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Recruiting Patients from a Sexually Transmitted Disease Clinic to Sexual Risk Reduction Workshops: Are Monetary Incentives Necessary?

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Abstract

Most patients attending urban STD clinics can benefit from workshops designed to promote sexual health and reduce sexual risk behaviors. However, many patients do not attend such workshops when invited. The purpose of this study was to evaluate the effects of providing a financial incentive on attendance at a sexual risk reduction workshop tailored to patients at an urban STD clinic. A quasi-experimental design with two conditions (incentive vs. no incentive) was implemented sequentially with 107 STD clinic patients (58 men, 49 women; 69% African-American; mean = 27 years old) reporting risky sexual behavior. Attendance at a subsequent sexual risk reduction workshop served as the key outcome. Results indicated that participants who were provided with a \$30 cash incentive were more likely to attend the risk reduction workshop (38%) than participants who were not offered an incentive (9%), $\chi^2 (1, N = 107) = 12.88, p < .001$. Additional analyses confirmed that incentive (AOR = 7.59, $p < .001$) predicted attendance even after controlling for other significant predictors, namely, employment status (AOR = 3.04, $p < .05$) and age (AOR = 1.07, $p < .05$). We conclude that financial incentives are an effective way to increase attendance at sexual risk reduction workshops for at-risk urban populations.

Keywords

incentives; intervention; HIV prevention; STD; sexual behavior

INTRODUCTION

Patients attending publicly-funded, sexually transmitted disease (STD) clinics are at elevated risk for HIV infection. HIV infections occur disproportionately among men and women already infected with another STD, such as gonorrhea or chlamydia.¹ Surveillance data from STD clinics from the northeastern US indicate an overall HIV seroprevalence rate of 4% for heterosexual men and women, and 19% for men who have sex with men (MSM),² rates that far exceed the HIV seroprevalence rate of 0.3% in the general US population. Fortunately, ample evidence documents the efficacy of theoretically-guided, sexual risk reduction programs. Such programs have been shown to reduce rates of unprotected intercourse and incident STDs in a variety of populations,³ including MSM,⁴ urban men⁵ and women,^{6, 7} adolescents.^{8, 9}

In order for empirically-documented interventions to make a public health impact, such interventions must reach the patients who need them. To attract at-risk patients and optimize attendance at workshops, researchers typically have provided patients with a financial incentive contingent upon attendance. As a part of a larger study, this study examined the necessity of providing monetary incentives to promote patient attendance. For the first four of eight weeks, we invited patients to attend a risk reduction workshop but provided no monetary incentive; for the last four weeks, we extended invitations but also offered patients a monetary incentive to attend. We predicted that patients would attend under both sets of conditions but that attendance would be greater with the monetary incentive.

METHODS

Research design

A quasi-experimental design was used. The independent variable was the presence or absence of a monetary incentive. Thus, during Phase I, patients were invited to a sexual risk reduction workshop but they were *not* provided with any monetary incentive for attending. During Phase II, a new group of patients was invited to a sexual risk reduction workshop and provided with a monetary incentive for attending. Attendance at the workshop served as the outcome measure.

Setting

Participants were recruited from a large, urban STD clinic in upstate New York during May – July, 2004. Patients had already enrolled in a larger study investigating the efficacy of a sexual risk reduction program.

Participants

One hundred and seven patients (58 men, 49 women) participated. The majority were African-American ($n = 74$; 69%), had a high school education or less ($n = 61$; 57%), and had never been married ($n = 95$; 89%); 57 patients (53%) were employed part- or full-time, and 54 (50%) had an income of less than \$15,000/year. Patients' mean age was 27 years ($SD = 7.7$) and they had an average of 3.5 sexual partners in the past 3 months ($SD = 5.2$).

Procedures

Patients who registered for a clinic visit were called by registration number (not name) from the waiting room into a private exam room, where they were asked a series of screening questions by a trained and well-supervised Research Assistant (RA). A patient was eligible for the study if she or he (a) was 18 years of age or older, (b) not HIV positive, and (c) had clear signs and symptoms of a STD or reported unprotected vaginal or anal intercourse with 2 or more partners, a partner with 2 or more partners, an anonymous partner, a partner who injects drugs, or a partner with a STD.

Eligible patients were told that, in addition to the normal clinic procedures, study participation would involve completing a confidential survey regarding their sexual history and behavior as well as other health behaviors. In addition, patients were told that they *might* be invited to attend a 4-hour, same-gender, risk reduction workshop, to be held within the next two weeks. All patients were told that whether or not they were invited to the workshop would be determined by chance (all participants in this study were invited to a workshop). Patients recruited during both the non-incentive and incentive weeks were treated identically; thus, they met with the same RAs, who followed nearly identical scripts. They told that there would be no charge for this educational workshop, and that lunch would be provided free-of-charge. The only difference in the procedures was that patients recruited during the incentive weeks were told that they would receive a \$30 stipend to compensate them for their time. After

receiving a full description of study procedures, interested patients provided informed written consent.

Patients who provided informed consent began the study by completing a private, audio computer-assisted self-interview (ACASI) survey. The survey included items about current and past sexual behavior, attitudes towards condoms and other risk reduction strategies, mental health, and substance use. The survey also included several items to assess attitudes towards attending health promotion groups and receiving health-related information, where participants rated on a 6-point scale how much they agreed or disagreed with these statements; items were scored so that a higher number indicated a more positive attitude towards groups. Most patients completed the survey within 45 minutes. Participants then received an intake and physical exam, provided biological samples that were tested for syphilis, HIV (rapid test), gonorrhea, and chlamydia; and received a brief clinic-based intervention. After this brief intervention, participants received their STD and HIV test results and were provided with medication and treatment recommendations. They completed a brief post-assessment questionnaire, and were given details about the safer sex workshop.

During and after this initial clinic visit, several steps were taken to optimize attendance at the workshops. Nurses and educational materials enthusiastically promoted the workshop, and stated that the workshop would provide further information about the topics discussed in the clinic and could facilitate safer sex goals. If patients expressed attitudinal barriers to attending the workshop, these were discussed with the patient as part of clinic-based counseling. Participants who received an information safer sex DVD in the clinic learned from the DVD that some clinics offer safer sex workshops, which were described as fun, informative, and helpful in reducing risks for HIV and other STDs.

At the end of the initial clinic visit, the RA gave the participant a printed invitation with the date, time, and location of the workshop. The RA told the participant that the workshop would be fun and informative, and lunch would be provided. If a participant expressed logistical barriers to attending the workshop (e.g., transportation, child care), the RA helped the participant problem-solve ways to overcome the barriers. Participants in the incentive condition were reminded that they would receive \$30 for attending the workshop.

To further encourage workshop attendance, reminder calls were made to all participants one to two days before the workshop. Multiple phone calls were made, in an effort to speak directly with all participants. If, during the reminder call, the participant expressed logistical barriers to attending the workshop, the RA helped the participant problem-solve ways to overcome those barriers. Participants in the incentive condition were again reminded that they would receive \$30 for attending the workshop.

RESULTS

Preliminary analyses

First, we compared patients assigned to the incentive and no-incentive conditions on key demographic and risk variables (see Table 1). Use of *t*-tests and χ^2 analyses revealed no differences between incentive and no-incentive groups on the following variables: gender, age, race/ethnicity (minority vs. Caucasian), education, employment status, income, marital status, number of children, number of sexual partners in the last three months, or attitudes towards groups. These analyses established the equivalence of patients assigned to the incentive and no-incentive conditions on key demographic and risk variables.

Primary analyses

Among the 55 patients who received no incentive, only 5 patients (9%) attended the workshop. Among the 52 patients who did receive an incentive, 20 (38%) attended the workshop. To determine if incentives affected workshop attendance, we subjected the two (condition) by two (workshop attendance) contingency table to a χ^2 analysis. The results indicated that the two conditions differed significantly, $\chi^2 (1, N = 107) = 12.88, p < .001$.

To determine if there were differences between patients who attended ($n = 25$), and those who did not attend the workshop ($n = 82$), we compared both groups on all demographic and risk variables reported in Table 2. Attendees were older ($M = 29.8$ years) than non-attendees ($M = 26.1$), $t (105) = -2.12, p < .05$, and were less likely to be employed (14% of employed patients attended a workshop whereas 34% of unemployed patients attended, $\chi^2 (1, N = 107) = 5.93, p < .05$). Next, we used hierarchical logistic regression to determine whether incentive predicted group attendance after controlling for other variables associated with attendance (i.e., age, employment). The results are presented in Table 3. Age and employment were entered as predictors into the first model; incentive was included as a predictor in the second model. The second model predicted attendance, likelihood ratio $\chi^2 (3) = 24.26, p < .0001$. In this model, employment status (AOR = 3.04, $p < .05$), age (AOR = 1.07, $p < .05$) and incentive (AOR = 7.59, $p < .001$) were associated with likelihood of attending groups, with individuals who were unemployed, were older, and received an incentive more likely to attend. The difference between the two models was significant, $\chi^2 (1) = 14.68, p < .001$, indicating that the model including incentive predicted group attendance better than the model including only the covariates.

DISCUSSION

The primary finding was that the provision of a financial incentive significantly improved attendance by high risk STD clinic patients at a sexual risk reduction workshop. Whereas only 9% of those invited attended with no incentive, 38% attended when a monetary incentive was provided. The effects of the incentive were apparent even after controlling for other variables associated with group attendance. Consistent with previous reports of improved patient compliance with healthcare treatments,¹⁰ the present results demonstrate the value of using monetary incentives in the prevention context.

The participation rate observed, even when an incentive was provided, can be improved. We hypothesize that larger incentives will enhance attendance. Although no studies have addressed this issue directly, two studies have demonstrated that monetary incentives lead to better attendance than non-monetary incentives. In one study, Deren et al.¹¹ recruited injecting drug users and their partners for a HIV risk reduction program. Initially, they provided cash or a money order to participants who attended a one-hour session; later, they provided food coupons or gift certificates of equal value. They found a significant decline in group attendance after switching from monetary to non-monetary incentives (e.g., at one site, 34% of patients completed the intervention when money was used but only 24% when the incentive was a gift certificate). These findings were subsequently replicated by Kamb et al.¹²

In addition to the strategies that we employed (e.g., provision of food and child care, convenient location and scheduling; use of skilled professional facilitators; emphasis of the relevance of the topic to the lives of participants), other strategies might also improve attendance at workshops, including: briefer or evening workshops; free transportation; use of outreach workers as well as peer co-facilitators to allay concerns about trust; and use of gender-, culture- and age-tailored recruitment/marketing materials. To increase participant enrollment, Rutledge et al.¹³ further recommend informing patients of study expectations during enrollment, providing referrals for other needs, and making reminder contacts. It is also likely that

marketing of the workshops to other community-based providers, and offering them over a longer period of time would facilitate ‘word-of-mouth’ diffusion, further increasing attendance. To our knowledge, however, these strategies have not received systematic study in the context of HIV prevention.

It is difficult to compare the attendance rates observed in this study to rates observed in other trials because such information typically has not been reported. Comparisons across studies are further complicated by methodological differences in the number and length of sessions, the amount of the incentive provided, and the target population. Adoption of the CONSORT reporting requirements by leading biomedical and behavioral journals will improve the literature in this regard, and make comparisons across studies possible and informative.¹⁴

Several patient characteristics also were associated with attendance. We found that unemployed participants were more likely to attend the workshops than employed participants. Those who were employed may not have been able to take time off or reschedule their work commitment. Additionally, participants with a steady income from employment may have been less motivated by the financial incentive. Older age also was associated with workshop attendance. Younger individuals may not feel comfortable being in a group, or may feel invulnerable,¹⁵ and therefore not perceive the need to attend a workshop aimed at health promotion and/or risk reduction.

Providing incentives to patients so that they attend groups raises several concerns for health promotion programs. An obvious concern is the cost of providing such incentives. Funded investigators often have access to resources to pay participants; indeed, this practice is common in research. However, many community-based organizations or governmental public health providers might find it difficult to locate such resources, or convince oversight boards of the merits of paying patients to attend groups; that is, such boards might assume that, because the workshops provide direct benefits to the participants, financial incentives should not be needed.

A second concern is that external incentives may have an unintended negative effect on patient motivation. Theory¹⁶ suggests that providing extrinsic incentives may undermine intrinsic motivation, perhaps reducing the likelihood that patients will adopt or maintain safer sexual behaviors. Patients may attribute their attendance as being ‘solely for the money’ rather than attributing their participation to self-protection, community concern, or other intrinsic motives. This mis-attribution might undermine behavior change efforts. A third concern is that the provision of monetary incentives, especially when they are too large, could be coercive and unethical. This concern seems more appropriate to high risk interventions (e.g., exploratory pharmacotherapy), and less valid for behavioral interventions, where risks are minimal.

Balanced against these concerns are counterpoints. First, the evidence from many settings, populations, and contexts demonstrates that providing incentives is effective. As demonstrated in this study, as well as in other prevention^{11, 12, 17} and treatment¹⁰ contexts, financial incentives lead to the desired health behavior or practice.

Second, there is evidence that incentives can be *cost-effective*. In the prevention context, Pinkerton et al.¹⁸ evaluated the cost-effectiveness of a community-level HIV prevention intervention for gay men. For this intervention, the cost of HIV prevention was more than offset by savings in averted future medical care costs. Giuffrida and Gravelle¹⁹ completed an economic analysis of the costs and benefits of paying patients to comply with medical treatments, and concluded that financial incentives can be cost-saving. They describe the circumstances in which patients should be paid to comply with treatment, and strategies to optimize payment levels.

Third, despite theoretical concerns regarding the undermining of patient motivation, we are aware of no evidence for this in the context of personal health behaviors. Most of the research describing the 'hidden costs of rewards'¹⁶ was completed in educational contexts, and its generalization to the health care domain should be done cautiously.

Two limitations of this research need to be acknowledged. First, the sample size was relatively small. It is possible, although we believe unlikely, that a larger sample would reveal a different pattern of responding to the workshop invitations. Also, a sample of persons possessing more intrinsic motivation for risk reduction (e.g., HIV-infected persons and their partners) might be more likely to attend workshops without incentives, but such a sample would not be representative of most STD clinic clients. Second, contemporaneous randomization was not used because this might have angered participants who were assigned to the no incentive condition. Nonetheless, it is possible that the superior attendance observed during the incentive phase resulted from historical factors rather than the incentive.²⁰ This alternative explanation is unlikely, but it cannot be ruled out given the design of this study.

Overall, the results of this study demonstrated that the provision of a financial incentive improved attendance at an HIV risk reduction intervention among STD clinic patients. Providing incentives to patients to do what is in their best interest is a complex issue that warrants further investigation. By providing data on this topic, scientists can help to inform the discussion among policy makers, health care providers, and tax payers so that the public health can be protected and improved.

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Table 1

Comparison of Patients Assigned to the Incentive and No-Incentive Conditions on Sociodemographic and Sexual Risk Variables

Characteristic	Incentive (<i>n</i> = 52)		No-Incentive (<i>n</i> = 55)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age (years)	26.6	7.2	27.4	8.2
# of children	1.3	1.6	1.2	1.4
# of partners last 3 months	2.8	2.3	4.1	6.9
Attitudes towards groups	5.1	0.6	5.0	0.7
	<i>n</i>	%	<i>n</i>	%
Gender (female)	23	44	26	47
Race/Ethnicity				
Caucasian	14	27	12	22
African American/Black	35	67	39	71
Other	3	6	4	7
Education				
< high school	10	19	11	20
high school graduate	19	37	21	38
some college	18	35	16	29
college graduate	5	10	7	13
Employed	27	52	30	55
Income < \$15,000/year	26	50	28	51
Married	2	4	1	2

Table 2
Comparison of Workshop Attenders and Non-Attenders on Sociodemographic and Sexual Risk Variables

Characteristic	Attenders (<i>n</i> = 25)		Non-Attenders (<i>n</i> = 82)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age (years)	29.8	7.9	26.1	7.5
# of children	1.5	1.7	1.1	1.4
# of partners last 3 months	3.1	2.8	3.6	5.8
Attitudes towards groups	5.1	0.6	5.0	0.7
	<i>n</i>	%	<i>n</i>	%
Gender (female)	10	40	39	48
Race/Ethnicity				
Caucasian	5	20	21	26
African American/Black	18	72	56	68
Other	2	8	5	6
Education				
< high school	4	16	17	21
high school graduate	9	36	31	38
some college	9	36	25	30
college graduate	3	12	9	11
Employed	8	32	49	60
Income < \$15,000/year	15	60	39	48
Married	0	0	3	4

Table 3

Predictors of Workshop Attendance

Construct	Odds Ratio	Confidence Interval	χ^2	df	<i>p</i>
Covariate Model			9.58	2	< .01
Employment	3.02	1.15—7.92	5.03	1	< .05
Age	1.06	1.00—1.12	3.56	1	< .06
Full Model			24.26	3	< .0001
Employment	3.04	1.07—8.61	4.37	1	< .05
Age	1.07	1.00—1.15	4.30	1	< .05
Incentive	7.59	2.40—24.06	11.86	1	< .001