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Theatre in education on HIV and AIDS: a controlled study of schoolchildren's knowledge and attitudes

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ABSTRACT

This paper presents part of the findings of an evaluation study which measured the impact of *Someone Like You*, a theatre in HIV and AIDS education programme, devised for schoolchildren. Data on knowledge and attitudes related to HIV and AIDS were obtained before and after the intervention using a confidential, self-completed questionnaire. The children participating in the study were aged 13–14 years. All were attending 12 Nottinghamshire secondary schools which reported the inclusion of HIV and AIDS education in their curricula; 252 children in the experimental group and 428 children in the control group completed both pre- and post-tests. At pre-test, knowledge levels were high for the main transmission routes and risk factors for HIV infection, with some confusion existing over the safety of kissing, receiving blood transfusions in the UK and donating blood. After the intervention the experimental group showed significantly bigger gains in knowledge than the control group, in these areas. Attitudes were generally positive at the start of the study. However, the experimental group shows significantly greater shifts towards the 'positive' end of the attitude continuum in areas related to the right of HIV-positive children to go to school, confidentiality regarding these children's HIV status and use of condoms signifying caring relationships. It is concluded that 'Someone Like You' improved knowledge levels and influenced the attitudes of the children participating in the initiative.

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INTRODUCTION

Theatre in education programmes generally utilise a combination of traditional theatre, educational drama, structured role play and decision-making exercises to involve children in the exploration of issues and problems that are relevant to their lives[1]. As such they are considered by educationists to be a powerful medium for engaging children in learning which addresses potentially sensitive matters, in the field of personal, social and health education[2].

Theatre in health education has been used since the mid-1980s to educate schoolchildren about HIV and AIDS. The increase in the number of touring companies over the last ten years has been attributed to the funding, made available from special 'ring fenced' monies, by health authorities, for theatre in health education programmes on the subject of HIV and AIDS[3]. Despite the proliferation of these programmes there are few published papers and reports on the subject of their evaluation. Existing studies differ both in the outcomes that they set out to measure, the methods used in the evaluation and, to some extent, their findings.

McEwan and colleagues[4] surveyed pupils using pre- and post-tests and used focused group discussions to measure the impact of the play and workshop 'Body Talk' on the knowledge and attitudes of pupils. The results revealed that the initiative was interesting and acceptable to the children, attitudes had changed in line with programme objectives but there was little difference in knowledge levels between pre- and post-testing.

Blakey and Pullen[5] used semi-structured interviews with teachers to examine issues related to the implementation and acceptability of a drama-based sex education project, 'You Don't have to Say you Love me'. They also undertook focus group interviews to ascertain the reaction of young people to the project. From the findings of their study they concluded that the drama-based approach is an effective method in health education and that programmes benefit from prior consultation and discussion with other agencies.

Frankham and Stronach[6] used focused group discussions to examine the effectiveness of the play 'Love Bites' in influencing young people's short- and long-term attitudes, their behavioural intentions and the degree to which the play 'communicated' with teenagers. They concluded that the play was enjoyed by the young people, engaged them, and had some influence on attitudes but had little impact on their intended behaviour.

To evaluate the play and workshops, *Someone Like You* for the present study, a combination of qualitative and quantitative methods was used:

- a controlled pre- and post-test by self-completion questionnaire to measure the impact of the play and workshops on the children's HIV- and AIDS-related knowledge and attitudes;
- observation of the full programme to gauge the children's level of participation and interest, and to monitor the issues raised in the play and workshops;
- focus group interviews to examine, in greater depth and detail, the children's knowledge and attitudes in relation to HIV and AIDS and how

relevant and interesting they found the play with regard to its content and process;

- a survey of teachers, using a self-completion questionnaire, of issues related to the implementation of the project; the context within which it was used in the school's HIV and AIDS education programme; and the appropriateness and acceptability of the content and methods for the specified age group.

This paper will concentrate on the part of the evaluation involving the pre- and post-test.

Someone Like You: *the play and workshop*

Someone Like You was devised, and is performed, for 14-year-old schoolchildren by the Women in Theatre Group. It consists of a 30-minute play, followed by a workshop, one and a half hours long, for a maximum of 30 children per session. The storyline traces the developing relationship between two young people, Claire and Craig, who, after leaving school, have several chance encounters before finally arranging their first date. As they are getting ready for this date, the audience is given the opportunity to share Craig's and Claire's thoughts which reveal their hopes and worries about their forthcoming meeting and their future relationship.

At the end of the play a facilitator invites the audience to anticipate what might happen next and what the consequences of the two character's actions might be. Craig and Claire are 'hot seated', that is, remain in role while the children question them about their motives, feelings, intentions, past behaviour and give them advice. It is at this point that Claire's HIV-positive status is revealed. This part of the programme explores relationships and communication between partners, friends and family members with regard to HIV and AIDS.

For the workshop, the children are divided into small groups, each group led by a person from the theatre company. Here, the priority is to share group knowledge about HIV transmission routes and HIV risk reduction practices and to correct misinformation where appropriate. Further discussion also takes place about the issues raised by the performance.

METHODS

The evaluation was conducted by independent evaluators for the sponsors, Nottingham and North Nottinghamshire District Health Authorities and the commissioners of the programme, health promotion officers from the Districts' two health promotion units. There was close collaboration between the evaluators, the health promotion officers and the theatre company to ensure agreement on the outcomes selected for evaluation and the methods used.

The purpose of the evaluation was to assess the extent to which the initiative (play and workshop) had, in schools with a planned programme of HIV and AIDS education already in place, achieved the following aims:

- had an impact on the HIV- and AIDS-related knowledge, attitudes and beliefs of the children;
- generated interest in terms of the approaches used;
- been enjoyed by the children.

The project was fully funded by the Health Authorities to tour a maximum of 16 schools in Nottinghamshire. There were no costs incurred by the schools. Publicity about the project, along with application forms, was circulated to all state-maintained secondary schools in the county. Any school was eligible to take part provided it had:

- a planned programme of HIV and AIDS education already in place within which the initiative could be located;
- a large space in which to mount the play and workshop;
- flexibility in the timetabling of the programme. (There was a period of only four weeks separating the initial contact with schools and the commencement of the tour.)

All 16 participating schools accepted the invitation to take part in the full evaluation of the programme. In addition to the 30 14-year-old children who were to watch the performance and participate in the workshop (experimental group), the schools were asked to identify approximately 60 children by randomly selecting two or three mixed ability classes across the rest of the year group (the control group). This group did not view the performance nor take part in the workshop.

The schools were requested to administer the baseline questionnaire (pre-test) one week prior to the theatre programme taking place in the school and the follow-up questionnaire (post-test), one day after the programme, to both experimental and control groups. With the exception of two additional questions in the experimental group post-test, the pre- and post-test questionnaires were identical. The purpose of the additional questions was to ascertain the extent to which the children found the play an interesting medium for learning about HIV and AIDS and also which part of the exercise they considered to be most important.

The questionnaire included several standard questions to enable some comparison to be made with other surveys. The first part consisted of a list of possible ways in which HIV can or cannot be transmitted which the respondents were asked to classify as 'can be caught', 'cannot be caught' and 'not sure'. The second part included statements exploring risk perception, risk reduction, reaction to peers with HIV and AIDS and knowledge and attitudes

regarding condom use. A four-point scale consisting of 'strongly agree', 'agree', 'disagree' and 'strongly disagree' was used for the responses.

Piloting of the questionnaire took place in two contrasting schools which, in terms of the ability of the pupils, were broadly similar to the majority of schools participating in the survey. Approximately 15 minutes were needed for the completion of the questionnaire.

The completion of the questionnaires was supervised by teachers. It was requested that this be done under examination conditions to prevent conferring. Confidential code numbers were used to enable the matching of the pre- and post-test for each pupil. The dates of birth and sex of the pupils were recorded on the questionnaires as a back up. No names were recorded on the questionnaires which were sealed inside envelopes immediately after completion.

A teacher and a non-participating observer, usually a member of the research team, were present at each performance and workshop. Teachers and observers reported back on the issues covered in the programme and described the level of participation in each group.

Once the programme had taken place in each school the teacher responsible for liaising with the project completed and returned an evaluation questionnaire.

The sign test[7] was used to analyse the changes in knowledge and attitude, with changes to the correct answer, or towards the desirable end of the attitude scale, being taken as positive, and changes away from the correct answer, or towards the undesirable end of the attitude scale, being taken as negative.

RESULTS

Four of the 16 participating schools were excluded from the evaluation: one which was originally on the reserve list and had been involved in piloting the children's questionnaire; and three schools which did not administer the control group pre- and post-test questionnaires in accordance with instructions.

The remaining 12 schools in the study differed in size and location (inner city/suburban) across Nottinghamshire.

Provision of HIV and AIDS education in schools

When the schools were invited to participate in the project, all reported the inclusion of HIV and AIDS education in their curricula. According to the 12 completed evaluation questionnaires for teachers, most of the schools introduced HIV and AIDS into the curriculum in Year 9 (for pupils of 13 years), revisited the topic in Year 10 (14 years), with only three schools continuing into Year 11 (15 years).

Coverage took place in a variety of subject areas: personal and social education, and science being the most common, with religious education and

English contributing in some schools and child development and Diploma of Vocational Education respectively, in two others. Ten of the teacher respondents reported the inclusion of objectives in each of the three domains: knowledge, attitudes and skills. The other two respondents lacked a sufficient overview to provide comment.

The teachers reported that no specific preparatory work was done with either the experimental or the control group beyond the work normally covered in the curriculum or that was necessary to introduce *Someone Like You.*

Reponse rate

Ninety-one per cent of the experimental group (252 of 276, 132 females and 120 males) completed questionnaires at both pre- and post-test. Of the control group, 81 per cent completed both tests (428 of 531, 225 females, 203 males). There were no gender differences between the two groups.

Pupils who completed both tests were aged either 14 years (89 per cent) or 13 years (11 per cent). All the 13-year-olds in the study were attending one school. Non-response for both groups was due to absenteeism and there were no spoiled papers.

Effects on knowledge

No statistically significant differences in knowledge were observed between the groups at pre-test for any of the items investigated.

Knowledge levels were generally high for both groups, with 97 per cent or more demonstrating awareness of the main transmission routes for HIV and that it cannot be transmitted by casual contact (*Table 1*). Areas of confusion

TABLE 1 Questions on HIV transmission routes with high initial levels of knowledge

Factor	Group	Pre-test % correct
Touching	E	98
	C	98
Sitting next to the person in class	E	98
	C	97
Sexual intercourse between a man and a woman	E	100
	C	98
Sharing needles to inject drugs	E	99
	C	97

E: experimental group (of 252 pupils). C: control group (of 428 pupils).

TABLE 2 Questions on HIV transmission routes with low initial levels of knowledge

Risk	Group	No.	Pre-test % correct	In post-test, % changing to: correct	no change	wrong	Post-test % correct	Significance of change P
Kissing	E	250	73	21	76	2	92	<0.0005
	C	424	77	8	83	8	77	
Receiving blood in UK	E	249	23	55	41	4	74	<0.0005
	C	427	24	15	80	4	35	
Giving blood	E	250	43	35	61	4	74	<0.0005
	C	426	48	13	79	9	52	

E: experimental group (of 252 pupils). C: control group (of 428 pupils).

at pre-test (*Table 2*) related to: the safety of kissing, approximately three in four answering correctly (73 per cent of the experimental group and 77 per cent of the control group); receiving blood transfusions in the UK, with only one in four correct (23 per cent of the experimental group and 24 per cent of the control group); and giving blood, with less than half correct (43 per cent of the experimental group and 48 per cent of the control group). After the intervention a higher percentage of the experimental group changed their pre-test answer compared with the control group. Furthermore, this change was more likely to be to the correct answer. These changes were statistically significant for all three knowledge items (*Table 2*).

A high level of awareness was demonstrated at pre-test with regard to the use of condoms in risk reduction practices (*Table 3*) and four in five pupils claimed to know how to use condoms properly (*Table 4*). In both groups there was little, if any, difference between pre- and post-test answers regarding these knowledge-related areas.

Effects on attitudes

There were no significant differences observed in attitudes between the groups, at pre-test, in five out of seven of the attitudinal statements. *Tables 3* and *4* show the percentage of pupils in each group giving the expected response to the attitudinal statements at pre- and post-test (combining categories to reduce the scale to 'agree' and 'disagree' for simplicity of presentation); the percentage of respondents who gave the same answer in both tests; the percentage changing their answer at post-test, based on the four-point scale; and the direction and significance of the change.

On the whole, positive attitudes were demonstrated at pre-test. Shifts in attitude were observed at post-test for both the experimental and control groups. For all statements these shifts occurred in both directions on the attitude continuum. However, with the exception of one of the statements, not only were those in the experimental group more likely to change their answer at post-test than those in the control group, but this change was more likely to be in the expected or desired direction.

TABLE 3 Pre- and post-test attitudes where pupils would be expected to agree with given statements

Statement	Group	Pre-test No.	Pre-test % agreeing	% moving towards: strongly agree	% moving towards: no change	% moving towards: strongly disagree	Post-test % agreeing	Significance of change P
Everyone is at risk from AIDS	E	249	86	20	50	30	84	<0.0005
	C	411	87	20	64	16	92	
People can reduce the risk of catching HIV if they use condoms when they have sex	E	248	98	15	73	11	96	0.09
	C	413	96	10	79	11	97	
Using a condom shows that people care for each other	E	250	84*	28	61	11	92	0.001
	C	412	92*	17	68	16	89	
It is too risky to have sex without a condom	E	249	90	21	66	14	92	0.48
	C	416	90	18	64	17	92	
A woman who carries condoms is sensible	E	248	98	15	73	12	98	0.21
	C	415	98	10	78	12	96	

Results shown are for 252 pupils in experimental group (E) and 428 in control group (C) who completed both tests; all percentages based on those who gave a valid response to that statement in both tests.

* $p = 0.002$.

TABLE 4 Pre- and post-test results where pupils would be expected to disagree with given statements

Statement	Group	No.	Pre-test % disagreeing	% moving towards: strongly agree	no change	strongly disagree	Post-test % disagreeing	Significance of change P
Children with HIV should not be allowed to go to school	E	250	86	10	61	29	92	0.0025
	C	418	84	17	64	19	85	
I don't think I'll ever catch HIV	E	241	44	22	52	26	46	0.80
	C	403	44	22	54	24	43	
If a child has HIV everyone in the school has a right to know	E	243	74	11	56	33	88	0.019
	C	410	67	17	59	24	70	
It is the man's responsibility to carry condoms	E	245	69*	15	55	30	77	0.14
	C	407	59*	19	57	24	62	
I'm not sure I would know how to use a condom properly	E	244	86	16	64	20	88	0.55
	C	402	84	15	68	17	85	

Results shown are for 252 pupils in experimental group (E) and 428 in control group (C) who completed both tests, all percentages based on those who gave a valid response to that statement in both tests.
* $p = 0.009$.

Significant differences in the changes at post-test between the experimental and control groups were observed for four of the statements. Eighty-six per cent of the experimental group and 87 per cent of the control group agreed at pre-test with the statement that 'everyone is at risk from AIDS' (*Table 3*). Of the control group changing their position on the attitude scale at post-test (36 per cent) similar proportions changed in each direction (20 per cent towards strongly agree and 16 per cent towards strongly disagree). For the same statement, a greater percentage of the experimental group (50 per cent) shifted their answer on the scale at post-test and of those, the majority (30 per cent) moved towards the strongly diagree end. Final percentages of respondents agreeing with the statement at post-test were 84 per cent of the experimental group and 92 per cent of the control group.

At pre-test 84 per cent of the experimental group and 92 per cent of the control group agreed with the statement that 'using a condom shows that people care for each other' (*Table 3*). Post-test results indicate an overall improvement in attitudes of the experimental group (92 per cent agreeing) but a slight deterioration in that of the control group (89 per cent). For this statement the pattern of shifts in answers at post-test indicates that a higher percentage of the experimental group changed their answer compared with the control group and that the majority of those changing moved towards the desired direction of 'strongly agree'. The shifts in the answers of the control group were weighted equally between the two directions of the continuum.

A 'disagree' response was expected to the statements 'children with HIV should not be allowed to go to school' and 'if a child has HIV everyone in school has a right to know' (*Table 4*). For each of these statements there was little difference between the proportions of the experimental or control group changing their answer at post-test. However, in the case of the experimental group, this change was more likely to be in the direction of the desired 'strongly disagree' end of the continuum. This applied to both of the above statements.

Although the boys started with slightly better knowledge levels and the girls with more positive attitudes, both sexes showed gains in knowledge and favourable changes in attitudes following the intervention. Where the knowledge levels for the girls were relatively poor the changes at post-test were significant. A similar trend was seen for the attitude of the boys.

Acceptability of the programme

The vast majority of the children who participated in the theatre in HIV and AIDS education initiative found the play to be an interesting way to learn about HIV. When asked to identify the most important aspect of the play and workshops, their answers indicated that they found the complete programme to be informative, interesting and enjoyable. They appeared to appreciate the interactive aspects of the programme, being given opportunity to express their feelings, working in small groups and felt that their opinions were valued.

The following comments are typical of the responses of the children to the question 'What was the most important moment for you in the play and workshops?'

The most important moment for me in the play was when we discovered the girl was HIV positive, it changed the whole situation. The discussion in groups was the most important thing in the workshop, it was interesting to hear other people's points of view!

It was good and I learned a lot. We asked quite a lot of questions and we put our views forward.

I thought the most important thing was listening to how the couple felt about each other and how the girl felt about having HIV. Another important thing was if she was going to tell the lad she was meeting or not.

The different ways of catching HIV. I liked it because everything was open and everyone had the chance to express their feelings.

The hot-seating with the actors. Expecially 'Claire' – although she was acting, it showed well how it feels to have AIDS. Talking through ways you can and cannot get HIV was also very helpful.

Everything! The play was made for the young generation to understand AIDS and HIV and because it was so modern and real to life it put the message over really well.

When we were allowed to give our views on what to do in their situation.

The most important moment was finding out all different ways to catch HIV or AIDS from other people and why it is so important to use a condom while having sex.

It was important to be able to talk to someone and to ask questions. Also it was better in small groups as you are not so embarrassed.

DISCUSSION

The setting in which the project was conducted placed limitations on the design of this evaluation study. It was not possible to carry out a completely randomised trial of the initiative. The evaluation had to be conducted within the confines of the existing timetables of the schools. Thus in each school a complete class formed the experimental group, and the control groups were formed from two or more classes in the same school. All schools operated with mixed ability classes, and when the groups were examined, in total and within schools, in relation to gender, and pre-test knowledge and attitudes, they were found to be comparable. The analysis concentrated on the changes of the individual pupils, rather than the group changes, in order to control for pre-test values, and the changes in the control group provided a measure of the changes that might have occurred in the experimental group, had they not attended the workshop. However, this does not rule out other differences between the classes which could not be measured and the results must be interpreted in the context of a non-randomised trial.

The findings of this study suggest that the theatre in health education

initiative *Someone Like You* had some impact, in the short term, on knowledge and attitudes related to HIV and AIDS.

Baseline knowledge levels for the main transmission routes and risk factors for HIV infection were high overall, but with some confusion evident regarding the safety of kissing and the receiving and donating of blood, findings which concur with the results of other recently conducted surveys[8–10].

In this study a striking improvement in knowledge was observed, following the intervention, in the above problem areas. Other evaluation studies report mixed results concerning the impact of theatre in health education on knowledge. McEwan and colleagues' study[4] reported no significant changes in knowledge, and of two studies conducted in the USA, one reported an increase[11] and the other a decrease[12] in knowledge levels among respondents. A possible explanation for these differences could be the inherent dissimilarities between the programmes, particularly with regard to the workshop element. Priority was given in the workshop of *Someone Like You* to the clarification of misconceptions and misunderstandings in relation to HIV transmission, before other issues were explored. This may account for the improvements in knowledge observed. By limiting participation in the programme to 30 children it was possible to ensure that all the participants would have a chance of benefiting from the workshops.

There is greater consistency in findings among evaluation studies[4,6,11,13,14] with regard to the influence exerted on beliefs and attitudes by theatre in health education programmes. An interesting finding in the study reported here was that, as a result of participating in the intervention, there was some movement away from the belief that the risk of AIDS is universal.

Conversely, there was a shift observed in the group that did not participate in the programme, towards agreeing with the statement. Attitudinal statements such as those used in our questionnaire lack context. It is possible that as a result of participating in the programme the experimental group interpreted or contextualised the statement differently which led to this shift in attitude. It is also conceivable that the intervention resulted in a heightened awareness of risk behaviours and risk reduction practices which may have contributed to this change. Regarding the control group, the completion of the same questionnaire twice, without the intervention, may have led to a heightened sense of the importance of AIDS as an issue and reinforced the notion that all people are at risk.

The above changes in perception of the universal risk of AIDS were not paralleled with corresponding changes in perceptions of personal risk. Although some of the children involved in the programme demonstrated a polarisation in their attitudes with regard to this statement, there was little total change observed. Since this pattern was also evident in the control group these shifts in attitudes cannot be linked with the intervention. Relatively small proportions of children in this age group are reported to have experience of sexual intercouse.[15] Therefore it is not surprising that the children did not see HIV and AIDS as an important issue affecting them personally, either before or after the intervention.

However, it is important to note that studies[9,16] have shown that, despite high knowledge levels, young people continually place themselves at risk of

becoming infected. This suggests a failure of present education campaigns in preventing young people from distancing themselves from the threat of HIV infection. Further investigation is needed to ascertain whether *Someone Like You* can succeed in this complex area.

It is encouraging to find, in light of a recent national study[17] which revealed that some schoolchildren would treat an infected classmate negatively, that the programme was effective in influencing attitudes with regard to the rights of HIV-positive children to attend school and remain anonymous. Although the play and workshops did not deal with this issue directly the main focus was to challenge stereotypical images of people at risk and to foster sensitivity towards people with HIV and AIDS. It appears that the sympathy fostered was transferred to children's own social circumstances.

One of the criteria necessary for schools to qualify for a place on the initiative was that they should have some provision for HIV and AIDS education already in place. This was deemed important for two reasons. Firstly, recommendations state that health education interventions should not be 'one-offs' and that HIV and AIDS education be included in broad-based programmes[18]. Secondly, the aim of this evaluation study was to measure the extent to which the theatre in health education initiative enhanced the educational programmes already in place in the participating schools. Thus it was important that the control group was drawn from the same institution as the experimental group in order to ensure that both groups received, or were likely to receive, the same baseline education in HIV and AIDS provided by the school. The likelihood of a contamination effect, that is, the experimental group discussing the intervention with the control, which could affect the control group's results, was reduced by asking schools to administer the questionnaires to both groups at the same time and the post-test very soon after the intervention. Despite these precautions the possibility of contamination cannot be ruled out. However, any such effect must have been minimal given that there was little difference found between the control group's pre- and post-test results. It is also possible that the questionnaire itself was enough to stimulate an increase in knowledge, a finding noted elsewhere[19].

Finally, it would be inappropriate to base an assessment of the success of *Someone Like You* or indeed any theatre in health education programme solely on outcomes related to knowledge and attitudes. Whilst acknowledging that the evaluation of theatre in health education is still largely experimental and that methods have yet to be found that are suitable for measuring the complex outcomes of the medium, practitioners in the field have strongly criticised evaluation designs that are limited to measures of knowledge, attitude and behavioural change[20,21].

An important consideration is how acceptable children find such interventions since their receptiveness will help in the achievement of the wider objectives of a programme. The vast majority of the children in our survey found, as did others elsewhere[14], *Someone Like You* to be an interesting and enjoyable way to learn about HIV and AIDS. They found many aspects of both play and workshop memorable which suggests that it may have left them with a strong impression. This provides additional evidence to support the conclusion that the initiative was successful.

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