

Preventing AIDS and Other STDs through Condom Promotion: A Patient Education Intervention

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Abstract: We report on two studies that assessed the impact of a soap-opera style videotape on inner-city STD (sexually transmitted disease) patients' knowledge about and attitudes toward condom use, and willingness to redeem coupons for free condoms. Subjects in the first study who viewed the videotape (and participated in a brief oral recall session) had higher knowledge scores and more accepting attitudes than subjects who did not (knowledge test means of 11.1 versus 7.9, attitude index means of 13.0 versus 11.3). The intervention was most effective among those who were relatively poorly

educated and, to a lesser extent, among those who reported less frequent use of condoms and fewer sex partners. In the second study, intervention group subjects were more likely than control group subjects to redeem coupons. Both groups exhibited a high level of interest in the free condoms. We argue that education *and* accessibility to free condoms can increase condom use and that health care providers have a vital role in promoting this form of STD prevention. (*Am J Public Health* 1989; 79:453-458.)

Introduction

Condom use appears to be one of the most important weapons in the public health fight against AIDS (acquired immunodeficiency syndrome).¹⁻³ Campaigns to promote condom use have been launched within the gay community⁴ and among prostitutes,* but much more needs to be done, especially to reach the drug-using population, female partners of drug-users and bisexuals, individuals with multiple sex partners, and minority populations.^{2,5}

Although the AIDS crisis has spotlighted national attention on the need for condoms, the US Public Health Service called for an increase in condom use in 1980,⁶ well before AIDS was the national public health priority it is now. Both laboratory studies of condom permeability and epidemiological field studies of disease incidence among those who do and do not use condoms have documented that condoms are effective against a wide variety of sexually transmitted diseases (STDs) including gonorrhea,^{7,8} nongonococcal urethritis,^{9,10} trichomoniasis,^{10,11} and herpes genitalis,^{12,13} as well as AIDS.^{14,15} Although one recent review of the literature suggests that clinical evidence for the condom's effectiveness against AIDS is less than conclusive,¹⁶ public health authorities have called for the use of condoms by individuals at high risk.¹⁷ Despite their promotion, however, condoms are underutilized, especially among individuals who are most at risk, such as persons with multiple sex partners,^{10,18} or those who have been previously treated for an STD.¹⁹

Historically, condom use in the US has been associated with extramarital sex, prostitution, and promiscuity.²⁰⁻²² In addition, condoms are perceived by both men and women to impair the pleasure of sexual intercourse.²³⁻²⁵ Furthermore, introducing condom use can entail a difficult interpersonal negotiation that can result in distrust and embarrassment.²⁶

Prior to the AIDS crisis, there were very few concerted efforts by the public health community to promote condom

use in the United States. The paucity of domestic condom promotion efforts stands in sharp contrast to the large-scale public education campaigns undertaken abroad in both developing and industrialized countries^{20,27-29} for birth control purposes and for STD prevention.³⁰ These campaigns have often employed social marketing techniques, promoting positive images of condoms while providing greater accessibility to them through, for example, more convenient purchase outlets and subsidized prices. Recent pressure on the national television networks in the US to air condom advertisements suggests that, with continuing public concern about AIDS, we may eventually see large-scale social marketing of condoms in this country.

We conducted two studies to ascertain the effects of a patient education videotape and an oral recall session on patient's knowledge about the need for condoms and their proper use, attitudes toward condoms, and motivation to redeem coupons for free condoms. We also studied whether the intervention was more successful with different patient subgroups. The procedures for both studies were reviewed and approved by the Institutional Review Board of Education Development Center, Inc.

The Videotape

The videotape, entitled "Let's Do Something Different," follows the story of Diane, a young Black woman who has had two cases of gonorrhea and recently returned from the hospital after a bout of pelvic inflammatory disease. Through the support of her brother and a girlfriend, Diane comes to realize that she can persuade her boyfriend to use condoms, and we see her communicate with him successfully, with good grace and humor. Several features of the videotape merit attention:

- *The videotape portrays using condoms as socially acceptable, normative behavior.* The protagonist's growing confidence that she can influence her lover is due to the persistent advice of her brother and girlfriend, both of whom are sexually attractive and sexually active, yet committed to the values of health and sexual responsibility. The brother, and later the converted boyfriend, serve as role models for male viewers by providing examples of men who understand the severity of STDs and who are comfortable expressing their love and concern for a woman they care about.

- *The focus is on the development of interpersonal and communication skills.* The videotape presents only the most essential factual information about disease etiology and transmission. Furthermore, "safe sex" is promoted not by graphic depictions of sex acts, but by modeling effective communication styles and conflict

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resolution—those interpersonal skills required for negotiating safe sex with one's partners.

- *The protagonist is a woman.* A consequence of asymptomatic venereal infection in women, pelvic inflammatory disease (which often results in sterility) is endemic in the US, with 857,000 cases reported per year.⁷ Black women bear a disproportionate burden, with a rate nearly three times that for White women.³¹ We chose a female protagonist and a feminine point of view for our narrative in order to highlight the heavy toll that unprotected intercourse takes on the reproductive health of women. We hoped that, by coming to understand the consequences of unprotected intercourse on women and children, men (who constitute the vast majority of patients seen in most public clinics) would be more motivated to change their own attitudes and behaviors.

- *It strives to create a sense of identification within viewers.* Since the videotape is intended primarily for use in public clinics that serve a predominantly Black population, most of the characters are Black and they express many of the same attitudes, beliefs, and values that our background research revealed to be important to this patient population. The script purposely avoids the use of medical terms, using instead the argot of the target group.

- *The videotape attempts to make condoms more sexually appealing.* Although it acknowledges their disadvantages, the videotape refers to the ways in which condoms can enhance sexual pleasure—by prolonging intercourse²⁵; by their slight tourniquet effect on the superficial veins of the penis, which may help sustain erection³²; and by giving both partners peace of mind.²³ Also, because of the widespread complaint that condoms are disruptive, the videotape suggests that putting the condom on can be integrated into foreplay. "Eroticizing" the condom in this way is consistent with the tenets of social marketing,^{20,33,34} which hold that target behaviors should be associated with existing values and desires already held by the audience.

STUDY 1: KNOWLEDGE AND ATTITUDES

Method

During the spring of 1986, clinicians at the STD Clinic at Boston City Hospital referred to the study all patients seen at the clinic except those who were under 18 years of age, were non-English speaking, had returned for a test-of-cure examination, or needed to be examined by a specialist. A total of 214 patients were referred. Of those, our research assistant had to pass over 59 to avoid excessive clinic backlog; eight were absent when called; four were non-English speaking; 10 were under 18 years of age and could not be in the study; and four had been seen previously.

While each potential subject waited to receive his or her laboratory test results, the research assistant explained the purpose of the study and solicited his or her informed consent to participate. Of the 129 patients asked, 103 (79.8 per cent) agreed to participate. Half of the consenting subjects were assigned randomly to see the videotape (intervention group, $n=51$); half were not (control group, $n=51$). All subjects in the intervention group viewed the videotape individually.

Measurement

All subjects were asked several questions about their demographic background, STD history, number of sexual partners in the past month, and estimated frequency of condom use (never, almost never, sometimes, most times, all times).

Intervention group subjects were shown the videotape and, immediately after viewing, were asked to recall its main points. As the subjects talked, the research assistant checked off on a master list which points were recalled and wrote out additional points mentioned if they did not appear on the checklist; general probes (e.g., Anything else? Can you think

of anything more?) were used until subjects had nothing more to add.

Both intervention and control group subjects took a 13-item true-false test, administered by the research assistant. All of the test items were derived from the content of the videotape. Item number 13 had a negative item-total correlation and was omitted from further analysis. The remaining 12 items showed good internal reliability (coefficient alpha = .64). Subjects were also asked 14 additional true-false questions designed to measure their attitudes toward condom use. An attitude index derived from these 14 true-false items showed good internal reliability (coefficient alpha = .66).

Subjects then were asked the following open-ended question: "If a person wants to convince his/her sex partners to use condoms, what are some things that person could do or say?"

Patient Profile

Study subjects were predominantly male (81.6 per cent), single (74.8 per cent), Black (79.6 per cent), and native-born (78.4 per cent). Subjects ranged in age between 18 and 51 years (median = 24 years); 77.5 per cent were 30 years or younger; 24.3 per cent had completed only junior high, 36.9 per cent had completed only high school, and 36.9 per cent had attended college or a vocational/technical school.

Sixty-four per cent of the subjects had a prior history of sexually transmitted disease, and about one-fifth reported a diagnosis within the last six months. Just under half of the subjects reported having more than one sex partner during the past month. Fifty-eight per cent of subjects reported that they had never or almost never used condoms prior to their present visit.

Intervention and control groups did not differ with respect to sex, marital status, race, age, education, birthplace, prior STD history, number of sex partners in the past month, or previous condom use.

Results

Patients' Knowledge and Beliefs

Table 1 presents the percentage of intervention and control group subjects who responded correctly for each item of the true-false test. Subjects who saw the videotape scored higher than subjects who did not: 70.6 per cent of the intervention group correctly answered 11 or all 12 items; only 7.7 per cent of the control group subjects scored that well.

Patients' Attitudes

Table 2 presents the percentage of intervention and control group patients who indicated a favorable response for each item of the attitude index. The mean score on the attitude index was higher for the intervention group (13.0) than the control group (11.3), indicating a more favorable attitude toward condom use among subjects who saw the videotape. While 70.6 per cent of intervention group subjects answered 13 or 14 of the attitude items favorably, only 32.7 per cent of the control group patients did so.

Strategies to Persuade Partners to Use Condoms

As shown in Table 3, intervention group subjects cited more strategies for persuading partners to use condoms, exclusive of citing the condom's effectiveness in preventing pregnancy and disease. The most commonly mentioned alternative strategies included: refusing to have sex; and citing that using condoms could be fun and did not have to interfere with lovemaking.

TABLE 1—Percentage of Patients with Correct Response on Each Item of the Knowledge Test by Experimental Condition

Knowledge Test Items*	% Correct Responses			
	Intervention Group	Control Group	Difference	(95% CI of Difference)
1. Using a condom can help make intercourse last longer. (T)	94.1	36.5	57.6	(43.0, 72.2)
2. It's a good idea to use Vaseline for lubrication when using a condom. (F)	98.0	53.8	44.2	(30.1, 58.3)
3. If a woman is on the pill, her sex partners don't need to bother wearing a condom. (F)	98.0	61.5	36.5	(22.7, 50.3)
4. Some men never get symptoms for sexually transmitted disease. (T)	70.6	36.5	34.1	(16.0, 52.2)
5. For most sexually transmitted diseases, women usually get symptoms or early warning signs. (F)	84.3	51.9	32.4	(15.5, 49.3)
6. The condom should be unrolled before attempting to put it on the man's penis. (F)	88.2	61.5	26.7	(10.8, 42.6)
7. A condom should be worn so that it's snug at the tip. (F)	88.2	63.4	24.8	(9.0, 40.6)
8. The only way to make sure of preventing sexually transmitted disease is to use a condom every time. (T)	100.0	78.8	21.2	(10.1, 32.3)
9. When a person has more than one sex partner, it is impossible for that person to know for sure which partner was the source of the infection. (T)	90.2	71.2	19.0	(4.2, 33.8)
10. If a woman has a pelvic inflammatory disease (PID) more than once, she can become sterile and not be able to have children. (T)	98.0	80.8	17.2	(5.9, 28.5)
11. When a person has a sexually transmitted disease, that person should notify every sex partner he or she has had within the last month to get treatment. (T)	100.0	98.1	1.9	(-1.8, 5.6)
12. A person who has a sexually transmitted disease but no symptoms can still pass on that disease to other people. (T)	100.0	98.1	1.9	(-1.8, 5.6)
13. A man doesn't need to put on a condom until he's ready to come or ejaculate. (F)**	98.0	100.0	-2.0	(-5.8, 1.8)
Total Score (Estimated Mean)	11.1	7.9	3.2	(2.7, 3.7)

*Correct answers indicated in parentheses, T = True and F = False.
 **This item was not included in the total score calculations.
 NOTE: Intervention Group saw videotape; Control Group did not.

Differential Effectiveness of the Intervention

To determine whether the videotape was particularly helpful for subgroups of respondents, we estimated a series of regression models that tested the predictive power of each background characteristic as a main effect and in interaction

with the intervention variable. Two sets of models were constructed—one for knowledge and one for attitudes.

When predicting knowledge, three background characteristics interacted with the intervention variable—years of education, previous condom use, and number of sexual partners. Despite correlations among these three background

TABLE 2—Percentage of Patients with Favorable Response on Each Item of the Attitude Index by Experimental Condition

Attitude Test Items*	% Favorable Responses			
	Intervention Group	Control Group	Difference	95% CI of Difference
1. Any man who refuses to use condoms is being selfish. (T)	94.1	61.5	32.6	(17.9, 47.3)
2. More women should get their lovers to use condoms. (T)	100.0	75.0	25.0	(13.2, 36.8)
3. There's no way a man and a woman can make using a condom sexy, even if they have the right attitude. (F)	86.3	63.5	22.8	(6.7, 38.9)
4. I can honestly say that, as a result of my visit to the clinic today, I will be using condoms more often. (T)	86.2	69.2	17.0	(1.3, 32.7)
5. I would not want my friends to know if I used condoms. (F)	90.2	75.0	15.2	(0.9, 29.5)
6. Condoms are not worth the bother. (F)	100.0	88.5	11.5	(2.8, 20.2)
7. A woman who insists that a man wear a condom is being unfair. (F)	96.1	84.6	11.5	(0.3, 22.7)
8. I just couldn't bring myself to talk to my sex partners about using condoms. (F)	94.1	82.7	11.4	(-0.7, 23.5)
9. I could never talk to my friends about whether I should use condoms. (F)	90.2	78.9	11.3	(-2.4, 25.0)
10. It's okay for a woman to carry condoms with her. (T)	94.1	88.5	5.6	(-5.2, 16.4)
11. People who use condoms every single time are being silly. (F)	100.0	96.2	3.8	(-1.4, 9.0)
12. If a friend tried to talk me into using condoms, I'd probably get angry. (F)	88.2	90.3	-2.1	(-14.0, 9.8)
13. Using a condom doesn't have to interfere with lovemaking. (T)	80.4	78.9	1.5	(-14.0, 17.0)
14. It is okay for a man to carry condoms with him. (T)	96.1	96.1	0.0	(-7.5, 7.5)
Total Score (Estimated Mean)	13.0	11.3	1.7	(1.0, 2.4)

*Answers indicating a favorable attitude are indicated in parentheses, T = True and F = False.
 NOTE: Intervention Group saw videotape; Control group did not.

TABLE 3—Total Number of Strategies Offered to Persuade Partners to Use Condoms by Experimental Condition

Number of Strategies	Experimental Condition	
	Intervention Group N (%)	Control Group N (%)
0	11 (21.6)	27 (51.9)
1	28 (54.9)	21 (40.4)
2	10 (19.6)	4 (7.7)
3	2 (3.9)	0 (0.0)
Mean*	1.1	0.6
Standard Deviation	0.6	0.4

*Difference between conditions is 0.5, 95% C.I. = 0.2, 0.8.
 ‡Exclusive of citing the condom's effectiveness in preventing pregnancy and disease.

characteristics, their effects persisted in a multiple regression model, as presented in Table 4 (total R²=68.6 per cent). Regardless of background characteristics, subjects in the intervention group scored higher than subjects in the control group. Moreover, the videotape was most effective for subjects with less formal education, subjects who had never used condoms, and subjects with only one sexual partner in the past month.

When predicting attitudes, three background characteristics also interacted with the intervention variable—years of education, birthplace, and previous condom use. Because of correlations between previous use and the other two background characteristics, however, the effects of previous use (both main effects and interaction) did not persist in a multiple regression model. Thus, the final model, presented in Table 5, includes only the other two background characteristics (total R²=44.3 per cent). Regardless of background characteristics, subjects in the intervention group had more favorable attitudes toward condoms than subjects in the control group. The intervention was most effective for subjects with less formal education and for those who were not native born.

STUDY 2: COUPON REDEMPTION

Method

The second study was conducted in the STD clinic at Boston City Hospital in the summer of 1986. As in the first

TABLE 5—Predicted Values of Attitude Index from Multiple Regression Model

Education	Birthplace	Attitude Index Scores		
		Intervention Group	Control Group	Difference
1 Junior High School	1 USA	12.9	9.4	3.5
	0 Other	12.1	8.6	3.5
2 High School	1 USA	13.1	11.1	2.0
	0 Other	12.3	10.3	2.0
3 Post High School	1 USA	13.4	12.8	0.6
	0 Other	12.6	12.0	0.6

Final Model
 Attitude Index = 6.91 + 4.95 Intervention + 1.70 Education + .82 Birthplace - 1.47 (Education * Intervention)

study, clinicians referred all patients seen at the clinic, other than those who were under 18 years of age, were non-English speaking, had returned for a test-of-cure examination, or needed to be examined by a specialist. Of 393 patients referred, 57 were passed over to avoid creating a backlog of patients in the clinic; 32 were absent when called; five were non-English speaking; 25 were under 18 years of age; and 24 had participated previously in study 1 or an earlier pilot test.

Again, patients were seen while they awaited their laboratory test results. Of the 250 patients eligible to participate, 29 said they could not be reached by telephone for a follow-up interview we planned to conduct, and 39 refused to participate, leaving a study of 182 (or 72.8 per cent) of those eligible.

Qualifying patients who consented to participate were assigned at random to see the videotape (intervention group, n=89) or not (control group, n=93). Both groups of patients were given two postcard-sized coupons and told that they could be redeemed for free condoms; to protect patient privacy, the word "condom" did not appear on either coupon. The first coupon could be redeemed that day at another room at the clinic. The second, pre-addressed and stamped, could be redeemed by mail. When patients redeemed a coupon, they were given (or mailed) a packet with six condoms and a one-page information sheet on proper use.

Patient Profile

The subjects participating in this study were similar to

TABLE 4—Predicted Values of Knowledge Test from Multiple Regression Model

Education	Previous Condom Use	Number of Partners in Past Month	Knowledge Test Scores		
			Intervention Group	Control Group	Difference
1 Junior High School	never	1	11.6	6.5	5.1
	never	5	10.4	6.7	3.7
	most times	1	10.7	7.4	3.3
2 High School	most times	5	9.5	7.6	1.9
	never	1	11.7	7.3	4.4
	never	5	10.5	7.5	3.0
3 Post High School	most times	1	10.8	8.2	2.6
	most times	5	9.6	8.4	1.2
	never	1	11.8	8.2	3.6
	never	5	10.6	8.4	2.2
	most times	1	10.9	9.1	1.8
	most times	5	9.7	9.3	0.4

Final Model
 Knowledge Test = 5.37 + 6.70 Intervention + 0.81 Education + 0.30 Previous Use + 0.05 Number of Partners - .70 (Education * Intervention) - .60 (Previous Use * Intervention) - .35 (Number of Partners * Intervention)

those in Study 1: predominantly male (80.2 per cent), single (85.7 per cent), Black (85.2 per cent), and native born (74.7 per cent). Patients ranged in age between 18 and 73, with a median age of 24; 83.0 per cent of the patients were 30 years of age or younger. Again, educational attainment varied: 18.1 per cent had completed junior high, 43.4 per cent had completed high school, and 37.9 per cent had at least some post-high school education. Two-thirds of the subjects reported a prior history of sexually transmitted disease. Exactly half said they had two or more sex partners within the past month. There were no important differences between the two experimental conditions across all of these background variables.

Results

Coupon Redemption

Across both conditions, 110 (60.4 per cent) of the patients redeemed a coupon at the clinic only; another 25 patients (13.7 per cent) redeemed coupons both at the clinic and by mail; two patients (1.1 per cent) redeemed by mail only; only 45 subjects (24.7 per cent) did not redeem either coupon. Table 6 presents the number of coupons redeemed via clinic and/or mail by condition.

Patients who saw the videotape redeemed a significantly greater number of coupons; more control group subjects redeemed no coupons, while more intervention group subjects redeemed two. A Wilcoxon test yielded a p-value for the difference of .03. A logistic regression model showed that none of the background variables were associated with coupon redemption.

Discussion

Subjects who watched the videotape were more aware of their own susceptibility to STDs and their consequences, the benefits of condom use, the particulars of proper use, and general information on STD transmission than were subjects who did not see the videotape. Furthermore, intervention group subjects were more likely than control group subjects to recognize that one needs to use condoms to protect against disease, even if some other form of birth control is being used. Subjects who saw the videotape agreed more often that condom use could be "eroticized," that it is appropriate for women to insist that their lovers use condoms, and that men who refuse to use them are not thinking of their partner's well-being.

The intervention was most successful with those patients with fewer years of formal education. This finding has important clinical implications. In the various STD clinics in which we have worked, many clinicians have told us that they try harder to educate patients whom they assess to be smarter

or better educated, often discounting larger numbers of patients as uneducable. The success of this intervention with those who are perceived as less educated speaks to the importance of not underestimating the potential of any patient to learn.

We feel that one of the reasons for the videotape's success was that it avoided a didactic, authoritarian tone, reflecting instead the language, beliefs, and values of the inner-city population to whom it was targeted.³⁵ However, just such cultural specificity is likely to render the videotape less effective with other cultural or socioeconomic groups. For example, campaigns to promote condom use among Hispanics, another high-risk group for AIDS, will have to take into account cultural discomfort with talking about sex in mixed groups of males and females and should use themes that are powerful in Latino culture, such as safeguarding fertility and protecting one's family.

Perhaps our most striking finding is the high proportion of patients from both intervention and control groups who sought free condoms by redeeming coupons. This finding strongly suggests that if STD clinics offer free condoms, they will be accepted by the vast majority of patients. Since the office where patients redeemed their coupons was immediately next door to the room where our research assistant offered the coupons, it is possible that the proximity of the two rooms, the relative ease with which coupons could be redeemed, and their packaging in unlabeled envelopes contributed to the high overall rate of redemption. Thus, while convenience factors were likely to have diminished the size of the difference between the groups, the high level of redemption in both groups speaks to the importance of engineering convenience into condom distribution programs. In addition, health educators may note that clinic redemption was much preferred to redemption by mail, a finding that seems to confirm social marketers' insistence on the importance of ease-of-purchase and accessibility to the product being promoted.^{33,34}

The major limitation of this study is the difficulty in measuring changes in actual condom use: so far, researchers have been obliged to rely on self-reports and indirect proxy measures, such as coupon redemption. Methods for assessing actual condom use need to be developed and implemented.

Another limitation was our inability to track patients' knowledge and attitudes over time. Social science research points the importance of reaching the target audience repeatedly via multiple pathways.² As with any other one-time intervention, the effects of this videotape are unlikely to persist without reinforcement. The results of these studies suggest, however, that drama-based videotapes could be an effective component of an integrated program that continues over time.

The success with men of a videotape featuring a feminine perspective adds credibility to the observation made frequently by education intervention specialists that people are often more motivated to act out of concern for others than on their own behalf. There may be strategic advantages for condom promotion campaigns and other AIDS risk reduction efforts aimed at men to portray clearly the health risks that unprotected intercourse creates for women and children. Moreover, by portraying strong, assertive women taking responsibility for their health, educational programs have an opportunity not only to motivate men, but also to provide role models and social support to women who may wish to take more purposeful action on their own behalf. Ideally, inte-

TABLE 6—Total Number and Percentage of Coupons Redeemed by Experimental Condition

Number of Coupons Redeemed	Experimental Condition	
	Intervention Group n (%)	Control Group n (%)
0	17 (19.1)	28 (30.1)
1	56 (62.9)	56 (60.2)
2	16 (18.0)	9 (9.7)
Mean*	1.0	0.8

*Difference between conditions is 0.20, 95% CI = 0.02, 0.38

grated long-term programs will create a social climate in which both men and women will feel comfortable initiating condom use.

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Malpractice Seminar Report Available

A report on a recent medical malpractice seminar, co-sponsored by the Health Resources and Services Administration (HRSA) of the US Public Health Service and the Washington Business Group on Health, has been issued. Copies of the 47-page publication entitled *Medical Malpractice: A Costly Barrier to Health Care System Reform* may be obtained from the Washington Business Group on Health, 229 1/2 Pennsylvania Avenue, SE, Washington, DC 20003. Tel: (202) 547-6644.