
Shaking hands	99.5	0.2
Having sex with a drug addict	97.0	0.7
In public toilets	87.0	0.6
Injecting drugs	94.9	0.9
Sharing everyday life with a homosexual	91.5	0.08

Table III. General attitudes to condoms

	Boys N = 862 (%)	Girls N = 332 (%)	Differences (P-values)
Have you ever heard of condoms?	99.5	99.7	0.8
Have you ever handled condoms?	93.9	75.8	0.0001
Have you discussed condom use with your partner?	68.9	65.1	0.1
Have you ever bought condoms?	57.5	16.6	0.0001
Do you have condoms with you 'just in case ...'?	41.3	10.2	0.0001

Table IV. If you were to engage in sexual intercourse with a partner you do not know well, a so-called 'at risk situation', would you use condoms?

	Boys N = 862 (%)	Girls N = 332 (%)
Without any problem	55.9	48.7
With some difficulty	19.3	13.6
I would not dare to discuss the problem	1.3	2.2
I would rather not have sexual intercourse	2.0	1.6
I would not use a condom	2.0	2.2
I do not feel the question applies to me	16.9	28.8

perception of condom use (either because it would be embarrassing or might reduce sensation).

Sexual behavior

As shown in Table V, 69% of the sample were sexually active; more boys than girls said they engaged in sexual relations but more girls than boys had sex on a regular basis ($P < 0.001$). Of these youngsters, 27% had had only one partner, 42% had had two to four partners and 30% more than four partners. Boys say they had had significantly more partners than girls ($P < 0.001$).

Among the adolescents who reported they were sexually active, 70% of boys (but only 20% of girls) claimed to have already bought condoms at least once. Of the sexually active adolescents, 73% claimed to have used a condom at least once (76% of boys, 59% of girls) but only 23% of boys and 10% of girls used condoms regularly. All of these differences between boys and girls were statistically significant ($P < 0.001$). This difference is, however, difficult to interpret, since some girls may have misjudged the question and may have answered no because only their partner used the condom!

Because adolescents who engage in sexual relations with more than one partner are obviously at a higher risk of getting STDs and AIDS, we compared attitudes towards condom use and behavior among sexually active respondents with, respectively, one partner, two to four partners and more than four partners. Regarding attitudes, there were essentially no differences between the three groups except that the respondents with two to four partners had bought more condoms than those in the two other groups.

We found no difference between the three groups regarding behavior: in other words, even in the group with more than four partners, the use of condoms on a regular basis was still low (15%).

Among sexually-active adolescents, 32% of boys and 52% of girls reported use of the pill as a regular method of contraception; 10% used coitus interruptus!

A regression analysis was performed to detect the influence of the exhibition on condom use, checking the age, sex, sexual activity, knowledge and the theoretical acceptance of condoms. As can be seen from Table VI, boys are significantly more likely to have handled, purchased and used condoms than girls. This was also the case for older adolescents. Quite naturally, the fact of being sexually active positively influences attitudes and behavior in respect of condom use. However, degree of knowledge does not appear to influence use.

Discussion

The results can be summarized and interpreted as follows:

- (1) The level of knowledge regarding the transmission and the prevention of AIDS is high to very high. There is no difference between boys and girls or sexually active and inactive adolescents; there is no statistically significant difference between the experimental and control group either.
- (2) Of the sexually active adolescents 73% claim to have used a condom at least once (76% of

Table V. Sexual behavior of the respondents

	Boys <i>N</i> = 862 (%)	Girls <i>N</i> = 332 (%)
Have never had sexual intercourse	24.2	33.9
Am not having sexual intercourse at the present time	13.7	12.3
Have casual sexual intercourse	37.2	14.5
Have regular sexual intercourse	24.9	39.4
<i>For those sexually active:</i>		
Have had one partner only	37.3	72.1
Have had two to four partners	41.3	15.3
Have had more partners	19.6	12.6

Table VI. Impact of the exhibition on attitudes and behavior towards condoms

	Regression analysis: beta values					R-square
	sex	age	knowledge	sexual activity	group	
Have you ever handled condoms?	0.24***	0.06	0.12***	0.26***	0.09***	0.16
Have you ever discussed condom use with partner?	0.03	0.01	0.02	0.48***	0.01	0.23
Have you ever purchased condoms?	0.38***	0.02	0.04	0.33***	0.00	0.26
Do you have condoms with you just in case?	0.29***	0.10***	0.03	0.15***	0.09***	0.13
Have you ever used condoms?	0.18***	0.01	0.04	0.56***	0.01	0.34
Do you use condoms regularly?	0.14***	0.10***	0.03	0.27***	0.01	0.08

***t-test $P < 0.01$.

boys and 59% of girls), and 23% of boys and 10% of girls do use condoms regularly.

- (3) There is no difference between the two groups in terms of condom use; however, more adolescents in the experimental group have handled condoms and have some with them 'just in case ...'.

Some methodological points deserve special mention. First, as in any survey by questionnaire dealing with topics like adolescent sexual attitudes and behavior, one cannot be sure that the results accurately reflect reality. A good explanation of the aim of the study before filling out the questionnaire and the strict guarantee of anonymity may have improved the quality of the answers. The very low rate of non-response reinforces this assertion. The comparisons between different questions dealing with the same topic (i.e. condom use) also reveal similar rates.

Secondly, during the 3 month period that elapsed from the exhibition to the evaluation, the Swiss national 'STOP AIDS' prevention campaign was initiated (February 1987) and was presented by all the media. In other words, the experimental group as well as the control group were submitted to many sources of information: this external influence should be kept in mind and explains, in our opinion, the lack of more statistically significant differences between

the two groups, both in terms of knowledge and behavior.

However, it is this federal campaign which probably explains the high level of knowledge in the population surveyed: indeed, Swiss teenagers' knowledge of AIDS and STDs is quite good compared with the results of similar surveys held in the US. For instance, Strunin and Hingstron (1987), in a survey of Massachusetts adolescents' knowledge regarding AIDS, found error rates as high as 57% (e.g. getting AIDS through kissing) and most accurate answer rates fell below 60%. DiClemente *et al.* (1986), in a survey among adolescents in San Francisco, also found a substantial percentage of wrong answers: 14% of respondents did not believe that using a condom during sex could reduce the risk of getting AIDSs, 10% of them imagined you could get AIDS by shaking hands with someone infected and about 40% thought that you could get AIDS through kissing (compared with 5% in our study). These percentages were even worse in certain subgroups (DiClemente *et al.*, 1988) in a survey of inner-city New York adolescents, Goodman and Cohall (1989) also obtained rates that are considerably below ours. A recent survey carried out in Massachusetts has shown more comparable results with percentages of false answers ranging from 1% to 25% (Hingson *et al.*, 1988).

Most existing surveys deal essentially with

knowledge and attitudes, and few of them deal with rates of condom use. Considering that, in our study, more than 50% of sexually active adolescents have used condoms at least once, and also that 15–20% use them regularly, our results are not discouraging—since Strunin and Hingson (1987) report a rate of only 10%. A survey undertaken in Somerset by Bowie and Ford (1989) among 16–21 year old youngsters shows even better results, with 73% of boys and 75% of girls who were sexually active having already used condoms, and 36% of both boys and girls having used them the last time they had sexual intercourse.

The fact that the exhibition probably persuaded adolescents to handle and have condoms with them 'just in case ...' is also satisfying, since this change in behavior should increase the tendency to use condoms when needed.

However, compared with the high level of knowledge, one can be disappointed by the remaining low rate of condom use, especially if this percentage is, as we have observed, the same whether adolescents have one or multiple partners! This result is corroborated with those of Bowie and Ford (1989). Thus, there is still, as in many other instances, a large gap between knowledge and behavior: it is in fact frequently very difficult for adolescents who engage in sexual relations, often with inexperience, embarrassment and shyness, to share with their partner the kind of discussion necessary for the effective use of condoms.

In other words, as other authors have noted (Becker and Joseph, 1988; Kegeles *et al.*, 1988), what is badly needed in the future are prevention programs that do not focus primarily on information, but include practical counseling on topics such as sharing, trust, discussing contraception issues with partners, and purchasing and using condoms on the right occasion and in an appropriate way. This practical counseling can take many forms (Michaud *et al.*, 1988): as in our program, it may be run by school health nurses or physicians. It may be part of sex education courses or it could be set up in different ways: through computer-based interactive programs, telephone hot-lines, encounter and self-help groups or, finally, by specially-trained youngsters (or 'mediators').

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