

Psychosocial and Event-Level Predictors of Condom Use During Anal Intercourse Among Self-Identified HIV-Negative and Unknown Status Gay and Other MSM in Vancouver, British Columbia

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Background

- Condoms remain a vital prevention tool within HIV combination prevention, and additionally provide protection against the transmission of other STIs
- We sought to identify psychosocial and event-level factors associated with condom use during anal intercourse among self-identified HIV-negative and HIV status unknown gay, bisexual and other men who have sex with men (MSM) in Metro Vancouver.

Methods

Study Protocol & Participants: The Momentum Health Study is a longitudinal bio-behavioural study of gay and other MSM in Metro Vancouver recruited using respondent-driven sampling from February 2012 – February 2014.

Eligibility Criteria: 1) ≥16 years old, 2) gender-identify as a man, 3) have had sex with another man in the past 6 months; 4) currently live in Metro Vancouver

Data: Collected during an in-person study visit that lasted ~90 minutes, which included a computer-assisted self-interview (CASI) regarding demographics, sexual behaviour, substance use, and psychosocial attributes, and a subsequent nurse visit for biological specimen collection and a clinical questionnaire. We limited this analysis to self-identified HIV-negative or unknown status participants.

Outcome: Condom use versus non-use during anal intercourse as measured for individual sexual encounters (i.e., event-level data). During the CASI, participants completed a “partner matrix”, which included a repeating set of questions, for their last sexual encounter with each of up to their five most recent sexual partners within the past six months (event-level factors, see below). We excluded sexual encounters that did not include anal intercourse. Condom use was coded as such so as long as condoms were reported for all sexual positions reported in that sexual event (receptive, insertive, or both). Otherwise, the outcome was non-use.

Explanatory Variables: Explanatory factors included event-level factors (substance use, partner’s HIV status, sexual history with partner, sexual position) and individual-level factors (psychosocial scales [HAART Optimism, Sexual Altruism, Sexual Sensation Seeking, Cognitive Escape], demographics).

Statistical Analysis: Descriptive statistics and multivariable models were prepared to explain condom use and non-use for all sexual encounters where anal intercourse was reported. Sexual position was forced into this model given the use of a composite outcome. Factors associated with condom use versus non-use were determined using multivariable generalised linear mixed models with a random effect for participant. Model selection used Type III p-values and AIC minimization to select the optimal factors to retain in the final models.

Results

- Individual-Level:** The majority of participants reported at least one anal intercourse event in the past six months (85.0%, n=436/513). Of these 436 MSM, 36.7% reported only condom-protected anal intercourse.
- Event-Level:** Two-thirds of all sexual encounters involved anal intercourse (64.1%, n=1196/1866), an average of 2.74 anal intercourse events per participant. Condom were used during 55.5% of these events.
- See Table 1 for factors associated with condom use versus non-use.**

Table 1. Multivariable model of demographic, psychosocial, and event-level factors associated with *condom use versus non-use* at last anal sex encounter

Individual-Level Explanatory Factors	AOR	95% CI	
Annual Income			
<\$30,000	1.00		
at least \$30,000	0.66	0.45	0.95
Relationship Status			
No current partner	1.00		
Have not lived together for one year	0.99	0.63	1.57
Have lived together for at least one year (or are married)	0.57	0.34	0.96
PSYCHOSOCIAL SCALES (mutually exclusive)			
HAART Optimism	0.95	0.91	0.99
Sexual Sensation Seeking Scale	0.94	0.89	0.98
Cognitive Escape	0.97	0.94	0.99
Sexual Altruism – Community Subscale	1.98	1.46	2.68
Event-Level Explanatory Factors	AOR	95% CI	
SEXUAL HISTORY (mutually exclusive)			
Number of months since first sex	0.99	0.990	0.999
Number of times of anal sex in past 6 months	0.96	0.95	0.98
Sexual position(s)			
Both insertive and receptive	1.00		
Receptive only	1.81	1.20	2.74
Insertive only	2.42	1.59	3.69
Awareness of Partner’s HIV Status Before Sex			
No, I did not know his HIV status	1.00		
Yes, I was <u>certain</u> he was HIV-negative	0.62	0.41	0.9
Yes, I <u>think</u> he was HIV-negative	0.59	0.37	0.93
Yes, I was <u>certain</u> he was HIV-positive	0.27	0.12	0.60
Yes, I <u>think</u> he was HIV-positive	0.06	0.01	0.51
Source of Awareness of Partner’s HIV Status Before Sex			
Did not know or think partner was HIV-positive	N/A		
Partner disclosed their HIV status	1.00		
Participant learnt from profile or met at a poz event	3.01	1.00	0.04
Participant assumed or was told	2.08	1.01	4.29
SUBSTANCE USE (mutually exclusive)			
Any alcohol use by participant	1.43	1.02	2.00
Any crystal methamphetamine use by partner	0.19	0.07	0.55

AOR = Adjusted Odds Ratio, 95%CI = 95% Confidence Interval; **Bolded text** indicates statistical significance at p<0.05

Conclusion

Health promotion for gay and other MSM must consider how event-level factors such as substance use, HAART optimism, partner familiarity, discussions of HIV serostatus, and psychosocial traits collectively affect condom use practices.

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