

# DETERMINANTS OF SEXUAL RISK BEHAVIOUR AMONG YOUNG GAY AND BISEXUAL MEN - A TWO-CITY COMPARISON

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## Background

- Despite an initial documented decrease in HIV risk behaviour in the late 1980s and early 1990s, there have been recent reports of a resurgence of new HIV infections and sexual risk-taking.
- There is a need to better understand the social determinants of sexual risk behaviour. To date, social and sexual venues have not been considered in the context of sexual risk.
- Despite the number of studies that have used public sex venues as a point of access to gay and bisexual men, few have attempted to characterise the men who have sex with men in public sex venues or risks associated with such venue.
- An improved understanding of the sociocultural situations in different Canadian cities may help to explain the recent increase in HIV incidence documented in Vancouver, but not in Montreal.

## Objective

- To identify determinants of high-risk sexual behaviours among young gay and bisexual men in Vancouver and Montreal.

## Methods

- Gay and bisexual men between the ages of 16-30 years who had completed a baseline questionnaire were eligible to participate in this analysis.
- High-risk sexual behaviour was defined as unprotected anal sex with casual or known HIV-positive male sex partner(s) in the previous year.
- Cross-sectional comparative analyses were used to characterise men who reported engaging in high-risk sexual behaviour in the year prior to baseline with those who did not. Categorical variables were compared using Pearson's chi-squared test. Comparisons of continuous variables were carried out using Wilcoxon's rank-sum test. Unadjusted and adjusted odds ratios were calculated.
- The homogeneity of the odds ratios between the two cohorts was evaluated using the Breslow-Day test. Those variables found to be statistically significant at  $p \leq 0.05$  in univariate analyses were included in multivariate logistic regression analyses. Separate models were used for each cohort in order to identify characteristics unique to each population.

## Results

- As of March 2001, there were 882 eligible men in Vancouver and 578 eligible men in Montreal.
- Univariate analysis revealed no significant differences between risk-takers and non-risk-takers in either city with respect to sociodemographic characteristics (Table 1).
- Men who were risk takers in both cities reported greater use of poppers and cocaine (Table 2). In addition, risk takers in Montreal were more likely to report the use of marijuana.
- Men in both cities who reported having had at least one casual sex partner were more likely to engage in high-risk sex, but note the greater strength of the association in Vancouver (OR: 13.9 vs. 3.5) (Table 3). Those who reported having had at least one regular sex partner, meanwhile, were found to be more likely to engage in high-risk sex only in Montreal (OR: 1.8). In both cities, men with greater than two regular partners (OR: 1.5 and 2.9) and greater than twenty casual sex partners (OR: 3.0 for both) were more likely to report high-risk sexual behaviour, as were men who reported having sex in bathhouses (OR: 2.5 for both), bars (OR: 2.7 and 2.2), public toilets (OR: 1.9 and 1.8) and cars (OR: 3.3 and 1.8). In Vancouver, men who reported having sex in peep shows (OR: 2.6) and parks (OR: 1.9) were significantly more likely to have engaged in high-risk sex.
- As shown in Table 4 independent determinants of high-risk sex for men in Vancouver were having sex in a car (AOR: 2.9), use of poppers (AOR: 2.1), having sex in a bathhouse (AOR: 1.9), having sex in a bar (AOR: 1.8) and having at least 20 casual partners in the previous year (AOR: 1.7). For men in Montreal, having a casual partner (AOR: 3.0), having at least two regular partners in the previous year (AOR: 3.0), the use of poppers (AOR: 2.9), and engaging in sex in a bathhouse (AOR: 1.8) were independently associated with sexual risk behaviour.

**Table 1: Reported socio-demographic characteristics of men engaging and not engaging in sexual risk behaviour in Vancouver and Montreal**

	Vancouver		Odds Ratio (95%CI*)	p-value	Montreal		Odds Ratio (95% CI*)	p-value	Breslow-Day p-value
	Risky	Not Risky			Risky	Not Risky			
Age									
>21	196 (81)	294 (75)	0.7	0.057	96 (77)	192 (82)	1.4	0.234	0.036
≤21	45 (19)	99 (25)	(0.4-1.0)		29 (23)	42 (18)	(0.8-2.4)		
High school education									
Yes	198 (83)	331 (86)	0.8	0.388	114 (91)	218 (94)	0.7	0.329	0.656
No	40 (17)	55 (14)	(0.5-1.3)		11 (9)	14 (6)	(0.3-1.5)		
Employed									
Yes	184 (82)	254 (66)	0.8	0.325	97 (82)	184 (82)	1.0	0.989	0.615
No	91 (38)	132 (34)	(0.6-1.2)		21 (18)	40 (18)	(0.6-1.8)		
Income									
> \$10,000/year	145 (72)	145 (72)	0.8	0.170	72 (59)	130 (58)	0.9	0.792	0.493
≤ \$10,000/year	56 (28)	113 (28)	(0.5-1.1)		49 (41)	94 (42)	(0.6-1.5)		
Stable Housing									
Yes	200 (83)	331 (84)	0.9	0.630	123 (100)	227 (99)		0.544	-
No	41 (17)	61 (16)	(0.6-1.4)		0 (0)	2 (1)			
Aboriginal ethnicity									
Yes	32 (14)	37 (10)	1.5	0.108	0 (0)	1 (1)		1.000	-
No	200 (86)	349 (90)	(0.9-2.5)		104 (100)	200 (99)			

**Table 2: Reported substance use for men engaging and not engaging in sexual risk behaviour in Vancouver and Montreal**

	Vancouver		Odds Ratio (95%CI*)	p-value	Montreal		Odds Ratio (95% CI*)	p-value	Breslow-Day p-value
	Risky	Not Risky			Risky	Not Risky			
Injection drug use									
Yes	30 (12)	43 (11)	1.2	0.564	3 (3)	6 (3)	0.9	0.926	0.780
No	211 (88)	350 (89)	(0.7-1.9)		117 (97)	219 (97)	(0.2-3.8)		
Poppers									
Yes	102 (44)	87 (23)	2.7	0.001	31 (25)	19 (8)	3.6	0.001	0.388
No	132 (56)	287 (77)	(1.9-3.8)		92 (75)	205 (92)	(2.0-6.8)		
Cocaine									
Yes	99 (42)	123 (32)	1.5	0.012	23 (19)	24 (11)	1.9	0.038	0.536
No	139 (58)	265 (68)	(1.1-2.1)		100 (81)	200 (89)	(1.0-3.6)		
Heroin									
Yes	31 (13)	41 (11)	1.3	0.364	2 (2)	5 (2)	0.7	0.701	0.526
No	206 (87)	343 (89)	(0.8-2.1)		121 (98)	219 (98)	(0.1-3.8)		
Marijuana									
Yes	167 (71)	255 (65)	1.3	0.120	65 (53)	89 (40)	1.7	0.019	0.380
No	68 (29)	137 (35)	(0.9-1.9)		58 (47)	135 (60)	(1.1-2.7)		
Crack									
Yes	33 (14)	46 (12)	1.2	0.436	0 (0)	0 (0)			-
No	201 (86)	339 (88)	(0.7-2.0)		123 (100)	224 (100)			

**Table 3: Reported sexual characteristics of men engaging and not engaging in sexual risk behaviour in Vancouver and Montreal**

	Vancouver		Odds Ratio (95%CI*)	p-value	Risky	Montreal Not Risky	Odds Ratio (95% CI*)	p-value	Breslow-Day p-value
	Risky	Not Risky							
Sex trade work									
Yes	57 (24)	82 (21)	1.2	0.417	15 (12)	16 (7)	1.8	0.114	0.310
No	182 (76)	307 (79)	(0.8-1.7)		108 (88)	208 (93)	(0.9-3.8)		
REGULAR sex partner									
Yes	153 (63)	250 (64)	1.0	0.908	107 (86)	180 (77)	1.8	0.050	0.080
No	88 (37)	141 (36)	(0.7-1.4)		18 (14)	54 (23)	(1.0-3.2)		
CASUAL sex partner									
Yes	235 (98)	317 (81)	13.9	<0.001	113 (90)	171 (73)	3.5	0.001	0.018
No	4 (2)	5 (19)	(5.0-38.5)		12 (10)	63 (27)	(1.8-6.7)		
Sex with MEN and WOMEN									
Yes	54 (22)	107 (27)	0.8	0.176	24 (19)	30 (13)	1.6	0.107	0.037
No	187 (78)	285 (73)	(0.5-1.1)		101 (81)	204 (87)	(0.9-2.9)		
Number of REGULAR sex partners									
≥2	95 (39)	118 (30)	1.5	0.017	111 (89)	171 (73)	2.9	0.001	0.066
<2	146 (61)	273 (70)	(1.1-2.1)		14 (11)	63 (27)	(1.6-5.5)		
Number of CASUAL sex partners									
≥20	52 (22)	33 (8)	3.0	<0.001	16 (13)	11 (5)	3.0	0.006	0.972
<20	187 (78)	359 (92)	(1.9-4.8)		109 (87)	223 (95)	(1.3-6.6)		
Sex in BATHHOUSE									
Yes	119 (49)	109 (28)	2.5	<0.001	77 (62)	91 (39)	2.5	0.001	0.977
No	122 (51)	284 (72)	(1.8-3.6)		48 (38)	143 (61)	(1.6-3.9)		
Sex in BAR									
Yes	37 (15)	25 (6)	2.7	<0.001	34 (27)	34 (15)	2.2	0.004	0.615
No	204 (85)	368 (94)	(1.6-4.6)		91 (73)	200 (85)	(1.3-3.8)		
Sex in PEEP SHOW									
Yes	52 (22)	38 (10)	2.6	<0.001	22 (18)	28 (12)	1.6	0.142	0.202
No	189 (78)	355 (90)	(1.6-4.0)		103 (82)	206 (88)	(0.9-2.9)		
Sex in PARKS									
Yes	100 (41)	105 (27)	1.9	<0.001	42 (34)	57 (24)	1.6	0.062	0.474
No	141 (59)	288 (73)	(1.4-2.7)		83 (66)	177 (76)	(0.9-2.5)		
Sex in PUBLIC TOILETS									
Yes	39 (16)	3 (9)	1.9	0.011	31 (25)	37 (16)	1.8	0.038	0.878
No	202 (84)	356 (91)	(1.1-3.0)		94 (75)	197 (84)	(1.0-3.0)		
Sex in CARS									
Yes	31 (13)	17 (4)	3.3	<0.001	50 (40)	62 (27)	1.8	0.009	0.146
No	210 (87)	376 (96)	(1.8-5.0)		75 (60)	172 (73)	(1.2-2.9)		

**Table 4: Risk factors independently associated with risky sex among young gay and bisexual men in Vancouver (n=882) and Montreal (n=578)**

	Adjusted Odds Ratio	95% Confidence Interval
VANCOUVER		
Engage in sex in a CAR	2.9	1.5-5.7
Use of poppers	2.1	1.4-3.0
Engage in sex in a BATHHOUSE	1.9	1.3-2.8
Engage in sex in a BAR	1.8	1.0-3.2
At least 20 CASUAL partners	1.7	1.0-2.9
MONTREAL		
Sex with CASUAL partner	3.0	1.5-6.0
At least 2 REGULAR partners	3.0	1.6-5.8
Use of poppers	2.9	1.5-5.6
Engage in sex in BATHHOUSE	1.8	1.1-3.0

## Conclusions

- Young gay and bisexual men in Canada remain at high sexual risk for HIV infection. For men in both Vancouver and Montreal, nitrite inhalant use and frequenting of public sex venues were important risk factors for high-risk sexual behaviour.
- Education and prevention campaigns that incorporate substance use information into existing safer sex messages may help to prevent risk taking.
- Active prevention campaigns in public sex venues such as bathhouses and gay bars are essential components of effective public health policy.