

Students get wise about AIDS

The acceptability, feasibility and impact of an AIDS education programme in a suburban school in Cape Town

C. Mathews, K. Everett, C. Lombard, S. Swanevelder

Objectives. The study assessed the acceptability and feasibility of an AIDS education programme for South African high-school students.

Design, setting and subjects. A 'before-after' study was conducted in a suburban high school in Cape Town. All 232 standard 8 students were included, and were exposed to the programme over 9 months.

Outcome measures. Students' knowledge about AIDS and sexually transmitted diseases (STDs), attitudes towards people with AIDS and towards AIDS prevention, perceptions of self-efficacy with regard to risk reduction, self-reported behaviour and opinions on the programme were measured using questionnaires. In addition, teachers' opinions of and experiences with the programme were assessed.

Results. After the programme, significantly more students knew how to protect themselves from HIV, could identify the symptoms of STDs and understood why people with STDs had a higher risk of becoming infected with HIV. After the programme, significantly more students believed that they knew how to use a condom (77% at baseline, 88.6% at follow-up; $P < 0.01$). Prior to the programme only 20.8% of the students reported ever having had sexual intercourse. After the programme, significantly more students (32.8%) reported having had sexual intercourse. Most students (80.5%) reported that the programme had helped them to make plans to protect themselves from HIV infection. Teachers found the programme valuable and easy to use.

Conclusions. There are several South African school programmes such as 'Get Wise about AIDS' which have been shown to be acceptable and feasible, and which seem to be effective. Randomised controlled trials are now needed to provide conclusive evidence of their effectiveness.

S Afr Med J 1996; **86**: 1494-1498.

Young people are most severely affected by the HIV epidemic in South Africa. The 1994 national HIV seroprevalence survey of antenatal clinic attenders found that the prevalence of HIV infection was 6.47% among pregnant teenagers and 8.94% in the 20 - 24-year age group.¹ It is predicted that two-thirds of those South Africans who will be infected by the year 2000 are currently under the age of 20 years.² Available data on the sexual behaviour of South African youth indicate that many adolescents are sexually active at a young age, have multiple partners and do not take adequate precautions against pregnancy and sexually transmitted diseases (STDs).³⁻⁷

School-based sexuality education programmes as a means of AIDS prevention have been singled out as a priority.⁸ Since the April 1994 elections, the new government has set up a national AIDS control programme that is working towards the introduction of HIV and sexuality programmes in all high schools.

The 'Get Wise about AIDS' programme

'Get Wise about AIDS'⁹ is a lifeskills-based HIV prevention education programme for South African high-school students. It aims to reduce HIV transmission by providing students with accurate knowledge of HIV and STDs, facilitating critical awareness of personal risk, enabling students to adopt protective sexual practices and encouraging non-discriminatory attitudes towards HIV-infected people. The programme consists of a teacher's manual and student booklets to facilitate a series of classroom-based activities, a video and a photo-comic. The classroom-based activities are a cross-curricular series of 48 lessons, each of 30 minutes' duration. The topics include facts about AIDS and STDs, risk-taking in adolescence, value clarification, relationships, safer sex and living with AIDS. Each lesson facilitates active student involvement through group work, class discussion, worksheets, role plays or projects.

The programme's development was informed by Freirian theories of learning,^{10,11} together with Bandura's theory of self-efficacy.¹² Freirian theories propose a 'problem-solving' approach in which the teacher and learner undertake to investigate students' problems together through a process of dialogue. This implies a flexibility that needs to be built into an education programme.

The basic premise underlying Bandura's theory of self-efficacy is that the expectation of personal mastery determines whether or not an individual will engage in a particular behaviour. Enhancing a person's perceptions of self-efficacy in respect of preventive behaviours increases the likelihood that they will perform these behaviours. Perceptions of self-efficacy are based mainly on personal experiences and performance accomplishments. The programme aimed to give students this experience through role-play.

Theoretical constructs from two psychosocial theories of health behaviour, viz. the Health Belief Model¹³ and the Theory of Reasoned Action,¹⁴ were incorporated into the programme. The programme was designed to provide students with the opportunity to explore, discuss and

Centre for Epidemiological Research in Southern Africa and Health Promotion Research Unit, Medical Research Council, Tygerberg, W. Cape, and Department of Community Health, University of Cape Town

C. Mathews, M.Sc.

K. Everett, B.A., POSTGRADUATE DIPLOMA IN HEALTH PROMOTION

C. Lombard, Ph.D.

S. Swanevelder, B.Sc. HONS

develop a critical self-awareness of the various constructs in these models that are hypothesised to be associated with behaviour change. Formative research,¹⁵ both quantitative and qualitative, was conducted with students and teachers to ensure that the programme addressed their needs and was acceptable and feasible.

The evaluation

The evaluation was conducted in 1994 in a high school in Cape Town's southern suburbs. The students were predominantly from white and coloured middle-class communities, with a minority of black students.

The evaluation aimed to assess whether 'Get Wise about AIDS' was appropriate to this cultural setting, feasible to implement and integrate into a high-school environment, and acceptable to the students and teachers. Furthermore it aimed to assess the programme's effectiveness in influencing the psychosocial variables hypothesised to influence AIDS-related health-enhancing behaviour.

Study design and methods

The study school was selected because of its accessibility and political stability, and because the two guidance teachers at the school were committed to the project. All standard 8 students participated in the programme. An anonymous baseline questionnaire was administered 1 week before the programme began, and a follow-up questionnaire 2 weeks after it ended. The individual students were matched by codes in the baseline and follow-up surveys. The guidance teachers taught most of the lessons. Lessons were also taught by the mathematics, English, biology and geography teachers.

In addition, qualitative evaluation methods involved direct observation of the programme implementation, monitoring of programme activities, two interviews with each of the guidance teachers and two focus group discussions with students to discover how they experienced the programme.

Data analysis

McNemar tests for symmetry were performed to assess the significance of the changes between the baseline questionnaire and the follow-up survey. Chi-square tests were used to assess associations between baseline variables. The qualitative data were analysed using the content analysis methods.¹⁶

Results

The implementation of the programme lasted 9 months. Of the 220 students at baseline, 16 were absent at follow-up and were not included in the study. Students' ages (at baseline measurement) ranged from 14 to 17 years, with a median age of 15 years. Female students comprised 49% of the sample, 84% of students were Christian and 7% Moslem. Before the intervention, 47% of the students stated that they did not have a boyfriend or girlfriend, and most of the students (79.2%) reported never having had sexual intercourse.

Knowledge

Before the programme the students had a high level of accurate information on several key knowledge indicators. For example, before the programme most students knew that AIDS could be transmitted vertically (97.1%), that sex without a condom was risky (91.2%), and that AIDS could not be transmitted through casual contact (98.5%). With regard to the prevention of HIV, they knew that condoms were protective (80.4%), and that washing after sex and taking the birth control pill were not (96.1% and 90.7% respectively). Almost all (98.5%) knew that a person infected with HIV could look and feel healthy for several years. After the programme there was no significant change in these indicators.

Significant changes in several other knowledge items were noted after the programme (Table I).

Table I. Changes in students' knowledge with respect to HIV/STDs

value	Before			After			N	P-
	% correct			% correct				
How does a person protect himself/herself from getting HIV from a sexual partner? ⇒ not have sex	73			81.4			204	0.01
⇒ have only 1 sex partner	72.5			83.3			204	< 0.01
⇒ kiss & cuddle only	43.6			56.9			204	< 0.01
	%	%	%	%	%	%		
	yes	no	d/k	yes	no	d/k		
What are the symptoms of STDs? smelly discharge from penis/vagina	45	13.9	41.1	80.2	6.4	13.4	200	< 0.01
pain/burning when urinating	68.5	6.4	25.1	86.6	2.5	10.9	201	< 0.01
sores on penis/vagina	79.3	3.9	16.7	93.1	0.5	6.4	203	< 0.01
pain during sexual intercourse	31.5	22.3	46.2	55.0	14.5	30.5	194	< 0.01
	% correct			% correct				
Why do people with a STD have a higher risk of getting infected with HIV?	6.4			20.8			100*	< 0.01

* Only 100 people attempted to answer this question in both surveys.

Attitudes

Students' attitudes, both towards people infected with HIV and towards behaviour that is protective against infection, were very positive before the intervention. For example, almost all students (95.1%) thought that it was not dangerous to share a classroom with a person with AIDS, and most did not think that people with AIDS deserve to have the disease (68.8%). Almost all students (91.1%) said that it was not important to them to have many sexual partners, 81.4% said they would like to use a condom every time they had sex, and 74.3% thought it was best to delay sexual intercourse until they were older. There were no significant changes in these attitudes after the programme.

Beliefs

Prior to the programme, 48.8% of students thought that most people their age were sexually active. Following the programme, significantly more students (60.8%) believed this to be the case ($P < 0.01$). After the programme, significantly fewer students (9.4% v. 27.1%, $P < 0.01$) believed that most people their age would wait until they were married to have sex. Despite these beliefs, the majority of students (68% before, rising to 77.8% after the intervention; P -value = 0.02) believed that their friends would accept them if they chose to wait until they were married to have sexual intercourse. Most students stated that it was not embarrassing to be a virgin (74.9% before the intervention, 76.7% after; $P = 0.43$).

Self-efficacy

Before the programme, students had high expectations of mastery (self-efficacy) in respect of preventive behaviour and coping with people with AIDS. Most (86.2%) believed that they would be able to show their partner love without having sex, 89.4% believed that they would be able to insist on using a condom during sex even if their partner did not want to use one, and 73.2% believed that they would be able to

be friends with a person with AIDS. There were no significant increases in students' expectations of mastery in respect of these behaviours after the programme. Most students believed they knew how to use a condom (77% at baseline, 88.6% at follow-up; $P < 0.01$).

Before the intervention, 56.1% of the sexually active students believed that it was difficult to refuse when their partner wanted to have sex. Significantly fewer (17.6%; $P < 0.01$) students with no sexual experience believed this to be difficult. After the programme, fewer (44%; not significant) sexually active students thought it difficult. There was little change (16.2%) in the response of those who were not sexually active.

Self-reported behaviour change

Table II shows changes in self-reported behaviour. The validity of students' responses in the baseline questionnaire about sexual behaviour was assessed by an indirect method.¹⁷ This found the students' direct answers on sexual activity to be valid. Significantly more students became sexually active during the 9 months of the programme's implementation. Of those students who had a girl/boyfriend at both baseline and follow-up surveys, significantly more had spoken with them about AIDS after the programme. Of all the students, 43.3% reported having a condom either with them at school, or at home. There was no significant difference between the sexes; neither was there a significant increase after the programme. In those who reported, at baseline, being sexually active, there was no significant change in reported condom use after the programme. Of the sexually active students, after the programme significantly fewer reported having a condom.

Students' evaluation of the programme

Table III shows students' responses to questions about their evaluation of the programme. The qualitative data gave some further insights into the students' experience of the

Table II. Students' self-reported behaviour change

Question	Before			After			N	P-value
	None	One	> One	None	One	> One		
How many people have you had sexual intercourse with in your life?	79.2%	12.2%	8.6%	67.2%	17.4%	15.4%	195	< 0.01
	Never	Once	More than once	Never	Once	More than once		
How many times in the last month have you spoken about AIDS with your boyfriend/girlfriend?	81.6%	7.9%	10.5%	57.9%	17.1%	25%	76*	0.01
	Yes		No	Yes		No		
Have you ever used a condom during sexual intercourse?	89.2%		10.8%	83.8%		16.2%	37†	0.41
Did you use a condom the last time you had sexual intercourse?	62.2%		27.8%	62.2%		27.8%	37†	1.00
Do you have a condom either with you at school, or at home? (all students)	44.1%		55.9%	48%		52%	204	0.33
Do you have a condom either with you at school, or at home? (sexually active students)	80.5%		19.5%	65.9%		34.1%	41	0.03

* Those who did not have a boyfriend/girlfriend at both baseline and follow-up were excluded from the analysis.

† Those who were not sexually active at baseline were excluded from the analysis.

Table III. Students' evaluations of 'Get Wise about AIDS'

Questions	Yes	No	Don't know	N
Did the AIDS education programme suit your needs?	66.7%	10.4%	22.9%	201
Was anything you learnt in the programme useful to you?	72.7%	12.1%	15.2%	198
Did the programme give you the opportunity to:				
discuss ideas and problems with your classmates	83%	7%	10%	200
think about your personal experiences of relationships	79%	12.5%	8.5%	200
make decisions about your lifestyle	81%	11.5%	7.5%	200
practise behaviour that will help you protect yourself from AIDS	84.4%	7.0%	6.5%	199
As a result of the AIDS programme, have you made any plans to protect yourself from becoming infected with the AIDS virus?	80.5%	11.3%	8.2%	195
Do you think sex and AIDS education programmes in schools make teenagers more careful about having sex?	75.4%	9.4%	15.3%	203

programme. Students mentioned the following positive aspects: that the programme increased their perception of personal risk; gave them opportunities to explore their identity and values; helped them identify the risks involved in sexual relationships; got people talking more openly about sex and relationships; and dealt with situations that they could identify with.

There were, however, a number of issues that students would have liked the programme to have dealt with in more depth. These included homosexuality (which the students thought was particularly important, as they were at the age of discovering their sexuality) and Catholicism (its prohibitions on condom use and the dilemmas this posed for devout Catholics). They would also have liked the programme to have focused less on HIV prevention and more on the experiences of living with HIV, including the involvement of people who were HIV-positive.

Teachers' evaluation of the programme

The teachers found that the teachers' manual was clear, informative, easy to use and flexible enough for them to adapt to their style of teaching. While they found the lessons fitted well into class periods, they felt the cross-curricular approach needed advance planning with teachers from other subjects.

They reported that, on the whole, students were responsive to the programme, but that towards the end of the 9 months of implementation, their interest in the topic waned.

The teachers felt that the programme had given the more mature students an insight into their relationships. They noted that during the programme more students came to discuss personal issues with them. They felt the non-judgemental and non-threatening approach of the programme made students feel they were able to do this.

Discussion

The results of this study should be interpreted in the light of the study design which, while suitable for evaluating the acceptability and feasibility of the programme, cannot provide conclusive findings on the effects of the programme.

Middle-class, suburban school students, such as participated in the study, tend to have greater access to educational resources, and this probably explains the high

levels of knowledge about HIV/AIDS found in the study school and the positive attitudes towards protective behaviour and people with AIDS. An evaluation of 'Get Wise about AIDS' in a black, rural area of the former KwaNdebele (now part of Mpumalanga province) found students' baseline knowledge to be not as high. Only 48% of students in the rural area knew that AIDS was a preventable disease (G. Ogunbanjo — personal communication).

Despite the high levels of knowledge of AIDS found in our study, knowledge of STDs and their relationship with HIV was poor. A focus on STDs that helps students identify the symptoms of STDs and their consequences, and encourages early attendance at health services, needs to be included in all school HIV/AIDS programmes.

In this study, non-sexually active students' expectations of mastery with regard to refusing sex if their partners wanted sex were higher than those of sexually active students. High expectations of mastery may be a function of lack of actual experience. To have a realistic appraisal of the difficulty of engaging in protective sexual behaviours, students may need to have had experience in the situations under question. Students who are not sexually active may be less receptive to the parts of 'Get Wise about AIDS' that involve, through role-play of sexual risk situations, the practising and mastering of protective behaviours. Nonetheless, such programmes may still be important for sexually inexperienced adolescents, as they still need to be prepared for the difficulties of negotiating safer sex.

The significant increase in the number of students who were sexually active does not necessarily reflect programme effects. A study of the sexual behaviour of high-school students across the Cape Peninsula found that the median age at first intercourse was 14.9 years, with an interquartile range of 12.8 - 15.9 years. There was little variation between language groups.⁴ This suggests that the students participating in this study were at the age at which adolescents in this region become sexually active. However, because our study did not include a control group, we were unable to distinguish programme effects from temporal changes. International research and reviews¹⁸ have provided evidence that school sex education programmes do not hasten the onset of intercourse, and some delay its onset and increase safer sex practices at first intercourse.

At baseline, reported condom use was relatively high, yet, among the cohort of sexually active students, the study did not demonstrate an increase in use. It is possible that more

condoms were not available to students (the intervention did not include making condoms available), and that programmes such as this one will not increase condom use unless they make condoms more accessible.

It is interesting to compare our findings in respect of condom use, with those of the evaluation of 'Get Wise about AIDS' conducted in rural KwaNdebele. That study found that at baseline, 84% of students aged 15 - 19 years had had sexual intercourse, and that only 25% of these had ever used a condom. In this rural setting, the programme effected significant increases in reported condom use (G. Ogunbanjo, 1995 — personal communication). This suggests that students in poor, rural areas have a greater need for programmes encouraging safer sex practices, and that there is a greater potential to impact on behaviour.

'Get Wise about AIDS' was successfully implemented in the study school, despite it being a very different setting from that in which the programme was developed. Basing the programme on Freirian educational principles may have contributed to its transferability.

'Get Wise about AIDS' is one of several school AIDS and sexuality education programmes that have been developed and evaluated in South Africa. There is now a need to synthesise research on the acceptability and effectiveness of these programmes and, if possible, identify the distinguishing features of acceptable and effective programmes. Through this process, the important questions for future research can be identified.

The authors would like to express their gratitude to the school students who participated in this evaluation and the teachers who implemented the programme and supported the research. We would like to thank Magriet da Silva, Sulona Reddy and Louen Kleinsmit for assisting with the fieldwork.

REFERENCES

1. Fifth national HIV survey in women attending antenatal clinics of the public health services in South Africa, October/November 1994. Department of Health and Population Development, RSA. *Epidemiological Comments* 1995; **22** (5): 90-100.
2. Esterhuysen T, Doyle P. The South African HIV epidemic: What lies ahead. *AIDS Analysis Africa* (Southern Africa Edition) 1993; **4** (2): 7-9.
3. Flisher AJ, Roberts MM, Blignaut RJ. Sexual behaviour and missed opportunities for contraception counselling. *S Afr Med J* 1992; **82**: 104-106.
4. Flisher AJ, Ziervogel CF, Chalton DO, Leger PH, Robertson BA. Risk-taking behaviours of Cape Peninsula high-school students: Part VIII. Sexual behaviour. *S Afr Med J* 1993; **83**: 495-497.
5. Preston-Whyte E, Zondi M. Adolescent sexuality and its implications for teenage pregnancy and AIDS. *CME* 1991; **9**: 1389-1394.
6. Mathews C, Kuhn L, Metcalf C, et al. Knowledge, attitudes and beliefs about AIDS in township school students in Cape Town. *S Afr Med J* 1990; **78**: 511-516.
7. Abdool Karim SS, Abdool Karim Q, Preston-Whyte E, Sankar N. Reasons for lack of condom use among high-school students. *S Afr Med J* 1992; **82**: 107-110.
8. National AIDS Convention of South Africa (NACOSA). A National AIDS Plan for South Africa, 1994 - 5. NACOSA Secretariat, Sunnyside, Pretoria, July 1994.
9. Everett K. *Get Wise about AIDS. Lessons for a Safer Lifestyle*. Manzini, Swaziland: Macmillan Botswana Publishers, 1995.
10. Freire P, Shor I. *A Pedagogy for Liberation: Dialogues on Transforming Education*. London: Macmillan Education Ltd, 1987.
11. Freire P. *Pedagogy of the Oppressed*. Harmondsworth: Penguin, 1972.
12. Bandura A. Perceived self-efficacy in the exercise of control over AIDS infection. In: Mays VM, Albee GW, Schneider SF, eds. *Primary Prevention of AIDS: Psychological Approaches*. Newbury Park: Sage Publications, 1989.
13. Janz N, Becker M. The Health Belief Model: A decade later. *Health Education Quarterly* 1984; **11**: 1-47.
14. Fishbein M, Middlestadt SE. Using the theory of reasoned action as a framework for understanding and changing AIDS-related behaviours. In: Mays VM, Albee GW, Schneider SF, eds. *Primary Prevention of AIDS: Psychological Approaches*. Newbury Park: Sage Publications, 1989.
15. Mathews C, Everett K, Binedell J, Steinberg M. Learning to listen: Formative research in the development of AIDS education for secondary school students. *Soc Sci Med* 1995; **41** (12): 1715-1724.
16. Patton MQ. *How to Use Qualitative Methods in Evaluation*. 2nd ed. Newbury Park: Sage Publications, 1987; 149-159.
17. Miller J. A new survey technique for studying deviant behaviour. Ph.D. dissertation, Department of Sociology, George Washington University, 1984.
18. Kirby D. Sex and HIV/AIDS education in schools have a modest but important impact on sexual behaviour. *BMJ* 1995; **311**: 403.

Accepted 18 Sep 1996.

Books

Strengthening Health Management in Districts and Provinces

Handbook for Facilitators. By A. Cassels and K. Janovsky. Pp. vi + 74. Sw.fr.20/US\$18. Geneva: WHO 1995. ISBN 92-4-154483X.

This publication should be sub-titled 'a facilitator's handbook', as it is essentially a set of guidelines for implementing a training programme on health management.

The programme is designed primarily to improve the skills and capacity of district health management teams (DHMTs), and uses a 'problem-solving' approach. This allows participants to go through the cycle of problem identification, planning, implementation and evaluation.

The programme is structured around three classroom-based workshops consisting of four days each, followed by three 'implementation periods' during which time the participants put their strategies into action.

The process works with members of a real DHMT, and has the advantage of encouraging team building around real health problems. It does, however, have the disadvantage of depleting districts of the bulk of their managerial staff during the workshop periods. The programme should ideally be run by the Department of Health and requires a good facilitator who has had real experience of district health management. It is not a programme that can stand on its own.

The layout of the book is poor, and it is therefore not very readable. The font is small, and there are no illustrations. The material, designed for participants as handouts, is also poor as it mixes information on health management, which could have been used as reference notes, with instructions about workshop activities.

The WHO have produced a superb book on health management which is called *On Being in Charge*. It seems a pity that this programme does not build on the foundation of that book. The audience for this book in South Africa are the various universities and Health Departments that are offering, or considering to offer, health management courses. Its value may be more in terms of the training structure and process rather than its actual content.

M. Jacobs