Published in final edited form as:

AIDS Behav. 2014 October ; 18(10): 1904–1912. doi:10.1007/s10461-014-0773-4.

A pilot RCT of an intervention to reduce HIV condomless sex and increase self-acceptance among MSM in Chennai, India

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Abstract

This is a 2-arm pilot randomized controlled trial (N=96) of a behavioral intervention (4 group and 4 individual sessions) integrating risk reduction counseling with counseling to foster self-acceptance in MSM in India compared to Enhanced Standard of Care (ESOC). Both conditions involved HIV and STI testing and counseling at baseline and 6-months, and assessments of condomless sex at baseline, 3-, and 6-months. A significant condition by time interaction suggested a difference in the rate of change in number of anal sex acts without condoms in the intervention versus ESOC ($p<.0001$). Post-hoc contrasts suggested that the overall difference was due to intervention-response at 3-months. The incidence of bacterial STIs was 17.5% in the intervention condition and a 28.6% in ESOC. Addressing self-acceptance and related psychosocial concerns in the context sexual risk reduction counseling for MSM in India was feasible and acceptable. Testing the intervention for efficacy is justified.

Keywords

MSM; risk reduction; India; self-acceptance

INTRODUCTION

In India, men who have sex with men (MSM) are at increased risk for HIV. Their overall estimated prevalence is 14.7%, which is 17.6 times higher than the prevalence of HIV in the general adult population [1]. Given the size of the population of India, home to one of the largest MSM populations in the world, the development of effective prevention

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Registration: Clinicaltrials.gov NCT01266122.

interventions is urgently needed. To date, there are no published effective HIV prevention interventions for Indian MSM.

The unique and complex psychosocial context of Indian MSM should be considered in the development of HIV prevention interventions. Challenges faced for this population include societal stigmatization, discrimination, harassment, and violence [2–4] as well as strong cultural expectations from family and society to get married and have children [5–7] resulting, for many MSM, in separation of their sexual behavior from their sexual identity. The result of this is that many Indian MSM report having sex with both men and their wife. Same-sex sexual behavior is not accepted, and likely contributes to stigma and therefore hinders prevention efforts [4,8,9]. In fact, Indian Penal Code section 377 was recently upheld (December 2013) by the Supreme Court in India, making same-sex sexual behavior illegal and therefore punishable by law. Taken together, these adverse social conditions may lead to higher rates of mental health problems for MSM in India. A prior study from our group found that approximately 29% of MSM met criteria for clinical depression, and 45% mentioned some level of suicidal ideation [10]. Additionally, prior quantitative work has shown that mental health issues such as depression [11,12], and lack of exposure to HIV prevention interventions [13] are associated with sexual HIV risk among Indian MSM.

Our prior formative work revealed that despite the multiple challenges faced by MSM in India, self-acceptance may be a key resilience factor related to both improved mental health and decreased HIV risk [14]. Consistent with the minority stress model related to mental health in gay and bisexual men in Western settings [15], and with US based research highlighting the importance of intertwined mental health problems, or syndemics, in gay and bisexual men associated with HIV risk behavior [16,17], our model of self-acceptance in Indian MSM posits that having a positive view of one's self (i.e. having high self-acceptance) can be key to coping with stress related to one's sexual orientation and societal-based stigmatization, as well as protecting one's self from acquiring HIV or sexually transmitted infections (STIs). Accordingly, self-acceptance is viewed as a key resilience factor against multiple potential problems related to culturally specific sexual minority stress facing this population, and using the intervention to build self-acceptance was hypothesized to increase the potential beneficial effects of risk reduction counseling.

The current study is part of a program of research to develop and initially test a culturally relevant, resilience-based HIV prevention intervention for MSM in India that addressed both sexual risk as well as a key resilience variable for this population, self-acceptance [14,18]. We hypothesize that the intervention would be feasible to deliver, and that MSM who were assigned to the intervention condition would reduce condomless sex in greater magnitude compared to MSM assigned to enhanced standard of care (ESOC) alone. The secondary outcome was to decrease incident STIs. As an initial test of the intervention, the current report describes the outcome data will be used to generate effect size estimates for a fully-powered, definitive trial. Another major goal of this study was to determine the feasibility of the approach and participant acceptability.

METHODS

Trial design

This was a two-arm, pilot randomized controlled trial (RCT) with 1:1 allocation ratio.

Participants

Participants were 96 MSM from Chennai India who were randomized to either the experimental intervention (n=48) or the comparison condition (n=48) (both described below). Figure 1 depicts participant flow throughout the study from screening to randomization to follow-up. Inclusion criteria were being a man who has had condomless anal sex (insertive or receptive) with another man in the 3 months prior to screening, identifying as *Kothi* (in India Kothi are MSM who typically display more effeminate characteristics and are likely to take the receptive role in sex) or *Double-Decker* (in India Double-Decker are MSM who do not necessarily display effeminate characteristics and may have sex with either men or women, and may be either insertive and/or receptive during anal sex), and a resident of Tamil Nadu. Men classified themselves into these identity categories via the demographics questions asked.

Exclusion criteria were being under the age of 18, being unable to complete or understand consent procedures, or identifying as a Panthi (being exclusively insertive and male identified). Panthis, transgendered individuals, *Panthis*, and other MSM identities were not included in the current study, as it was determined in prior formative work that different intervention components may be necessary for these other sexual and gender minority populations. Moreover, kothi and double decker participants had indicated not feeling comfortable being in groups with members of the other subpopulations. Data were collected at the National Institute for Research in Tuberculosis (NIRT, formally the Tuberculosis Research Centre) in Chennai, India.

Interventions

HIV/STI Counseling and Testing—Participants in both study conditions received HIV/STI counseling and testing at baseline and 6-month follow-up plus whatever standard of care they might receive outside of the study. Accordingly, STI testing included chlamydia, gonorrhea testing (rectum and of urine specimens), and serological testing for syphilis. Chlamydia and gonorrhea testing was performed using urine and rectal swab specimens and the AMPLICOR PCR (Roche Molecular Systems, Branchburg, NJ, USA) kit. For syphilis, the Rapid Plasma Reagin (RPR) kit (SPAN Diagnostics, Surat, India) card test was used and all RPR reactive sera were tested for antibody to *Treponema pallidum* by using the *Treponema pallidum* haemagglutination assay (New market Laboratories, Kentford, UK) and confirmed for *T. pallidum* infection. HIV testing was done Retroquic HIV Rapid card test (Qualpro diagnostics, Goa, India). All the reactive samples were tested by HIV Tri dot kit (J. Mitra & Co., New Delhi, India) for confirmation.

Diagnosed STIs were treated free or charged according to the standard of care at the study site, based on national guidelines. Pre-test counseling for HIV and STI prevention included

insuring that persons offered testing were provided with information about HIV and STI transmission routes, prevention methods, and the interpretation of their test results.

Individual pre-test HIV/STI counseling involved discussion of various points from a checklist including self-perception of risks, identification of participants' risky behaviors, negotiation of a risk reduction plan, and potential ways to get support in the event of a diagnosis of HIV or STI. Educational materials (booklets and flyers) were also available. Post-test counseling also involved a specific structure depending on whether results were HIV positive or HIV negative. If indeterminate, this included discussions about the "window period", interpretations of the results, and what they mean in terms of further risk reduction and the need for another test. If HIV positive, this included discussions about the meaning of the test, the difference between HIV and AIDS, the need for a confirmatory test, the impact of the result on the person's life, issues related to disclosure to others, ways of getting support, strategies for maintaining health, how one is going to spend the next hours and days, introductions to staff physicians, and referrals for ongoing care.

The testing was done at government testing facilities referred via the study site. The procedures described above are consistent with India National Aids Control Organization (NACO) guidelines and our own standard operating procedures (SOP)s developed using NIH HIV Prevention Trials Network (HPTN) SOPs as a guideline.

Development of the Experimental Intervention—The experimental intervention was developed based on our formative work for the present project that included community advisory board meetings, key informant interviews, and individual in-depth interviews with members of the population under study. Accordingly, we developed a model of self-acceptance as a key factor in promoting psychological resilience in MSM, as well as asked questions about their acceptability of format and content of the proposed intervention [14,18]. Additionally, prior to this pilot RCT, we conducted an open-pilot of the intervention in one group of MSM and made additional refinements to the intervention based on their exit interview feedback.

Intervention Implementation—In addition to HIV counseling and testing as described above, the intervention consisted of 4 group meetings lasting approximately 90 minutes each, and comprised of 8 MSM each and 4 individual meetings with a trained counselor. The group meetings explored topics related to self-acceptance and followed a general format that involved articulating a specific psychosocial problem, discussion of ways in which participants had overcome or coped with this and related difficulties and formulation of an action plan for each person related to coping with this difficulty. The topics were 1) Introductions and self-acceptance, 2) Safer ways to meet men, 3) Coping with pressures from family and society, and 4) Alcohol and other substances, HIV education and HIV/STI vulnerability, and looking to the future.

The individual sessions allowed for addressing case management needs and for counseling more directly related to personalized risk reduction goals. These included 1) Self-esteem and coming out experience, 2) Sexual risk limits, and sessions 3) and 4) Risk reduction/problem solving.

Training Interventionists—With respect to training the interventionists, the U.S. investigators provided training at the site, in collaboration with the site primary investigator (BT) who has a doctorate in social work and is a trained counselor. Much of the intervention content was developed together, and she was one of the counselors for the groups. Together, we trained, on-site, the peer counselor, who co-facilitated the groups with the local site PI.

Outcomes

Timing and structure of assessments—Participants completed three study assessments of the psychosocial outcomes: 1) at baseline (pre-randomization), 2) post-intervention which was when the intervention was complete for those who were assigned to the experimental condition and approximately 3 months after randomization for those assigned to the comparison group, and 3) 6-month follow-up. Behavioral assessments were done via self-report with the assistance of an interviewer who was blind to intervention condition. At each visit, participants were given 150INR towards transportation expenses, and 100INR for food (approximately \$4.00 total).

Primary Outcome: Sexual risk behavior—Participants were asked about the number of times that they had anal sex in the past three months with male partners by perceived HIV status of the partner (HIV-negative, HIV-unknown, and HIV-positive) and whether or not a condom was used. For the current project, these data were collapsed into number of episodes of any condomless anal sex with male partners. Consideration was given to examining changes in serodiscordant sex, but there were too much missing data on this question due to many participants not reporting (and not knowing) the status of their partners. While we cannot distinguish why they did not report, our prior formative work suggests that MSM in this context rarely know the status of their partners, and therefore might not be able to report it.

Secondary Outcome: Incident Sexually Transmitted Infections—We tested for locally relevant STIs including chlamydia, gonorrhea, and syphilis, as well as HIV. For the current analysis, these data were collapsed to assess a dichotomous measure of any prevalent STI at baseline, and any incident STI at 6-months.

Sample size

The study, a-priori, was not powered for efficacy testing, but rather was designed as an incremental project that would progress to a full-scale efficacy trial. Accordingly, the emphasis was field-testing the overall design for feasibility and looking at group differences with respect to effect size estimates. We sought to have 80 participants with analyzable data, and randomized 96, allowing for 20% attrition.

Randomization

Randomization was done 1:1. After a “batch” of 16 participants were screened and enrolled, a biostatistician randomly assigned 8 to the experimental condition and 8 to the comparison condition using a computerized randomization program at the study site.

Statistical Methods

Means for continuous variables and frequencies for categorical variables were calculated to describe the participants at baseline, overall and stratified by intervention condition. Feasibility of the intervention was assessed by examining attrition for the survey assessment and STI/HIV testing overall and by intervention condition. Additionally, among those who were assigned to the experimental condition, attendance at the individual and group sessions were examined.

While this pilot study was not powered to examine changes in the condomless sex outcomes, we assessed the impact of the intervention on changes in number of distinct condomless anal sex acts over the course of the 6-month follow-up period. Because number of condomless anal sex acts is count data and was not normally distributed, we estimated mean counts to examine differences by intervention condition using a mixed-effects model (PROC GLIMMIX in SAS v9.3), specifying a Poisson distribution and log link with a random intercept and slope for month of follow up (baseline, 3 or 6). Additionally, in post-hoc analyses, we used contrasts to examine differences in the change in mean condomless anal sex acts at each time point (baseline, 3 months and 6 months) separately.

RESULTS

Participant characteristics are described in Table I. In brief, the mean age was 29.0 (SD=7.5). Two-thirds identified as Kothi (vs. Double-decker), and most were never married (93%) and had no children (92%). A majority of participants identified as Hindu (77%), however a sizeable minority identified as Christian (17%) or Muslim (6%). Overall, education was low (64% had completed secondary school or less); however, 62% reported being employed full-time. At baseline, participants reported having 28.3 (SD=32.3) condomless anal sex acts in the past 3 months.

At baseline, 8 participants (8.3%) tested positive for HIV. Additionally, at baseline, 20% of participants tested positive for at least one STI.

There were no significant differences in baseline characteristics by intervention condition, with the exception of marital status, where a larger percentage of participants assigned to the intervention condition were never married (98%) compared to the control condition (88%). Although the conditions were not balanced on marital status, because this was a feasibility trial, we proceeded with analyzing the data without additional covariates for parsimony.

Intervention Retention

Overall, there was high retention for follow up. Of the 96 randomized, 78 (81.3%) completed a 3-month assessment, and 84 (87.5%) completed a 6-month assessment (Table II). Retention did not differ by intervention condition ($\chi^2=0.143$, 2 *df*, $p=0.931$). Similarly, 82 (85.4%) completed the STI/HIV testing at 6-month follow up, with no significant differences by intervention condition ($\chi^2=0.026$, 1 *df*, $p=0.871$).

Attendance at the intervention condition group and individual sessions was moderate (Table II). Among the 48 participants that were randomized to the intervention condition, the

average overall attendance was 76.3%, the average for the group, 76.0%, and for the individual sessions, 76.5%. Six (12.5%) attended no sessions, 2 (4.2%) attended one group session, 2 (4.2%) attended two group sessions, 12 (25.0%) attended three group sessions, and 26 (54.2%) attended all four group sessions. Similarly, 2 (4.2%) attended one individual session, 2 (4.2%) attended two individual sessions, 11 (22.9%) attended three individual sessions, and 27 (56.3%) attended all four individual sessions. All available data were used in analyses regardless of the number of sessions a participant attended.

Pilot Efficacy

Number of unprotected anal sex acts—In addition to examining feasibility, an aim of this study was to examine the impact of the intervention on the number of reported unprotected anal sex acts in the past 3 months at each assessment time point. Results are summarized in Table III.

At baseline there were not statistically significant differences in number of condomless sex acts across the two conditions (Est.= 0.23, 95% CI -0.18, 0.65, $t=1.10$, 68 *df*, $p=0.275$). On average, participants saw a significant decline in number of condomless anal sex acts over the 6 months of follow up as evidenced by the main effect for time ($F=44.65$, 2/68 *df*, $p<0.0001$).

There was a significant condition by time interaction, suggesting a difference in the rate of change in number of condomless sex acts in the intervention versus the comparison condition ($F=45.55$, 2/68 *df*, $p<0.0001$). More specifically, between baseline and 3-month follow up, the intervention group had a significantly larger decline in condomless anal sex acts as compared to the control group (Est.= -0.95, 95% CI -1.47, -0.44, $t=-3.62$, 68 *df*, $p=0.0006$); however between baseline and 6-month follow up, there was a no difference in the rate of change by condition (Est.= 0.39, 95% CI -0.61, 1.38, $t=0.76$, 68 *df*, $p=0.451$), suggesting an attenuation of the early differences between the intervention and comparison condition between 3- and 6-month follow up.

To better describe these changes, we performed a series of post-hoc analyses using contrasts. There were no significant differences in number of condomless anal sex acts at baseline ($t=1.10$, 68 *df*, $p=0.275$) or at 6-month follow up ($t=1.32$, 68 *df*, $p=0.193$) by condition; however, at 3-month follow up, the intervention group had significantly fewer condomless anal sex acts than the control group ($t=-2.70$, 68 *df*, $p=0.009$) (IV).

STI outcomes—As reported above, at baseline, 19 participants (20.0% prevalence) tested positive for an STI. At 6-month follow up, there were also 19 participants (23.2% incidence among those tested) who tested positive for an STI. At follow up, 28.6% of the control condition and 17.5% of the intervention condition (> 60% fewer participants in the intervention versus the comparison condition) tested positive for any STI. However, this difference was not statistically significant ($X^2=1.39$, 1 *df*, $p=0.239$).

There were no incident HIV infections throughout the course of the study among those who tested at their 6 month visit.

DISCUSSION

Consistent with research in the U.S. on syndemics affecting sexual risk in MSM [16,17], our prior work revealed that sexual risk (in this case, condomless sex) for MSM in India occurs in the context of significant and interconnected psychosocial problems [11,14,19]. While MSM prevention programs in India exist, they are generally limited to condom distribution and educational outreach [20]. The present study was an initial pilot RCT of a culturally-tailored intervention to reduce HIV and STI risk in MSM in India, with the goal of promoting both sexual and psychosocial health in this population. We found the intervention feasible to deliver, acceptable to participants, and potentially effective with respect to reducing condomless sex (risk for HIV and STI); though the overall intervention effect appeared to be due to differences at the 3-month outcome. Following a sequential approach to intervention development and testing, as an initial trial, the sample size was small, however, and therefore further efficacy testing is needed to have a more accurate estimate of the effect and have sufficient power to establish statistical significance. It may be important, in a future study, to consider booster sessions to extend the effects of the intervention once it is complete.

For the analysis of condomless sex, while the overall analysis that included all three time points showed significant differences with respect to intervention versus control group changes, post-hoc analyses suggested that the difference was due to the effect at the 3-month assessment, and both groups reported reduction in condomless sex over time by the 6-month assessment. There are several possible explanations for this pattern of results. First, with respect to condomless sex, it is possible that both groups benefitted from the risk reduction counseling that occurred in both conditions, and that we did not see an effect for the control group until the 6-month assessment, after they would have had two major study visits. In this scenario, the experimental intervention condition would have evidenced faster improvements than the ESOC. Second, although not significant, the magnitude of the mean difference between the two groups on STI incidence at the 6-month assessment (28.6% vs 17.5%) and lack of difference in self-report condomless sex behavior may suggest that social desirability bias might have led to decreased self-report of condomless sex. Due to administrative constraints of this pilot project, participants reported their sexual risk via structured interview with an interviewer and not via audio computer-assisted self-interviewing (ACASI). Given that ACASI has generally shown to be superior to self-report to elicit more complete information about sensitive topics such as sexual risk [21,22], it would be important for a future trial to consider an ACASI system for the measurement of sexual risk behavior. That said, there is some question about the incremental validity of the use of ACASI for data collection in India [23]. Third, it is possible that this intervention does not have an effect beyond effects of assessments and standard of care, and an adequately powered efficacy study would be able to answer this question, as effect sizes from pilot studies can be unreliable. Although session attendance overall was moderate (approximately 76% for overall, for individual, and for group sessions), there was room for improvement here, and the diluted effect for the intervention could be related to some participants not receiving the full dose of the intervention. Finally, STI testing was done at 6-months and not the 3-month assessment, and therefore we do not know if the STIs

happened more so at the first or last half of this time period, which would allow for better validation of the self-report sexual risk outcomes.

Despite the limitations, this is the first study in India, which has one of the largest populations of MSM in the world, to demonstrate feasibility of an intervention that is designed to reduce sexual risk (in this case, condomless sex) via promoting both sexual health and resilience to the unique psychosocial stressors for this population. The social-contextual situation in India facing MSM is a complicated one, certainly putting these MSM at high risk for stigma, isolation, and a number of sexual minority stressors. At the start of the study, section 377 of the Indian Penal Code (the law making homosexual acts illegal) had temporarily been suspended by a Delhi High court, but, at the time of writeup, this law was upheld (December 2013) by the India Supreme Court, making homosexual acts illegal once again. Accordingly, there may be additional challenges to HIV prevention counseling for MSM in India if they are not comfortable admitting to this behavior to counselors, because the behavior is now illegal again in this setting. Taken together, the findings do suggest that further efficacy testing is needed for this type of intervention, with improved measures for collecting sexual risk data and a fully powered design to detect differences in incident STIs.

Acknowledgments

Funding from this project is from a joint Indo-U.S. mechanism. Accordingly, grant NIMH R-21 MH085314 was awarded to Dr. Steven Safren from the National Institute of Mental Health (NIMH) and Dr. Beena Thomas was awarded a grant from the India Council of Medical Research (ICMR). Dr. Safren was also supported by grant 5K24MH094214 with respect to investigator time after the R21 funding ended. We would like to thank Jocelyn Remmert for helping prepare the manuscript for submission, and Dr. C. Andres Bedoya for writing the Resumen. We would also like to thank the study participants, and the staff of Sahodaran for their contribution to the project.

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Figure I. Participant Flow

Note: there were no study-related adverse events in either condition

Table 1

Baseline characteristics of participants in RCT trial (N=96)

	Overall	Intervention	Control	Test statistic*	p-value
		Mean (SD)			
Age	29.0 (7.5)	28.4 (6.9)	29.7 (8.1)	0.88 (94 df)	0.381
Number of unprotected anal sex acts, past 3 months	28.3 (32.3)	33.2 (40.8)	23.3 (19.5)	-1.50 (93 df)	0.136
		N (%)			
Sexual Orientation				0.89 (1 df)	0.346
Kothi	72 (75.0)	38 (79.2)	34 (70.8)		
Double-decker	24 (25.0)	10 (20.8)	14 (29.2)		
Marital Status				7.28 (2 df)	0.026
Never married	89 (92.7)	47 (97.9)	42 (87.5)		
Married to a woman	6 (6.3)	0 (0.0)	6 (12.5)		
Widowed	1 (1.0)	1 (2.1)	0 (0.0)		
Have Any Children				2.18 (1 df)	0.140
Yes	8 (8.3)	46 (95.8)	42 (87.5)		
No	88 (91.7)	2 (4.2)	6 (12.5)		
Religion				1.13 (2 df)	0.568
Hindu	74 (77.1)	35 (72.9)	39 (52.7)		
Muslim	6 (6.2)	4 (8.3)	2 (4.2)		
Christian	16 (16.7)	9 (18.8)	7 (14.6)		
Education Completed				1.21 (2 df)	0.545
Secondary or Less	61 (63.5)	28 (58.3)	33 (68.8)		
High Secondary	13 (13.5)	7 (14.6)	6 (12.5)		
College or more	22 (22.9)	13 (27.1)	9 (18.7)		
Employment Status				1.50 (3 df)	0.683
Employed Full-time	59 (61.5)	30 (62.5)	29 (60.4)		
Employed Part-time	14 (14.6)	6 (12.5)	8 (16.7)		
Unemployed	17 (17.7)	10 (20.8)	7 (14.6)		

	Overall	Intervention	Control	Test statistic*	p-value
Other	6 (6.2)	2 (4.2)	4 (8.3)		
Positive test for any STI				0.07 (1 df)	0.798
Yes	19 (19.8)	9 (19.7)	10 (20.8)		
No	77 (80.2)	39 (81.3)	38 (79.2)		

* Test statistics were as follows: t tests for continuous measures and chi-square test for categorical measures.

SD=Standard Deviation

STI=Sexually Transmitted Infection

Table II
Retention of Participants for Assessments (N=96) and for Intervention Sessions (N=48)

	Behavioral Assessment N (%)			HIV/STI testing N (%)		
	Total	Intervention	Control	Total	Intervention	Control
Baseline	96	48	48	96	48	48
3-Month	78 (81.3%)	37 (77.1%)	41 (85.4%)		--	
6-Month	84 (87.5%)	42 (87.5%)	42 (87.5%)	82 (85.4%)	40 (83.3%)	42 (87%.5)

Group Session		Individual Session	
0 Sessions	6 (12.5%)	6 (12.5%)	
1 Session	2 (4.2%)	2 (4.2%)	
2 Sessions	2 (4.2%)	2 (4.2%)	
3 Sessions	12 (25.0%)	11 (22.9%)	
4 Sessions	26 (54.2%)	27 (56.3%)	

HIV=Human Immunodeficiency Virus
STI=Sexually Transmitted Infection

Table III

Effect of intervention on number of unprotected anal sex acts over follow up, mixed effects Poisson regression (N=96)

	Estimate [*]	95% CI	Test statistic	p-value
Intercept	2.77	2.47, 3.06	18.35 (94 <i>df</i>)	<0.0001
Condition				
Intervention	0.23	-0.18, 0.65	1.10 (68 <i>df</i>)	0.275
Control	0	--		--
Time			44.65 (2/68 <i>df</i>)	<0.0001
Baseline	0	--		--
3 month	-0.74	-1.09, -0.39	-4.18 (68 <i>df</i>)	<0.0001
6 month	-2.52	-3.20, -1.83	-7.17 (68 <i>df</i>)	<0.0001
Condition * Time			45.55 (2/68 <i>df</i>)	<0.0001
Intervention * Baseline	0	--		--
Intervention * 3 month	-0.95	-1.47, -0.44	-3.62 (68 <i>df</i>)	0.0006
Intervention * 6 month	0.39	-0.61, 1.38	0.76 (68 <i>df</i>)	0.451
Control * Baseline	0	--		--
Control * 3 month	0	--		--
Control * 6 month	0	--		--

* Estimate=log(IRR)

** Test statistics were as follows: t tests for individual tests of the coefficients and f tests for type III tests (i.e., overall Time and Condition*Time terms).

CI= Confidence Interval

Table IVAdjusted Mean (SE) Baseline and Follow-up Number of Unprotected Anal Sex Acts ^{*} by Study Condition.

	Baseline	Month 3	Month 6
Intervention	20.13 (3.02)	3.69 (0.73)	2.39 (0.82)
Control	15.94 (2.40)	7.58 (1.36)	1.29 (0.42)
Test statistic ^{**}	1.10 (68 <i>df</i>)	-2.70 (68 <i>df</i>)	1.32 (68 <i>df</i>)
p-value	0.275	0.009	0.193

^{*} Number of UAS acts (and standard errors) are estimated through Poisson regression and adjusted through the use of mixed effects analyses.

^{**} t-value for difference in adjusted means

SE=Standard Error