

# Event-Level Analysis of Substance Use and Sexual Positioning Among Vancouver Gay and Bisexual Men in the Momentum Health Study

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## Background

The Momentum Health Study uses Respondent Driven Sampling (RDS) (Heckathorn 1997) to recruit Vancouver gay and bisexual men and gather behavioral and biological data pertaining to HIV/AIDS. For up to their last 5 sexual partners in the past 6 months participants provide **event level data** pertaining to sexual behavior and substance use 2 hours prior to or during sex. We analyze these data hypothesizing that erectile dysfunction drugs (EDD) are associated with **insertive anal intercourse, (IAI)** and crystal meth and poppers are associated with **receptive anal intercourse (RAI)**

## Methods

In this sample 667 men reported a total of 2,351 partners and 7,734 specific sexual acts. **Figure 1** shows the distribution of total sexual acts. We separately analyzed **IAI** (n= 920) and **RAI** (n= 952) with the SAS® PROC GLIMMIX mixed logistic regression procedure, which accounts for data interdependence and uses the sexual encounter as the unit of analysis. In each model the dependent variable was event-level sexual positioning during anal intercourse. Independent variables included event-level substance use, and current socio-demographic and psycho-social measures. Variables with p<0.20 from initial univariate models were selected for inclusion in the final multivariate models.

## Results

Table 1 shows statistically significant (p<0.05) variables from the multivariate models for **IAI** and **RAI**. Results show different substance use patterns, with IAI associated with EDD use, while RAI was associated with crystal meth and popper use. Additional significant IAI variables included higher scores on the Sensation Seeking Scale, while for RAI these were group sex event attendance, higher Cognitive Escape Scale values and lower annual income.

Figure 1. Distribution of event-level sexual behaviour (n = 7734 sex acts)

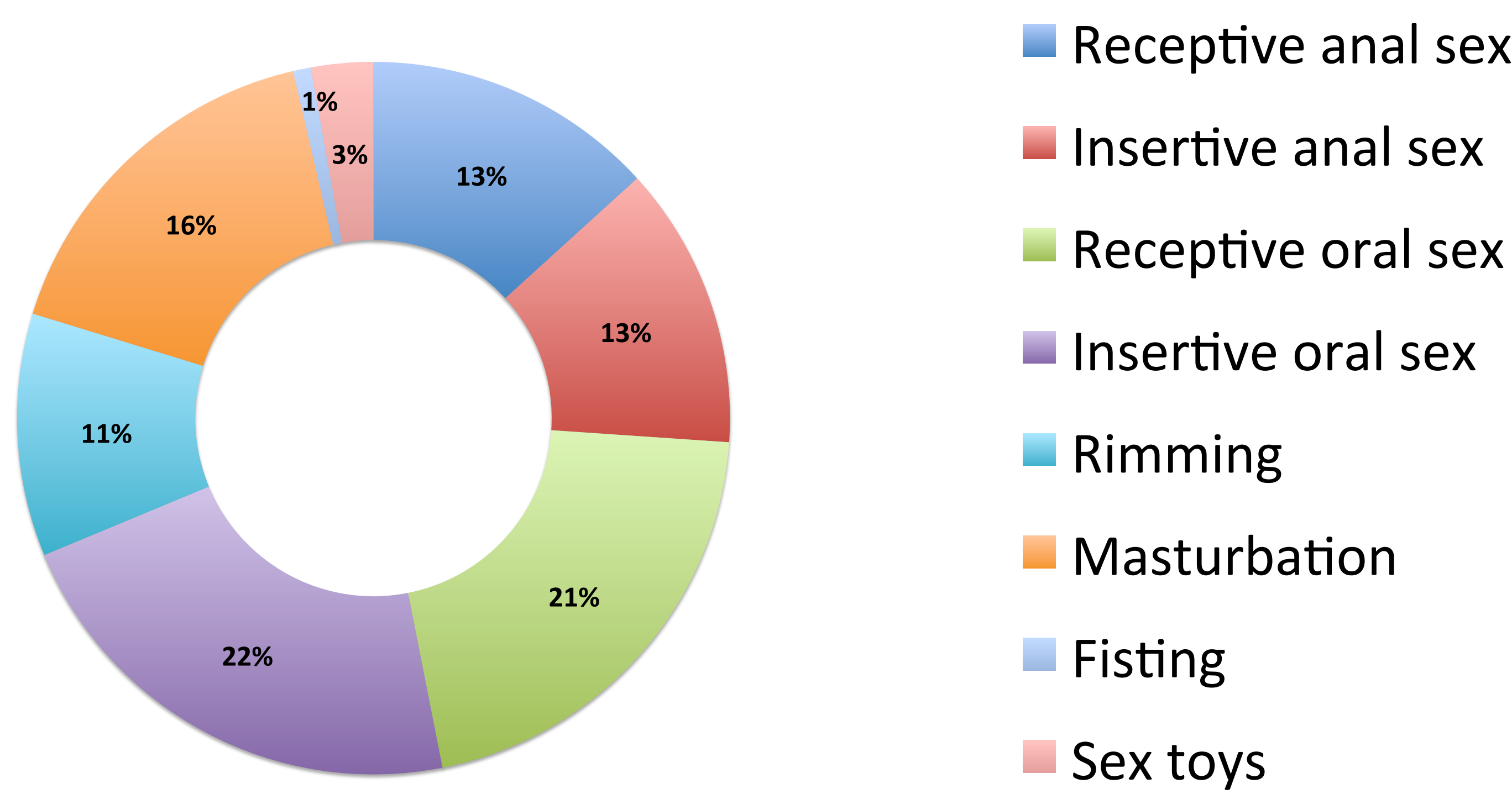


Table 1. Significant (p<0.05) variables by model

Variable	Adjusted Odds Ratio (95% CI)
INSERTIVE ANAL INTERCOURSE	
Sensation Seeking Scale (≥31)	1.311 (1.005- 1.712)
Used EDD	2.795 (1.892-4.127)
RECEPTIVE ANAL INTERCOURSE	
Used Crystal Meth	1.867 (1.202- 2.901)
Used Poppers	1.952 (1.454 – 2.620)
Attended Group Sex Events	1.353 (1.00 – 1.828)
Cognitive Escape Scale (≥29)	1.398 (1.068 – 1.831)
Annual Income (≥\$30K)	0.70 (0.541 – 0.933)

## Conclusions

Past research indicates gay/bisexual men take EDD to prolong erections and facilitate IAI, while crystal meth heightens sexual pleasure, but has the opposite physiological effect, resulting in “crystal dick” (Fisher et al. 2010). We therefore hypothesized that crystal meth would be linked to poppers, which relaxes smooth muscles,, accommodating RAI. Results support our hypotheses and indicate that Momentum participants align specific drugs with sexual positioning and demonstrate rational, planned strategies that consider both physical and psychoactive substance use consequences. Since Momentum is also a prospective cohort study we will follow participants to assess how recent Canadian restrictions on amyl nitrate may change these strategies.

## References Cited

Fisher, D. et al. 2010. Use of crystal meth, Viagra and sexual behaviour. *Current Opinion in infectious Diseases*, 23(1): 53-56.

## Acknowledgements

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