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The Relationship of Internalized Homonegativity to Unsafe Sexual Behavior in HIV Seropositive Men who have Sex with Men

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Abstract

We studied internalized homonegativity (IH) in 675 HIV-positive MSM from six epicenters across the US who attended an HIV prevention workshop. Participants included 300 African American and over 150 Hispanic White and White Non-Hispanic men. Higher IH was significantly associated with African American race. Compulsive sexual behavior, openness as MSM, sexual comfort, depression, education level, and importance of religion also were associated with IH, and independently predicted a third of this outcome's variance. For those with higher IH, two significant paths led to unsafe sexual behavior. First, to serodiscordant unprotected anal intercourse (SDUAI) through being less “out” – thus disclosing serostatus to secondary partners less frequently. Second, to lower condom self-efficacy and SDUAI through lower sexual comfort. These data provide information on the demographic, sexual and mental health variables associated with IH. They offer an indication of the paths through which IH is associated with serodiscordant risk behavior in HIV-positive MSM.

Keywords

homonegativity; homophobia; men who have sex with men; HIV; sexual risk

Background

The concept of internalized homonegativity (IH), also known as internalized homophobia (the internal reaction to stigma associated with being homosexual), was described by Weinberg (1973) as socially-induced revulsion and hostility towards one's own homosexuality and things homosexual. While Herek (1984 1996) among others has studied homonegativity in the general population, and Comstock (1991) perpetrators of anti-gay violence, a gap existed in the study of homonegativity internalized by gay, bisexual and other men who have sex with men. To advance the study of internalized homonegativity, Ross and Rosser (1996) developed a 26-item Reactions to Homosexuality scale for Men who have Sex with Men (MSM), and demonstrated that internalized homonegativity consists of four components: concern about public identification as gay, perception of stigma associated with being homosexual, social

comfort with gay men, and moral and religious acceptability of being gay. Ross and Rosser found high scores on these dimensions significantly associated with relationship satisfaction and length, level of attraction to men and women, and lower social time with other homosexual people. HIV seropositive respondents scored significantly lower on public identification as gay and social comfort with gay men.

This association between IH and HIV status was explored by Ross et al. (2001), who found no direct link between this and HIV risk behavior. However, they found an association between the IH subscale measuring discomfort with other gay men and hard drug use (amphetamines, cocaine, opiates) in the past 3 months. Drug use was in turn associated with unsafe sexual activity (unprotected anal intercourse outside of an HIV seroconcordant monogamous relationship). This study sample was composed of predominantly HIV seronegative (92%) men who have sex with men (MSM). Consistent with these data, Yoshikawa, Wilson, Chae, and Cheng (2004) reported that discrimination, on racial grounds, immigration status and homophobia, increased depressive symptoms in Asian/Pacific Islander MSM and were associated with high rates of unprotected anal intercourse with secondary partners.

Ramirez-Valles (2002) argued that community involvement moderates the association between socio-structural risk factors such as poverty, homophobia and racism. However, because IH may be associated with discomfort with social interaction with other gay people, IH may block such community involvement and thus maintain sexual risk behavior (Robinson, Bockting, Rosser, Miner, & Coleman, 2002). There has also been continued speculation regarding the role of IH in HIV risk behavior in MSM, and specifically whether its role is mediated through drug and alcohol use and other variables (Ross et al., 2001). We carried out an analysis of the relationships between IH and serodiscordant unprotected anal intercourse in a large sample of HIV seropositive MSM as part of the Positive Connections study in six major US cities.

Method

Participants

Positive Connections is a randomized controlled trial that tested the efficacy of sexual health interventions in preventing unsafe sex among 675 HIV-positive MSM in 6 US epicenters. These weekend-long seminars were “Positive Sexual Health”, tailored specifically for HIV-positive MSM, and “Man-to-Man”, designed for all MSM. Both intervention arms consisted of 14-16 hours of large and small group activities. “Men Speaking Out” was the contrast arm and consisted of three hours of HIV prevention videos. Immediate post-test surveys evaluated sexual health and intentions to practice safer sex. Baseline, 6-, 12- and 18-month follow-up surveys assessed the incidence of serodiscordant unprotected anal intercourse (SDUAI).

The sample includes 675 participants from Seattle ($n=114$, 17%), Washington, D.C. ($n=71$, 11%), Boston, ($n=64$, 9%), New York ($n=177$, 26%), Los Angeles ($n=146$, 22%), and Houston ($n=103$, 15%). All participants were HIV positive; about one-third of the sample was diagnosed with HIV between 1979 and 1991, while another one-third was diagnosed between 1992 and 1997. The participants had an average CD-4 count at their last check-up of 497 (sd = 644.6; range 0 – 14,000) and an average viral load of 43,955.3 (sd = 161,891; range 0 – 1,800,000).

Recruitment

Participants were recruited and screened for eligibility by the six partnering community-based organizations (CBOs) in each city that have a history of work with people living with HIV and productive research collaborations. These agencies were Gay City Health Project, Seattle, WA; Whitman Walker Clinic, Washington, DC; Fenway Community Health Center, Boston, MA; Gay Men's Health Crisis, New York, NY; AIDS Project Los Angeles, Los Angeles, CA; and

Legacy Community Health Services, Houston, TX. Recruitment began by adapting the overall recruitment protocol to fit the specific needs and demographics of each city. City specific recruitment plans were created in collaboration between the CBO's recruitment team and the University of Minnesota staff, which detailed all aspects of recruitment, subject screening, advertising materials, outreach personnel and the target numbers of participants to be registered. All six cities implemented the following recruitment strategies: (1) CBO personnel distributed informational brochures and flyers, which described the study and asked participants to call local recruitment staff for information and registration, to local gay venues including, bars, cafes, community centers, and at GLBT events. The recruitment message advertised a "research study evaluating new sexual health seminars for MSM". It indicated that all subjects could earn \$100 for attending a two-day seminar on the assigned weekend and an additional \$100 for completing all three follow-up surveys. (2) CBO recruitment teams collaborated internally by having their agencies social workers, mental health professionals, physicians, other HIV care providers give their clients an overview of the study and refer interested men to the registration phone number. (3) To extend recruitment beyond the partnering CBO in each city, informational luncheons were held to inform and collaborate with HIV care providers from other CBOs in each community.

Each CBO implemented additional recruitment strategies that were specific to reaching HIV-positive MSM from distinctive regional communities. In Seattle, Gay City focused on working with LGBT agencies who serve people of color in order to meet the goal of recruiting over 50% MSM of color. In Washington DC, Whitman Walker Clinic (WWC) prioritized recruiting from within the agency because they serve one of the largest HIV-positive communities in the nation. They also advertised on their agency's website and recruited a high number of men because of the heavy internet traffic that WWC's home page gets everyday. Fenway Community Health Center in Boston utilized the internet to recruit participants. They posted blogs and participated in discussions in chat rooms on popular MSM meeting sites like manhunt.com and gay.com (popular MSM sites, primarily used to meet other MSM for sexual activity) to get information about the study out to the public. Gay Men's Health Crisis in New York was able to recruit a younger demographic of men because the gay newspapers and magazines they advertised in had a high circulation among younger HIV-positive MSM. AIDS Project Los Angeles recruited men by posting an advertisement on Craig's List and other free internet sites. In Houston, Legacy Community Health Services utilized an in-house recruitment team, consisting of seven members, to recruit men face-to-face at gay bars, LGBT events, and inside their clinic.

Procedures

The data presented in this paper are pre-test data collected between January 2005 and April 2006. The pre-test was completed prior to participants' assignment to intervention condition. Data were collected in a group setting in a large room set up with tables and 120-150 chairs. Research staff was available to aid participants with problems reading or understanding questions. If participants did not speak any English, they were excluded from the study at that point. All instruments were self-report inventories and required approximately 20-25 minutes for completion. Participants were discouraged from talking with one another during data collection, although there were no attempts to separate participants from one another.

Measures

Data were collected through self-report. The instrument consisted of short scales where possible, with certain constructs measured with individual items.

Internalized Homonegativity (Bell & Weinberg, 1978)—This is a 4-item, seven-point Likert-types scale that measures participants' acceptance of negative views about their own homosexuality. The items were:

- Sometimes I dislike myself for being gay/bisexual/attracted to men
- I feel stress and conflicted within myself over having sex with men
- Sometimes I wish I were not gay/bisexual/attracted to men
- I sometimes feel guilty after having sex with men

The variable was categorized into tertiles to better fit the overall distribution. Scores range from 4 to 28, with a higher value indicating more internalized homonegativity. The distribution of this variable was heavily skewed towards the lower scores in the pre-test questionnaire: the median values and quartile ranges were 7 [4, 14] for the contrast condition; 7 [4, 13.5] for the Man-to-Man condition; and 7 [4, 12] for the Positive Sexual Health condition. The three distributions did not differ significantly. This result seems to indicate that participants had a fairly positive attitude towards their sexuality even before the intervention. The reliability in this sample was $\alpha=.88$.

Self Assessment—This is a single item that asks the participant about their sexual orientation. This measure was dichotomized as gay/same gender loving and bisexual/heterosexual.

Sexual Comfort (Marin, Gomez, Tschann, & Gregorich, 1997)—This is a six-item, four-point Likert-type scale ranging from 6 to 24. It measures comfort with sexuality and one's body. High scores indicate more sexual comfort. The reliability in this sample was $\alpha=.83$.

Compulsive Sexual Behavior Inventory (Coleman, Miner, Ohlerking, & Raymond, 2001)—This is a five-point Likert-type scale that includes the 13-item Control subscale drawn from the CSBI (Coleman et al., 2001). It consists of items that measure a sense of lack of control over one's sexual behavior. Scores range from 13 to 65, with higher scores indicating more lack of control over sexual behavior. The reliability in this sample was $\alpha=.92$.

Alcohol Use (Crosby, Stall, Paul, Barrett, & Midanik, 1996)—Alcohol consumption is measured with two items. One measures alcohol consumption (8 points ranging from “never” to “at least once a day”), and the other records how many drinks a participant consumes when he drinks. An additional item asks participants whether they believe they have an alcohol problem – either currently or in the past.

Drug Use (Crosby et al., 1996)—Drug use was measured using an 8-point item that ranged from “never” to “at least once a day”. It asked participants how often they use different drugs (marijuana, cocaine, LSD, barbiturates, methamphetamine, club drugs, opiates, and Viagra). Two additional items asked how often participant injected drugs and how often they shared needles when injecting drugs.

Mental Health (Derogatis, Rickels, & Rock, 1976)—This five-point Likert-type scale consisted of 12 items drawn from the Depression and Anxiety subscales of the Brief Symptom Inventory. These items measured depression symptoms and anxiety symptoms using a Likert-type format. Scores ranged from 12 to 60, with higher scores indicating more depression (e.g., feeling blue) and/or anxiety (e.g., nervousness or shakiness inside). The reliability in this sample was $\alpha=.93$.

Social Support (Zimet, Dahlem, Zimet, & Farley, 1988)—This is a six-item, five-point Likert-type scale that measures the amount of support that participants receive from their social environment. Items ask about friends and about a “special person” (e.g., there is a special person who is around when I am in need). Scores range from 6 to 30, with higher scores indicating more social supports. The reliability in this sample was $\alpha=91$.

Condom Self Efficacy (Marin et al., 1997)—This is a 15-item, five-point Likert-type scale that measures Bandura's (1982) concept of self-efficacy with respect to using condoms in multiple situations and settings (e.g., can you use a condom regularly even if a partner might think less of you?). Scores ranged from 15 to 75, with higher scores indicating more self-efficacy. The reliability in this sample was $\alpha=.95$.

Unsafe sex measures—To assess serodisclosure, participants indicated whether they had disclosed to their primary partner. They also reported the number of secondary sexual partners in the last three months and to how many of these they had disclosed their HIV-positive serostatus. In response to the bimodal distribution of these data, we created a 3-level categorical variable indicating disclosure to None, Some, or All secondary partners. Serodiscordant unprotected anal intercourse (SDUAI) was defined as any unprotected anal sex with a serodiscordant male during the last three months. After summing UAI with partners of unknown or negative serostatus, this count was dichotomized into no SDUAI, and at least one incident of SDUAI.

Analysis

Analyses were carried out on IH, how “out” the respondent is as MSM, sexual comfort scale, and the three predictors: serodisclosure to secondary partners, number of secondary partners, and condom self-efficacy. Multiple linear regression analyses to determine the variables that had significant independent paths to their dependent variable were initially computed to allow assessment of independence of association, because of this statistic's robustness in the face of non-normal distributions. Subsequently, because of skewed distributions, all variables showing independent associations were recoded as tertiles or quartiles as appropriate, and gamma coefficients (γ) were computed for independent paths and appear in Figure 1. Gamma coefficients provide similar results to Spearman rank-difference correlation coefficients but are preferable for data in which there are a significant number of tied ranks, as in these recoded data.

Bivariate analyses were carried out using χ^2 analyses (with Yates correction for discontinuity where appropriate) for nominal or ordinal scale data, and one-way Anova (with Scheffé tests for post-hoc comparisons) for continuous data. Multiple linear regressions used simultaneous entry for independent variables. All analyses were carried out using SPSS version 15 and all tests used a 5% two-tailed significance level.

Results

Demographics of the sample of HIV-seropositive MSM appear in Table 1. The sample has a median age of 42 and nearly half is composed of African American men, with the remaining half composed largely of Hispanic White and White Non-Hispanic men. Four out of ten had a high school education or less (median income approximately \$10,000), with 80% self-identifying as gay and most of the remainder as bisexual. Three quarters reported taking antiretroviral medication. This sample is thus low SES, ethnically diverse and primarily gay MSM.

Data from the path analyses are presented in Figure 1. These data indicate that the impact of internalized homonegativity on the outcome variable of serodiscordant unprotected anal

intercourse in this sample occurs through the mechanism of serodisclosure to secondary partners, which is in turn determined by a number of variables, the independently most significant of which is being “out” as a MSM. This in turn is strongly predicted by internalized homonegativity. There is a second pathway of internalized homonegativity to serodiscordant unprotected anal intercourse, through condom self-efficacy, with respondents with higher internalized homonegativity showing lower condom self-efficacy. A pathway from internalized homonegativity to serodisclosure to secondary partners disappears when both internalized homonegativity *and* being “out” as MSM were regressed on serodisclosure to secondary partners, indicating that the strength of the effect is primarily through being “out” as MSM.

Table 2 illustrates the results of bivariate analysis of variables associated with internalized homonegativity. Variables not significant included city ($\chi^2=12.35$, $df=10$, $p=.26$); employment status ($\chi^2=6.27$, $df=4$, $p=.18$); and income by quartiles ($\chi^2=2.87$, $df=6$, $p=.83$). None of the drug and alcohol variables showed significant interactions by internalized homonegativity and are not included.

Table 3 illustrates the regression predicting internalized homonegativity from demographic and health-related scale characteristics. Variables significantly and independently associated with internalized homonegativity included openness as MSM, sexual comfort, the Compulsive Sexual behavior “control” subscale, the Beck depression inventory (short form) score, and the importance of religion to the respondent. Together, these predicted 33% of the variance.

Discussion

These data come from one of the largest and most geographically diverse samples of HIV-seropositive MSM in the U.S. These data follow from our initial analysis (Rosser et al., submitted for publication) of predictors of risk of SDUAI, specifically HIV serodisclosure to secondary partners, condom self-efficacy, and number of secondary partners (the variables on the right of Figure 1). The present study has examined the paths leading to these predictors, and specifically the positioning of internalized homonegativity in the chain of predictors. As these data are cross-sectional, we cannot imply causation, however, in these paths.

The data in the Figure suggest that internalized homonegativity, while not being directly implicated in the path to SDUAI, is implicated at two levels. First, IH has a strong association with not being “out” as MSM, which in turn is a strong predictor of lack of serodisclosure to secondary partners. IH also had a secondary significant path directly to serodisclosure which disappears when both IH and being “out” as MSM were regressed on serodisclosure to secondary partners, suggesting that the primary path is through being “out” as MSM (primary paths expressed as gamma coefficients only are shown in the Figure). Second, there is also a significant association between IH and lower condom self-efficacy, through the intervening variable of sexual comfort. These data appear to confirm the previously hypothesized role of IH as a precursor to unsafe sexual behavior in MSM, and more specifically indicate where in the schema of antecedent conditions IH may be situated and what pathways it may act through. It is of particular interest that IH appears to act through two separate pathways to unsafe serodiscordant anal intercourse: through lack of disclosure about HIV serostatus to casual partners, and through lower condom self-efficacy, mediated by degree of being “out” as MSM, and comfort with sex, respectively. Contrary to Ross et al.'s (2001?) previous data on HIV seronegative MSM, drug and alcohol use did not appear to be significantly associated with sexual risk behavior in this sample. However, being HIV seropositive may have modified drug and alcohol use, at least in this sample recruited into an intervention, as a high percentage (75%) were on antiretroviral medications. Further research needs to be conducted to better

understand drug and alcohol use's differing relationship to sexual risk behaviors in seronegative and seropositive MSM.

The opportunity to gain some further understanding of IH is also provided by these data, albeit limited to HIV-positive MSM. Table 2 illustrates the covariates that are significantly associated with IH. As predicted by previous studies, those with lower education have higher IH, and there were significant racial/ethnic associations with IH. The racial/ethnic data indicate that the distribution of IH was highest (positively skewed) in the African American sample, lowest (negatively skewed) in the White non-Hispanic sample, and intermediate in the Hispanic White and "other" sample, confirming anecdotal evidence about high rates of IH in the African American community. Further, data also indicate that IH is higher in bisexually-identified MSM compared with those who identify as gay. This is consistent with studies that have suggested that in some cases, bisexual orientation may be seen as less socially stigmatizing. However, the higher rate of IH in bisexually-identified MSM suggests a greater degree of personal stigmatization compared to gay-identified MSM. Greater comfort with sexuality and one's body was found to relate to lower levels of IH. These data suggest that IH may be an important link in understanding gay men's higher rates of body dissatisfaction, eating disorders, eating-disordered behaviors, and insecure body image compared to their straight male counterparts (Kimmel, & Mahalik, 2005). However, further research needs to be conducted to generalize this finding to seronegative MSM. Unsurprisingly, being "out" as MSM, comfort with sexual orientation, openness about being HIV seropositive, and estimation of sexual health are all associated with IH in the direction of greater openness and comfort being associated with lower IH. Regressions where IH is the dependent variable (Table 3) showed that a third of the variance could be predicted by six variables: education level, openness as MSM, sexual comfort score, compulsive sexual behavior (degree of control), importance of religion in one's life today, and mental health (Beck Depression Scale scores). The most homonegative respondents were less educated and judged religion to be more important in their life today. They were also likely to be less open as MSM, less comfortable with sex, to have less control over their sexual behavior which had compulsive features, and significantly more unhappy and depressed.

These data are useful in understanding the links, through intervening variables, between IH and sexual risk behavior. However, there are limitations: this is a convenience sample based on recruitment into a risk reduction seminar study and thus its representativeness and generalizability of the larger community of HIV positive MSM are unknown. Our previously published data from the Positive Connections study (Rosser et al., in press) demonstrated that three variables (lack of disclosure to casual serodiscordant partners; lack of condom self-efficacy; and number of secondary partners) independently predicted serodiscordant unprotected anal intercourse in MSM. Adding IH into this model demonstrates that it influences two of these three predictors through mediating variables. For lack of disclosure to casual serodiscordant partners, IH is strongly and significantly mediated by not being "out" as MSM. For lack of condom self-efficacy, IH is strongly and significantly mediated by low levels of sexual comfort.

An additional limitation is the group setting in which the data were collected. Although participants were discouraged from talking with one another, it is possible that some of the answers were influenced by those of other respondents sitting in close proximity. Future studies should consider ways to avoid this potential spillage effect.

Strong additional independent associations with IH included education, importance of religion, lack of control of sexual behavior, and higher levels of depression, the latter most likely being a result of IH, rather than a precursor. Depression was not independently associated with the pathways from IH through to risky sexual behavior. For HIV seropositive men at least, these

data do implicate IH in risk behavior and suggest that its modification may be a useful adjunct to sexual risk reduction programs.

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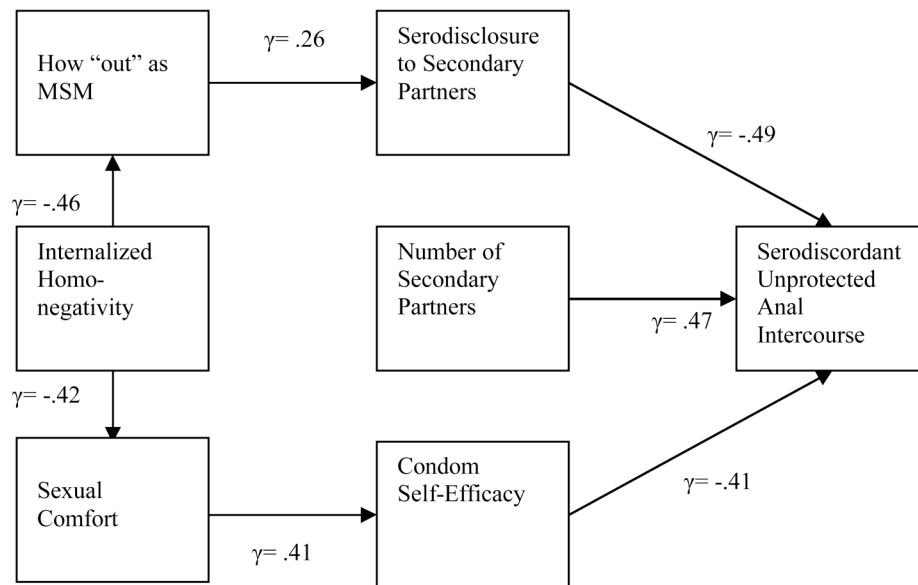


Figure 1.
 Paths from internalized homonegativity to unsafe sexual behavior
 All γ coefficients $p < .001$

Table 1

Demographics

	Median	Interquartile Range
Age	42	37-48
Annual Income	\$10,080	\$6,000-\$22,000
Year of Diagnosis	1995	1990-2000
CD4 Count	428	259-618
Viral Load	2800	170-22,000
	N	%
Race/Ethnicity		
African American	300	45
Caucasian	168	25
Hispanic	157	23
Other	44	7
Education		
High school or less	268	40
Some college	253	38
Bachelor's degree or more	152	23
Sexual orientation		
Gay	528	80
Bisexual	110	17
Heterosexual, straight, other	22	3
Taking Antiretroviral Medication	492	75

Table 2

Bivariate associations between internalized homonegativity and demographic and health variables (N=668).

Variable	Low IH	Med IH	High IH	Sig
Sexual comfort scale ^a				
median (p25, p75):	23 (21,24)	21 (19,23)	20 (17,23)	.000
Compulsive sexual behavior ^b				
median (p25,p75):	19 (15,27)	25 (20,32)	34 (25,42)	.000
Social support ^c				
median (p25,p75):	24 (19,30)	23 (18,28)	21 (14,26)	.000
Race/Ethnicity (%):				
White, non-Hispanic	44.0	32.7	23.2	
Other	34.9	34.9	30.2	
African American	30.1	29.7	40.2	
Hispanic White	37.4	32.3	30.3	.011
Sexual orientation (%):				
Gay	40.4	32.2	27.4	
Bisexual	16.3	31.0	52.7	.000
Education level (%):				
High school	29.4	29.0	41.6	
College	36.4	34.9	28.7	
Graduate school	54.6	27.3	18.2	.000
How open as MSM (%):				
Low	18.0	24.4	57.6	
Medium	25.6	40.0	34.4	
High	52.6	30.2	17.2	.000
Comfort with sexual orientation (%):				
Low	37.7	29.3	33.0	
Medium	9.4	28.1	62.6	
High	45.5	35.7	18.8	.000
How open as HIV positive (%):				
Low	26.7	33.0	40.3	
Medium	33.5	36.8	29.7	
High	51.1	25.0	23.9	.000
Estimation of sexual health (%):				
Low	25.0	28.8	46.2	
Medium	32.8	39.3	28.0	
High	55.4	21.6	23.0	.000
Importance of religion today (%):				
Low	43.3	33.7	23.0	
Medium	31.4	33.3	35.2	
High	33.0	29.6	37.4	.012

^aPossible range 6 to 24, higher levels indicating greater sexual comfort

^bControl Subscale; possible range 13 to 65, higher levels indicating greater compulsive sexual behavior

^cPossible range 6 to 30, higher levels indicating greater social support

Table 3

Linear regression model showing the relationship of demographic and health characteristics to internalized homonegativity in HIV-seropositive MSM (N=565)

Variable	Beta	<i>t</i>	Sig
Compulsive sexual behavior (control subscale)	.33	8.15	.00
How open as MSM	-.27	-7.23	.00
Sexual comfort scale score	-.13	-0.58	.00
Beck Depression Inventory (short form)	.09	2.27	.02
Education	-.08	-2.07	.04
Importance of religion in life today	.06	1.69	.07

R=.58, AdjR²=.33, F=45.37, df=6, p=.00.