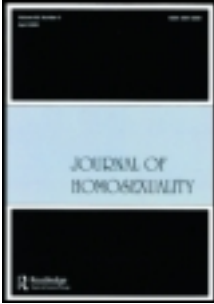


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Journal of Homosexuality

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/wjhm20>

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Available online: 22 Sep 2008

To cite this article: Paul Robert Appleby PhD, Gary Marks PhD, Armida Ayala PhD, Lynn Carol Miller PhD, Sheila Murphy PhD & Gordon Mansergh PhD (2005): Consideration of Future Consequences and Unprotected Anal Intercourse Among Men Who Have Sex with Men, *Journal of Homosexuality*, 50:1, 119-133

To link to this article: http://dx.doi.org/10.1300/J082v50n01_06

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Journal of Homosexuality, Vol. 50(1) 2005
Available online at <http://www.haworthpress.com/web/JH>
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doi:10.1300/J082v50n01_06

ABSTRACT. This study of men who have sex with men (MSM) examined whether tendencies to consider the future consequences of one's actions were associated with sexual behaviors that place oneself at risk for HIV infection. A total of 339 HIV-negative MSM responded to the Consideration of Future Consequences Scale (CFC; Strathman et al., 1994) and to questions about their anal intercourse practices in the past year. In bivariate analyses, men with a stronger future orientation were less likely to engage in anal intercourse unprotected by a condom ($p < .05$). Multivariate analyses revealed that CFC accounted for significant variance in three of four measures of unprotected anal sex after statistically controlling for demographic covariates (education, income, ethnicity, age). CFC was a better predictor of sexual behavior and accounted for more unique variance than any of the demographic factors. Additional research is needed to confirm that CFC is an antecedent of behavior and to examine the feasibility and efficacy of focusing on CFC in HIV prevention interventions. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2005 by The Haworth Press, Inc. All rights reserved.]

KEYWORDS. MSM, HIV/AIDS, predictors of sexual risk, consideration of future consequences

The degree to which one considers the consequences of one's actions has implications for many important life domains from career achievement to retirement planning to health promotion. Indeed, avoiding chronic diseases such as heart disease, some cancers, and HIV/AIDS may depend on one's ability to forego immediate tangible pleasures for the sake of distant, abstract outcomes (Rothspan & Read, 1996; Strathman, Gleicher, Boninger, & Edwards, 1994).

The early theoretical approach to time perspective examined this construct as a general preoccupation with the future or future events (e.g., Kastenbaum, 1961). Measures of this construct (e.g., Barndt & Johnson, 1955; Brock & Del Giudice 1963; Klineberg, 1968) were often open-ended, had poor reliability, and were weakly correlated. Alternative standardized measures were developed (Stewart, 1976; Gonzalez & Zimbardo, 1985; Zimbardo, 1990), and those measures retained the earlier conceptualization of time perspective (Strathman et al., 1994). The Stanford Time Perspective Inventory (Zimbardo, 1990) is a

38-item measure tapping into past, present, and future time orientation dimensions. The dimension of “pragmatic action for future gain” (Gonzalez & Zimbardo, 1985) is most closely related to Strathman *et al.*'s (1994) scale (used in the current study) that taps into the

intrapersonal struggle between present behavior with one set of immediate outcomes and one set of future outcomes . . . (which is) hypothesized to be a relatively stable characteristic. Individuals low in CFC are expected to focus more on their immediate, versus distant, needs and concerns, and are thus expected to act to satisfy these immediate needs . . . In contrast, people who are high in CFC are expected to consider the future implications of their behavior and use their distant goals as guides for their current actions. (Strathman *et al.*, 1994, p. 743)

With respect to the present study, the struggle between immediate gains (e.g., sexual pleasure) and long-term outcomes (e.g., HIV status) is the most relevant aspect of time perspective in sexual behavior. CFC can be examined within the context of existing health models. A number of researchers have proposed that the practice of disease prevention is a function of health beliefs (Bandura, 1986; Hochbaum, 1958; Rosenstock, 1966). The health belief model has been the most prominent and researched theory of the practice of health behaviors (Taylor, 1995). These beliefs include general health values, beliefs about the severity of threat posed by the illness, perceived personal vulnerability, beliefs that a particular action will be effective against threat of illness, and beliefs about the benefits versus costs of a particular health behavior. Clearly CFC might influence these beliefs. For example, the extent to which the individual considers negative consequences in the future may influence one's perception of personal vulnerability to HIV/AIDS. In turn, this perception of vulnerability to HIV/AIDS might influence sexual decision making; that is, whether one chooses to use a condom or not.

Most studies linking sexual practices unprotected by a condom with individual differences in consideration of future consequences, or the related dimension of future time perspective, have focused on heterosexuals and college students (Dorr, Krueckeberg, Strathman, & Wood, 1999; Rothspan & Read, 1996; Strathman *et al.*, 1994). Little attention has been given to future time perspective and sexual behavior among men who have sex with men (MSM). Reports of resurgence in rectal gonorrhea and other sexually transmitted diseases (Centers for Disease

Control and Prevention [CDC], 1999a, 1999b) indicate that unprotected anal sex is on the rise in MSM. In light of these trends, it is clear that interventions developed for these men need to be enhanced. New HIV risk-reduction strategies might include intervention modules that focus on newly uncovered predictors of behavior. To that end, the focus of the present research was to examine CFC as a correlate of anal intercourse practices in MSM.

In examining the effects of time perspective, it is important to take into account the effects of demographic variables that are associated with both time perspective and sexual behaviors. Time perspective is correlated with educational level (e.g., Peetsma, 2000), income (e.g., Koenig, Swanson, & Harter, 1980), age (e.g., Urberg & Rosen, 1987), and ethnicity (e.g., Roberts & Greene, 1971). Unprotected sexual behaviors are correlated with the same demographic factors (educational level [e.g., Janssen, De Wit, Stroebe, & Van Griensven, 2000], income [e.g., Krueger, Wood, Diehr, & Maxwell, 1990], age [e.g., Mansergh & Marks, 1998], and ethnicity [e.g., Peterson, Coates, Catania, Middleton, Hilliard, & Hearst, 1992]). Thus, these four demographic variables were examined along with CFC as correlates of MSM's unprotected anal intercourse in bivariate and multivariate analyses.

METHOD

Participants

The Institutional Review Boards of the University of Southern California (USC) and the CDC approved all materials and procedures. Participants were enrolled in the study based on the following criteria: had engaged in anal intercourse with a man in the past 12 months; had never been paid with drugs or money for sex; had never injected non-prescription drugs; English speaking; White, Latino, or African American ethnicity; and 18 years of age or older. Men older than 41 years of age were not included in the analysis because they represented only 5% of the sample. Additionally, we included in the analysis only men who reported being HIV-negative so we could focus on men at risk for contracting HIV. The analytic sample was 339 MSM. Forty-five percent of these men identified as White or Caucasian; 32% identified as Mexican American, Mexican, or other Latino; and 22% identified as African American or Black (see Table 1 for further demographic breakdowns).

TABLE 1. Demographic Characteristics of Sample (N = 339)

	n	%
Age		
<25	93	27.4
25-30	126	37.2
30-41	120	35.4
Ethnicity		
African American	76	22.4
White	154	45.4
Latino	109	32.2
Education		
< High school graduate	6	1.8
High school diploma or GED	38	11.2
Trade school or some college	70	20.7
2-year college degree	56	16.5
4-year college degree	122	36.0
Graduate or professional degree	47	13.9
Annual Income		
< \$30,000	173	51.0
\$30,000-\$49,999	109	32.1
\$50,000+	50	14.9
Don't Know/Refuse to Answer/Missing	7	2.1

Total percentages by category do not always add to 100 due to rounding error.

Procedure

During 1997, data collection sites were set up in three locations in West Hollywood, California, a gay enclave of Los Angeles County. After the investigators observed several candidate locations, sites were selected based on diversity of business establishments and volume of foot traffic in the immediate area. Recruitment was conducted on Fridays, Saturdays, and Sundays during morning, afternoon, and evening hours. Men were approached by research assistants (RAs) from USC at the street intercept sites and asked if they would be interested in filling out a screener that would take less than five minutes to complete. An RA approached the first man available after finishing interacting with a participant or study candidate. Both men walking alone and in groups were approached. For men in groups, the man in closest physical proximity to the RA was approached. Occasionally men of white ethnicity were

skipped in order to oversample men of color. It was explained that the screener would determine eligibility for inclusion in a study comprised of a 30-minute, self-administered, anonymous questionnaire about men's sexual behavior sponsored by USC for which respondents would be given \$15 for their time. Of those approached, 53% agreed to fill out the screener. Eligible participants (51% of those screened) were invited to participate and all agreed to do so. Participants were given informed consent and then they self-administered the questionnaire seated on chairs at street sites. No personal identifiers were used, and participants sealed completed questionnaires in envelopes, deposited them in a collection box, and were paid.

Forty-nine percent of the men screened were ineligible. Twenty-four percent of screened men had not engaged in anal intercourse with another man in the past 12 months; this accounted for half of the ineligible group. Other reasons for being ineligible (and percentages) included: injection drug use (7%), being paid with money or drugs for sex (13%), ethnicity (5%), age (4%), uncomfortable with English (1%), and not being a biological male (1%). A few men were ineligible because they had already participated in the study, had an incomplete screener, or were intoxicated.

Measures

Measures included the Consideration of Future Consequences Scale (CFC) (Strathman et al., 1994), a twelve-item instrument in which respondents rate how characteristic items are of themselves on a Likert scale ranging from (1) *extremely uncharacteristic* to (5) *extremely characteristic* (see Appendix A for a list of items). Sum scores were used in the analyses and could range from 12 to 60 ($M = 43.3$, $SD = 7.4$). The CFC is conceptualized as a single-factor scale and confirmatory factor analysis has supported this view (Strathman et al., 1994). Internal reliability (Cronbach's alpha) for the CFC was .63 in the present sample.

Four questions assessing unprotected anal intercourse in the past 12 months were asked. The first two measures were intended to be general in nature, capturing instances of unprotected anal sex with any partners. The variable name for each is in parenthesis after the question.

1. With how many men did you have at least one instance of unprotected anal intercourse in the past 12 months (i.e., you and your partner did not use a condom during anal intercourse)? (any unprotected anal sex) The distribution of response to this

question was highly skewed, thus responses were dichotomized for analysis (at least one man = 1; none = 0).

2. With how many men did you have anal intercourse without *ever* using a condom? (always unprotected anal with a specific partner) Again, responses were highly skewed so the measure was dichotomized (at least one sex partner with whom anal intercourse was always unprotected = 1; no sex partner with whom anal intercourse was always unprotected = 0).

Two additional questions were asked in order to obtain more detailed data on unprotected anal intercourse in a relatively high-risk context. Questions 3 and 4 were asked of men who had anal sex with a non-primary male sex partner in the past year. A non-primary partner was defined as “a sex partner with whom you were not in a primary relationship of at least 6 months and with whom you did not feel a special emotional bond.” The men were asked to think of the most recent time they had anal intercourse with a non-primary male partner:

3. During this sexual encounter, did you put your penis in your partner’s anus without a condom? (yes, no; unprotected anal insertive with non-primary partner).
4. During this sexual encounter, did this partner put his penis in your anus without a condom? (yes, no; unprotected anal receptive with non-primary partner).

Demographic characteristics were assessed using standard formats for self-reported demographic information. The following variables were examined as possible covariates: age ($M = 28$, $SD = 5.5$), income, and education. Additionally, ethnicity was included as a dummy-coded variable (Latino and African Americans were coded “0,” and whites were coded “1”). Grouping ethnicity in this way was justified in that Latinos and African Americans were not significantly different on mean CFC scores or on any of the sexual behavior measures. However, on the CFC measure, Latinos had lower scores ($M = 41.8$, $SD = 7.1$) than whites ($M = 44.7$, $SD = 7.3$; $t[238] = -3.2$, $p < .01$). African Americans ($M = 42.7$, $SD = 7.8$) also had lower scores than whites, $t(208) = -1.9$, $p = .06$.

RESULTS

Descriptive analyses indicated that a relatively large percentage of the participants engaged in unprotected anal sex. Of the 338 (of 339 to-

tal sampled) who responded to the question on “any unprotected anal sex,” 244 (72%) reported they engaged in unprotected anal intercourse in the past 12 months. Of the 339 who responded to the question on “always unprotected anal with a specific partner,” 202 (60%) reported that they had at least one partner in the past year with whom all instances of anal intercourse with that partner were unprotected. Of the 166 participants who responded to the question on “unprotected anal insertive with non-primary partner,” 49 (29.5%) reported they engaged in that behavior in the past year. Finally, of the 168 men who responded to “unprotected anal receptive with a non-primary partner,” 34 (20%) engaged in that behavior in the past year.

Table 2 displays the Pearson correlations among study variables. The four sexual behavior measures were modestly-to-moderately correlated, but they were not correlated to such an extent that they should not be looked at individually. For example, the association between unpro-

TABLE 2. Pearson Correlations Among Study Variables

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. CFC	---	.24**	.19**	.19**	.18**	-.13*	-.19**	-.28**	-.27**
		311	310	311	311	310	311	149	151
2. Education		---	.34**	.43**	.30**	-.15**	-.23**	-.05	.03
			338	339	339	338	339	166	168
3. Income			---	.41**	.12*	-.07	-.09	-.07	-.16*
				338	338	337	338	165	167
4. Age				---	.19**	-.08	-.03	-.05	.04
					339	338	339	166	168
5. Ethnicity					---	-.05	-.13*	-.11	.02
						338	339	166	168
6. Any unprotected anal in past year						---	.70**	.38**	.17*
							338	166	168
7. Always unprotected anal w/ specific partner in past year							---	.30**	.17*
								166	168
8. Unprotected anal insertive w/ non-primary partner								---	.33**
									159
9. Unprotected anal receptive w/ non-primary partner									---

Note. The number below each correlation coefficient is the *n* for that statistic. Only participants with non-primary partners were included for variables 8 and 9; the *n* varies somewhat for the other variables due to missing data. For CFC, education, income, and age, the variables were coded such that higher scores reflected a higher standing on the dimension. Ethnicity was coded white = 1, African-American/Latino = 0. The four sexual behavior variables were coded yes = 1, no = 0. Significance 2-tailed **p* < .05 ***p* < .01

tected insertive and unprotected receptive anal intercourse with a non-primary partner was only .33.

One of the behavioral variables was whether a participant had at least one sex partner in the past year with whom all instances of anal intercourse were unprotected. Some or many of the men who responded affirmatively may have been in monogamous relationships and, thus, were having unprotected anal sex within the context of that relationship. A closer look at the data indicated that there was little correlation between “always unprotected anal with a specific partner” and having a primary sex partner in the past 6 months, $r(319) = -.10, p > .05$. This finding suggests that consistent unprotected anal sex with at least one partner was just as likely to occur with non-primary partners as with primary partners. Although some MSM may perceive that unprotected anal sex is less risky with a primary than nonprimary partner, in reality, the risks may be just as high (Appleby, Miller, & Rothspan, 1999).

The CFC variable was associated with each of the four behavioral measures. Higher CFC scores (indicating greater consideration of future consequences) were significantly correlated with a lower likelihood of engaging in unprotected anal intercourse: “any unprotected anal sex” $r(310) = -.13, p < .05$; “always unprotected anal with a specific partner,” $r(311) = -.19, p < .001$; “unprotected anal insertive with non-primary partner,” $r(149) = -.28, p < .001$; and “unprotected anal receptive with non-primary partner,” $r(151) = -.27, p < .01$.

Several demographic factors were also associated with the behavioral measures. As education increased, men were less likely to have “any unprotected anal sex,” $r(338) = -.15, p < .01$, and less likely to have “always unprotected anal with a specific partner,” $r(339) = -.23, p < .001$. Similarly, this latter behavioral measure was negatively correlated with ethnicity, $r(339) = -.13, p < .05$; men of color were more likely than whites to have a specific partner with whom all instances of anal sex were unprotected. Lower income was significantly associated with “unprotected anal receptive with a non-primary partner,” $r(167) = -.16, p < .05$. Finally, age was not associated with any of the sexual behavior measures.

Although CFC was clearly the most consistent correlate of behavior in the bivariate analyses, it was not clear whether CFC would account for significant unique variance in the behavioral measures after statistically controlling for demographic factors. Thus, we conducted multivariate tests using logistic regression to examine the full array of variables simultaneously as potential correlates of the dichotomous measures of unprotected anal intercourse.

CFC was significantly correlated with three of the four behavioral measures after statistically controlling for the demographic covariates (income, ethnicity, age, income). As seen in Table 3, CFC was a significant correlate of “always unprotected anal with a specific partner,” “unprotected anal insertive with non-primary partner,” and “unprotected anal receptive with non-primary partner.” The finding for “any unprotected anal sex” fell just short of statistical significance in the multivariate model. When controlling for all other variables, no demographic factor was a significant correlate of more than one behavioral measure.

DISCUSSION

Our findings in a sample of MSM are consistent with Rothspan and Read's (1996) study of heterosexual undergraduates. Before discussing our results, a few caveats about the data need to be mentioned. First, although this was an ethnically diverse sample, the men of color participating in this study were recruited in a largely white gay enclave (West Hollywood, California) and therefore may not be representative of men of color who have sex with men who do not visit that enclave. For example, with respect to our Latino sample, the pattern of ethnic differences might have been different had we sampled from a more geographically diverse area and included Spanish-speaking Latinos. Second, the internal reliability of the CFC measure in our sample of MSM was somewhat lower than that found in prior studies conducted predominately with heterosexuals. We do not have data that would further illuminate this difference, but the lower reliability means that there was greater error variance in the CFC measure in our sample of MSM, which may have attenuated the correlations. The sizes of the correlations between CFC and the sexual behaviors might therefore be underestimated in this analysis. Third, the study was cross-sectional in nature and no conclusions can be reached about cause-effect relationships; it is possible that other unmeasured “third” variables may have played a role in the association between CFC and MSM's unprotected anal intercourse.

Nevertheless, after statistically controlling for a host of demographic factors, CFC accounted for significant variance in three of the four measures of anal sex. CFC accounted for more unique variance across behavioral measures than any of those demographic factors. Although the correlations of CFC with unsafe sex averaged around .22 and therefore accounted only for about 5% of the variance in the behavioral measures, CFC

TABLE 3. Multivariate Logistic Regression Analyses of CFC and Demographic Variables as Correlates of Unprotected Anal Sex

	Any unprotected anal in past year		Always unprotected anal w/ specific partner in past year		Unprotected anal insertive w/ non-primary partner		Unprotected anal receptive w/ non-primary partner	
	Adj. OR	95% CI	Adj. OR	95% CI	Adj. OR	95% CI	Adj. OR	95% CI
1.	.97	.94, 1.01	.96*	.93, .99	.93**	.88, .98	.91**	.86, .97
2.	.89	.52, 1.54	1.26	.77, 2.06	1.59	.71, 3.56	.90	.35, 2.31
3.	.99	.94, 1.05	1.05	1.00, 1.10	1.01	.94, 1.09	1.06	.96, 1.16
4.	.84	.69, 1.03	.73**	.60, .89	1.05	.78, 1.41	1.35	.91, 1.99
5.	.96	.86, 1.08	.97	.87, 1.09	.99	.81, 1.21	.66*	.46, .93

Note. Predictor variables were included in he equation simultaneously.

Variable 1 = CFC (consideration of future consequences)

Variable 2 = Ethnicity

Variable 3 = Age

Variable 4 = Educational level

Variable 5 = Annual income

*p < .05, **p < .01

may play a more meaningful role than these modest correlations suggest. Sometimes the choice of risky versus safer sex “hangs in the balance.” That is, many variables influence sexual decision-making. Individuals bring their own subjective perceptions, desires, and motivations into sexual situations. It is on occasions when the balance of these variables is such that the decision to have safer or risky sex is so close that consideration of future consequences may tip the balance toward a decision to have safer sex, or a lack of such consideration may lead to unsafe sex.

Before any definitive conclusions can be reached, however, additional research (e.g., randomized controlled trial) is needed to examine CFC as an antecedent of behavior. Future research is also needed to examine the feasibility and efficacy of focusing on CFC in HIV prevention interventions. Even though CFC is conceptualized as a relatively stable individual-difference variable, it may be possible through intervention to move people in small increments to consider the future consequences of their behavior. The ultimate goal would be to help people develop a new behavioral habit when they are in sexual situations.

This approach may also help reduce new behavioral trends in MSM. For example, intentionally seeking unprotected anal sex with non-primary partners, known colloquially as “barebacking” (Mansergh et al., 2002; Suarez & Miller, 2001), is practiced by some gay and bisexual men. Websites devoted to matching partners who wish to practice “barebacking” have become prevalent. There are even Websites known as “bug chasing” Websites (Gauthier & Forsyth, 1999) aimed at pairing HIV-positive and HIV-negative men in order for the latter to become infected by the former. Admittedly, these are very high-risk subgroups of men who are intentionally engaging in very risky behavior; however, by increasing their perceptions of the seriousness of HIV disease in combination with strong priming to consider the future consequences of their behavior, even some of these men may reduce their risk taking.

In closing, our study was conducted in 1997 when many people were optimistic about protease inhibitor therapy. A cover of *Newsweek* magazine represented the sentiment the previous year when it wondered: “The end of AIDS?” (*Newsweek*, 1996, Dec 2). With new reports about problems with HIV/AIDS therapy (e.g., long- and short-term side effects and multiple drug resistance to HIV over time; Chesney, Morin & Sherr, 2000; France, 2001, June 11; Siegel, Schrimshaw, & Raveis, 2000), it is possible that optimism may subside in the future. Thus, encouraging people to consider the future consequences of their actions, if conclusively shown to be a significant antecedent of behavior, may be an important strategy for HIV prevention in the upcoming years.

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APPENDIX A

Items in CFC (Consideration of Future Consequences) Scale

1. I consider how things might be in the future, and try to influence those things with my day-to-day behavior.
2. Often I engage in a particular behavior in order to achieve outcomes that may not result for many years.
3. I only act to satisfy immediate concerns, figuring the future will take care of itself.
4. My behavior is only influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions.
5. My convenience is a big factor in the decisions I make or the actions I take.
6. I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes.
7. I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years.
8. I think it is more important to perform a behavior with important distant consequences than a behavior with less-important immediate consequences.
9. I generally ignore warnings about possible future problems because I think the problems will be resolved before they reach crisis level.
10. I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time.
11. I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date.
12. Since my day-to-day work has specific outcomes, it is more important to me than behavior that has distant *outcomes*.