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Effects of a One Hour Intervention on Condom Implementation Intentions among Drug Users in Southern California

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Abstract

Approximately 36% of HIV cases are related to substance abuse. Substance abusers, including non-injection drug users, are high-risk for contracting HIV due to risky behaviors, including unprotected sex. Due to these behavioral and infection risks, feasible interventions that focus on condom use within this population are imperative. The current study involved the development of brief intervention designed to increase implementation intentions (situation-linked action plans) to use condoms in convicted non-violent drug offenders participating in drug diversion programs in Southern California. Participants (n = 143) were randomized at the individual level to either waitlist-control or experimental conditions. The randomized wait-list control group received the HIV survey for the pre-test before the intervention, while the experimental group received a neutral, non-HIV related, survey at pre-test. The experimental group received the HIV survey as the post-test after the intervention (wait-list control group received the neutral, non-HIV related, survey). One-tailed Mann Whitney U tests were used to compare the wait-list control and experimental groups. The experimental group was more likely to report stronger implementation intentions to use condoms ($p < .001$). These results indicate in the short term that a brief, easily disseminated HIV intervention can be effective for increasing implementation intentions to use condoms in an extremely high HIV-risk population.

Keywords

HIV/AIDS; condoms; Drug Users; implementation intentions; intervention

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Introduction

The HIV/AIDS epidemic continues to grow at an alarming rate with an average of 150 new cases diagnosed each day in the US (Centers for Disease Control and Prevention, 2008). Approximately 40% of the 18,000 deaths in the US are associated with drug abuse (National Institute on Drug Abuse, 2006). Drug use suppresses the immune system, compromising the resistance against marginal exposure to HIV (Fitterling, Matens, Scotti, & Allen, 1993) increasing risk. Drug users are more likely to engage in risky sexual behavior known to transmit HIV (e.g., Stacy, Ames, Wiers, & Krank, 2010). HIV rates are high among all drug users, including non-injection drug users (NIDUs; Des Jarlais et al., 2007).

Situation-linked action plans: Implementation intentions

Intentions alone do not always result in the desired action or behavior change (Gollwitzer, 1999). Gollwitzer notes intentions only account for 20 – 30% of the variance in behavior. Hoping to improve the predictive power of intentions, Gollwitzer defines implementation intentions as the specifics of intentions, the where, when, and how. Implementation intention formation allows participants to specify situations and their response when a particular situation arises, thereby controlling their behavior based upon specific environmental cues (Milne, Orbell, & Sheeran, 2002). By forming implementation intentions, there is a much higher likelihood of behavior change (Gollwitzer, 1999; Gollwitzer & Sheeran, 2006). Research indicates forming implementation intentions increased a number of health promotion behaviors (e.g., Gollwitzer & Sheeran, 2006).

Intervention development

The current study integrated HIV prevention information and implementation intentions into a short, randomized intervention amenable to risky drug using populations. Our goal was to create a program that: a) was amenable to a short, group-level HIV-risk prevention and education program; b) could be readily used in future programs, even in the absence of highly specialized staff training and; c) provides a motivational basis and necessary step toward making specific preventive plans. We developed, conducted, and evaluated a 1-hour HIV prevention intervention to take place during drug diversion classes. To maximize relevance to the greatest number of participants (mostly NIDUs), the focus was on condom use. We proposed that a short HIV educational intervention will increase implementation intentions to use condoms among drug users in the experimental group. As a fidelity check of the intervention we also expected to reduce HIV misconceptions in the experimental group.

Methods

Participants

Participants were recruited from drug diversion sites located in Southern California that provide court-mandated outpatient drug education classes (e.g., Proposition 36). Participants included 143 individuals who have been convicted of a nonviolent drug charge. Drug offenses included driving under the influence, possession of small amounts of drugs, and writing illegal prescriptions. A large majority of this population are NIDUs (Ames, Grenard,

& Stacy, 2012). While the intervention included some information about not sharing needles, it was not the main focus of the study and therefore not investigated. Eligibility criteria included participating in a drug diversion class, minimum age of 18, spoke English, did not have any cognitive, language, or hearing impairments, and provided written informed consent.

Study design and data collection

The University's Institutional Review Board approved the study. Participants were randomly assigned at the individual level to either the experimental or control group. Envelopes containing the measures were randomized beforehand so that researchers were unaware of which group participants were assigned. At each session, informed consent was obtained from all participants and was collected separately from surveys. Participants randomly received a survey focused on HIV, myths, and implementation intentions or they received a neutral survey that was not HIV related (see Figure 1). Those in the control group first received the HIV survey and the experimental group first received the non-HIV related neutral survey. After the intervention, participants in the control group completed the non-HIV related neutral survey and the experimental group completed the HIV survey. HIV education was provided to everyone as a service to the program and clients.

Procedure

The intervention included a 1-hour HIV educational group session (average of eight participants per group). The education included basic HIV/AIDS information, methods of sexual protection, condom negotiation, and implementation intention formation.

Implementation intentions were encouraged through several steps. The educator provided techniques for handling certain situations such as not having a condom and being with a partner who opposed using a condom. Next, participants were given a worksheet instructing them to write down a personally relevant risky situation that could happen in the near future (e.g., not having a condom or consuming too much alcohol). Participants answered questions about what they would do, say, and safe alternative behaviors. This guided format is in accord with Arden and Armitage (2008), who proposed that educators and counselors should help participants identify critical situations and appropriate behavioral responses. Participants were encouraged to form vivid images of the linkage between situations and preventive plans, which is expected to enhance the formation of implementation intentions (van Osch et al., 2010).

Further HIV education was provided (approximately 5 minutes) and then the final survey was given. After the final survey, additional information (on hepatitis) was provided as a service to the participants and drug program, but it was not part of the study or its evaluation. Following the session, participants were verbally debriefed, and received compensation and pamphlets.

Outcome measures

Intervention fidelity: HIV misconceptions—Nine HIV misconceptions were used to test whether participants were processing the information in the presentation. We expected

the experimental group to report less agreement with the misconceptions. After reverse coding one item, all measures were consistently in the same direction.

Implementation intentions—We sought to measure implementation intentions with reference to specific plans such as when, where, and how condoms would be used. While we created a new scale, our strategy is consistent with Gollwitzer's (e.g., Bayer, Gollwitzer, & Achtziger, 2010; Gollwitzer, 1999) goal of linking a specific context with a specific plan of action and with implementation intention research on other health behaviors (Rise, Thompson, & Verplanken, 2003). Seven Likert style items ranging from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*) were used to measure implementation intention ($\alpha = .92$). All responses to each item were summed to create a total implementation intention score ranging from 7 to 42.

Data analysis

An independent t-test (age) and chi-square tests (gender, marital status, and race) were used to compare demographic variables. Results did not indicate any significant differences between the two groups, therefore it was unnecessary to control for demographic variables (see Table 1). Descriptives and frequency analyses indicated non-normal distributions for the variables, therefore, Mann Whitney U was used to compare the differences in ranked scores of experimental and control groups to test the effectiveness of the intervention. Significance tests are reported one-tailed in accordance with the directional hypothesis.

Results

Intervention Fidelity: HIV Misconceptions

Results indicate that for five of the nine misconceptions, the experimental group reported significantly less misconceptions than the control group. While four questions did not achieve statistical significance, all were in the hypothesized direction (see Table 2). These results indicate that the intervention was credible and therefore implementation intentions were analyzed.

Implementation intentions

The implementation intention assessment was created and tested in this study. Consistent with our hypothesis, the experimental group revealed significantly greater scores on the Implementation Intention Scale when compared to the control group (see Table 2).

Discussion

The current study evaluated the immediate impact of a 1-hour education program on a sample of hard-to-reach drug users. We found that implementation intentions to use condoms can be increased, at least temporarily, in a very brief intervention. Evaluation took place immediately after the intervention and therefore the effect may not be long-lasting. However, the positive results found in this study provide evidence that a short intervention is feasible and therefore expanding this design by adding elements such as behavioral measures and multiple pre- and post-tests would be used in the future. Furthermore, as

previous studies utilizing implementation intentions reported successful behavioral changes (Gollwitzer & Sheeran, 2006), even this short intervention could have led to long term change.

Conclusion

This study demonstrated the immediate success of implementing a brief HIV-related intervention in drug users and introduced a new, successful measure to assess implementation intentions. The intervention can be easily replicated and disseminated, and the new measure provides a method to assess effects on action plans not previously reported in the HIV literature. Effective, brief interventions are more efficient monetarily and could reduce attrition rates compared to traditional long interventions. Additionally, drug diversion programs and participants are quite amenable to brief interventions on HIV risk avoidance and planning.

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Figure 1.
Study design and procedure.

Table 1

Demographic characteristics by condition.

Characteristics	Total (n = 143)		Control (n = 71)		Experimental (n = 72)		Differences Between Groups	
	n (%)		n (%)		n (%)		Test	p
Age <i>M</i> (<i>SD</i>) ^a	31.55 (10.40)		31.02 (9.14)		32.16 (11.71)		$t_{117}=0.60$	0.5511
Gender							$\chi^2_1=0.04$	0.8341
Male	95 (66.4%)		48 (67.6%)		47 (65.3%)			
Female	40 (28%)		21 (29.6%)		19 (26.4%)			
Missing	8 (5.6%)		2 (2.8%)		6 (8.3%)			
Marital Status							$\chi^2_1=0.47$	0.2260
Committed relationship	52 (36.4%)		30 (42.3%)		22 (30.6%)			
Single	83 (58%)		39 (54.9%)		44 (61.1%)			
Missing	52 (36.4%)		2 (2.8%)		6 (8.3%)			
Race/Ethnicity							$\chi^2_2=5.15$	0.0761
White	48 (33.5%)		31 (43.7%)		17 (23.6%)			
Hispanic	64 (44.8%)		28 (39.4%)		36 (50.0%)			
Other	22 (15.4%)		10 (14.1%)		12 (16.7%)			
Missing	9 (6.3%)		2 (2.8%)		7 (9.7%)			

Note:

^aMean age and standard deviation are in years

Table 2

Fidelity check of HIV misconceptions measures and results comparing control and treatment groups.

HIV Misconceptions ^a	Control		Treatment		Mann Whitney U Test (Z)	p	Effect Size
	Median	Mean (SD)	Median	Mean (SD)			
1. AIDS is genocide against the African-American race.	1.00	2.77 (2.11)	1.00	2.62 (2.00)	-0.31	.38	
2. The government is not doing enough to fight AIDS.	4.00	4.59 (1.97)	4.00	3.97 (2.18)	-1.64	0.05*	f=.14
3. HIV is not a threat to me.	1.00	2.54 (1.10)	1.00	2.29 (2.18)	-1.32	0.09	
4. There is a vaccine that prevents the spread of AIDS.	1.00	2.46 (1.95)	1.00	2.22 (1.98)	-1.08	0.14	
5. Several people have gotten AIDS by donating blood.	3.00	3.14 (2.06)	1.00	2.40 (1.92)	-2.48	<0.01*	f=.21
6. People can get AIDS by eating food that has been prepared by someone who has the disease.	1.00	1.77 (1.26)	1.00	1.47 (1.22)	-2.31	<0.01*	f=.20
7. People with AIDS can be cured if they seek medical attention.	1.00	2.38 (2.08)	1.00	2.22 (1.95)	-0.46	0.32	
8. People with HIV can look and feel healthy. ^b	2.00	2.31 (1.71)	1.00	1.41 (1.00)	-3.78	<0.01*	f=.32
9. HIV is killed by bleach.	1.00	2.28 (1.94)	1.00	1.66 (1.55)	-2.13	0.02*	f=.18

Note: SD = standard deviation. A Mann Whitney U Test was used for all analyses, while the means and standard deviations are included in the table to show differences, the medians were used to detect group differences.

* p 0.05.

^a Responses were measured on a 7-point Likert scale ranging from Strongly Disagree (0) to Strongly Agree (6).

^b Item was reverse scored so that all measures were analyzed in the same direction.

Table 3

Implementation Intentions measures and results comparing control and treatment groups.

	Control		Treatment		Mann Whitney U Test (Z)	p	Effect Size
	Median	Mean (SD)	Median	Mean (SD)			
Implementation Intentions ^b	25.00 ^b		35.00 ^b		4.48	<0.01*	r=.38
1. I have made detailed plans about when I will use a condom for vaginal or anal intercourse.	3.00	3.50 (2.06)	6.00	4.53 (2.00)	2.99	<0.01*	r=.25
2. I have made detailed plans about when I will carry a condom.	3.00	3.30 (2.01)	5.00	4.36 (1.87)	3.10	<0.01*	r=.26
3. I have made detailed plans about when I will use a condom the next time I have oral sex.	1.00	2.28 (1.79)	4.00	3.58 (2.05)	3.84	<0.01*	r=.32
4. I have made detailed plans on where I will keep condoms readily available.	3.00	3.40 (1.94)	6.00	5.04 (1.59)	5.13	<0.01*	r=.44
5. I have made detailed plans on what I will say to a partner about using condoms before having sex.	3.00	3.18 (1.94)	5.00	4.38 (1.89)	3.58	<0.01*	r=.30
6. I have made detailed plans about what I will say if my partner refuses to use a condom.	3.00	3.42 (2.05)	6.00	4.69 (1.70)	3.84	<0.01*	r=.33
7. I have made detailed plans about the actions I will take if my partner refuses to use a condom.	3.00	3.31 (2.07)	6.00	4.68 (1.70)	3.98	<0.01*	r=.34

Note: SD = standard deviation. A Mann Whitney U Test was used for all analyses, while the means and standard deviations are included in the table to show differences, the medians were used to detect group differences.

* p 0.05.

^a Responses were measured on a 6-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (6) and all items were highly reliable ($\alpha = 0.92$).

^b Scores from Implementation Intentions measures were compiled into a total score that could range from 7 to 42.