

# Correlates of Suicide Attempts in an Open Cohort of Young Men Who Have Sex with Men

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## ABSTRACT

**Objective:** To investigate baseline correlates of attempted suicide in a large cohort of young gay and bisexual men.

**Methods:** Participants completed annual questionnaires asking demographic information, sexual behaviours, history of forced and paid sex, comfort with sexual orientation, use of illicit drugs, and validated measures of depression, social support, alcohol dependency, self-esteem and suicide ideation and attempts. Contingency table analysis and step-wise logistic regression were used to identify potential predictors of self-reported suicide attempts.

**Results:** Of 345 gay and bisexual men eligible for this cross-sectional analysis, 150 (43.5%) reported that they had ever considered suicide and 67 (19.4%) that they had attempted suicide at least once. After adjustment for multiple explanatory variables, the use of nitrite inhalants (poppers) (AOR=2.37; 95%CI 1.30, 4.33), social support scores below the 75th percentile of all scores (AOR=2.19; 95%CI 1.18, 4.09) and low or moderate self-esteem (AOR=3.73; 95%CI 2.03, 6.86) were independently associated with elevated risk of attempted suicide.

**Conclusion:** Our data indicate that men in this analysis who ideate or attempt suicide earlier in life are more likely to report lower social support and self-esteem, and high popper use.

The translation of the Abstract appears at the end of the article.

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Young gay and bisexual men, and men who have sex with men have suicide ideation rates significantly higher than the general population and are also at increased risk of actually attempting suicide. Among adolescent gay and bisexual men, the lifetime attempted suicide rate appears to have tripled over the last 40 years from 9.6% to 31.3%<sup>1-3</sup> It is estimated that 31.3% of gay men attempt to commit suicide at least once in their lifetime versus 3.2% of heterosexual men.<sup>1-3</sup> Increased suicide attempts are reflected in commensurably increased rates of completed suicide among young gay and bisexual men. In North America it has been estimated that young gay and bisexual men commit suicide at least two times more frequently than individuals not self-identified as gay or bisexual.<sup>4-6</sup>

Although the rate of suicide is higher in this population of men, there is a paucity of data regarding determinants of suicide and attempted suicide among gay and bisexual men. Many studies focus on a narrow range of issues or lack supporting socio-demographic data or, conversely, include sexuality as minor components of general surveys of adolescent health.<sup>3,6,7</sup> The aim of our analysis was to investigate baseline socio-demographic, psychosocial and behaviour correlates of attempted suicide in a large open cohort of young gay and bisexual men.

## METHODS

The Vanguard Project has been described in detail elsewhere.<sup>8-10</sup> In brief, the study started recruiting gay and bisexual men into an ongoing prospective study of HIV incidence and risk behaviours in May 1995. Men were eligible to participate if they were aged 18 to 30, lived in the Greater Vancouver region, had not previously tested HIV-seropositive, and self-identified as gay or bisexual or had sex with other men. Potential participants were recruited through community outreach at gay community events, community health clinics or local physicians, and through the gay and mainstream media. After providing written informed consent, participants were referred to local HIV testing clinics, the study's research nurse, or their physician's office for their blood work-ups for HIV testing. At enrolment, subjects were asked to provide contact information to facilitate follow-up.

### Study instrument

At baseline and annually thereafter, participants complete a detailed self-administered questionnaire and provide a blood sample for HIV antibody testing. Completed baseline questionnaires provide demographic data as well as information regarding sexual behaviours. Included are aspects of insertive and receptive anal and oral sex with regular partners (men with whom one has sex at least once per month), casual partners (men with whom one has sex less than once per month) and paid partners (sex exchanged for money, drugs, goods, clothing, shelter or protection). Participants are also asked whether they have ever been forced to have sex (any type of sexual activity into which one is forced or coerced against one's will), and the age range when this first occurred. Participants complete a 7-item abbreviated version of the Centres for Epidemiologic Studies of Depression (CES-D) scale and the (IES) Social Support scale.<sup>11,12</sup> Additionally, participants answer questions about their use of legal and illegal recreational drugs including alcohol, tobacco, nitrite inhalants (poppers), marijuana/hashish, crystal methamphetamine, cocaine and opiates. Baseline questionnaires were used to assess the above-described characteristics.

Data were also collected on a participant's mental health, suicide ideation (i.e., having ever considered suicide at least once in their lives) and attempts (ever previously attempted suicide), sexual behaviour, and drug use. Rosenberg self-esteem score and the CAGE alcoholism scale have been included as were questions regarding participants' comfort level with their sexual orientation and history of diagnosis with a mood disorder or mental disability.<sup>13,14</sup> Information was collected on total numbers of male and female sexual partners in the previous year and lifetime, age at which respondents first engaged in sexual activity, and frequencies of specific consensual sexual practices over the last year (e.g., insertive vs. receptive anal intercourse, with and without ejaculation). Sexual behaviours were recorded for regular partners, defined as men with whom respondents had sex more than once a month on average, and casual male partners, defined as men with whom they had sex less than once a month on average. Additionally,

**TABLE I**
**Univariate Analysis of the Sociodemographic Characteristics Associated with Suicide Attempt Among 345 Young Gay and Bisexual Men who had Completed a Baseline and First Follow-up Survey by April 1998**

Characteristics	Yes (n = 67) n (%)	No (n = 278) n (%)	p value
Caucasian			
Yes	54 (80.6)	236 (84.9)	0.389
No	13 (19.4)	42 (15.1)	
Age (in years)			
Median	26	27	0.061
Inter-quartile range	23-28	24-29	
Completed High School			
Yes	35 (52.2)	194 (69.8)	0.006
No	32 (47.6)	84 (30.2)	
Median Income			
<\$10,000	24 (37.5)	49 (19.0)	0.002
>\$10,000	40 (62.5)	209 (81.0)	
Canadian Born			
Yes	58 (87.9)	226 (82.2)	0.265
No	8 (12.1)	49 (17.8)	

**TABLE II**
**Univariate Analysis of the Sexual Characteristics Associated with Suicide Attempt Among 345 Young Gay and Bisexual Men Who Had Completed a Baseline and First Follow-up Survey by April 1998**

Characteristics	Yes (n = 67) n (%)	No (n = 278) n (%)	p value
Regular Male Partners			
Median	1	1	0.813
IQR	0-2	1-2	
Casual Male Partners			
Median	7	4	0.112
IQR	3-20	2-10	
Anal Insertive			
Yes	44 (75.9)	202 (88.6)	0.013
No	14 (24.1)	26 (11.4)	
Anal Receptive			
Yes	52 (94.6)	197 (86.4)	0.096
No	3 (5.4)	31 (13.6)	
Ever Been Paid for Sex			
Yes	21 (31.3)	40 (14.6)	0.001
No	46 (68.7)	234 (85.4)	
Been Forced/Coerced to Have Sex*			
<12 years old			
Yes	18 (26.9)	38 (13.7)	0.009
No	49 (73.1)	240 (86.33)	
12-17 years old			
Yes	16 (23.9)	21 (7.6)	0.001
No	51 (76.1)	257 (92.5)	
>18 years old			
Yes	14 (20.9)	40 (14.4)	0.188
No	53 (79.1)	238 (85.6)	

\* Age categories are not mutually exclusive

participants answered questions about their use of legal and illegal recreational drugs including alcohol, tobacco, nitrite inhalants (poppers), marijuana/hashish, crystal methamphetamine, cocaine and opiates.

### Statistical analysis

The cross-sectional analysis presented here is limited to those individuals who had completed at least one follow-up questionnaire as of April 1998. In this follow-up questionnaire, we asked about suicide

attempts and ideation. Correlate data used in this study were taken from the same follow-up questionnaire. Comparisons between suicide attempters and non-attempters were carried out using contingency table analysis. Step-wise logistic regression was used to identify independent predictors of suicide attempts after adjustment for multiple explanatory variables. Variables that were statistically significant ( $p < 0.05$ ) in univariate analysis were considered for inclusion in a multivariate model. For the purposes of this study, continuous

**TABLE III**

**Univariate Analysis of the Psycho-social Characteristics Associated with Suicide Attempt Among 345 Young Gay and Bisexual Men Who Had Completed a Baseline and First Follow-up Survey by April 1998**

Characteristics	Yes (n = 67) n (%)	No (n = 278) n (%)	p value
CES-D (depression)			
Median	14	12	<0.001
Inter-quartile range	11-20	10-14	
IES (social support)			
Median	61	52	<0.001
Inter-quartile range	53-73	44-61	
Comfort Level with Orientation			
Totally comfortable	48 (75.0)	210 (76.4)	0.034
Somewhat comfortable	13 (20.3)	61 (22.2)	
Not very comfortable	1 (1.6)	4 (1.5)	
Not at all comfortable	2 (3.1)	0 (0.0)	
Rosenberg Self-esteem			
Low	4 (6.0)	2 (0.7)	0.001
Medium	37 (55.2)	74 (27.1)	
High	26 (38.8)	197 (72.2)	
Diagnosed with Mood Disorder or Mental Disability			
Yes	24 (35.8)	48 (17.5)	0.001
No	43 (64.2)	226 (82.5)	
Psychiatric Ward			
Yes	11 (17.5)	5 (1.9)	0.001
No	52 (82.5)	254 (98.1)	
Poppers (in previous year)			
Yes	29 (8.5)	68 (19.9)	0.002
No	37 (10.9)	207 (60.7)	
CAGE (alcoholism)			
Low	28 (41.8)	163 (59.3)	0.001
Borderline	8 (11.9)	48 (17.5)	
Alcoholic	31 (46.3)	64 (23.3)	
Detox Centre			
Yes	6 (9.8)	1 (0.4)	0.001
No	55 (90.2)	259 (99.6)	

one third of our sample having been forced or coerced to have sex before they were 18 years old. Of this group, more than a quarter had attempted suicide ( $p = 0.040$ , data not shown). Attempters much more commonly reported forced sex in childhood and adolescence than non-attempters (both  $p < 0.01$ ). Participants who were forced or coerced to have sex indicated that they were forced into sex 3 times more frequently as teenagers than as pre-teens. Men who had attempted suicide were also more likely to have ever been paid for sex ( $p = 0.001$ ).

Table III compares the psychosocial characteristics of attempters and non-attempters. Relative to non-attempters, attempters had higher CES-D depression scores, lower levels of social support (both  $p < 0.001$ ) and were significantly more likely to have low or moderate self-esteem levels. Only 39% of suicide attempters had high self-esteem, compared to 72% of non-attempters ( $p = 0.001$ ). The majority of cohort participants were comfortable with their sexual orientation, although suicide attempters were less at ease with their sexual orientation overall ( $p = 0.03$ ). Due to the low number of those reporting any degree of sexual orientation discomfort ( $n = 7$ ), these results should be interpreted with caution. Attempters were also more likely to have ever been diagnosed with a mood disorder (e.g., clinical depression) or mental disability, and to have spent time in a psychiatric ward (both  $p = 0.001$ ). The use of poppers (inhalants) in the year prior to baseline was higher among suicide attempters ( $p = 0.002$ ). The proportion of suicide attempters who were identified as having an alcohol dependency using the CAGE scale was two-fold higher compared to non-attempters (46.3% versus 23.3% respectively,  $p = 0.001$ ). Suicide attempters were also significantly more likely to have ever been admitted to a detoxification centre ( $p = 0.001$ ).

scales were dichotomized above and below the 75th percentile (CES-D and Social Support scales) while in the ordinal Rosenberg self-esteem scale, the two categories – low and medium – were collapsed to form a single category as distinguished from high self-esteem.

## RESULTS

Of the 345 eligible participants, 150 (43.5%) reported that they had considered suicide, and 67 (19.4%) reported that they had attempted suicide at least once. A univariate comparison of attempters and non-attempters on the basis of demographic characteristics is shown in Table I. There was no significant difference between

groups with respect to age (median age of 26 and 27 respectively), ethnicity, or place of birth (all  $p > 0.05$ ). However, those who had attempted suicide were significantly less likely to have completed high school ( $p = 0.006$ ) and more likely to have annual incomes below \$10,000 Canadian ( $p = 0.002$ ).

Table II shows the comparison of attempters and non-attempters on the basis of sexual behaviours over the previous year and lifetime history of paid and forced sex. The median numbers of both regular and casual male sexual partners were not significantly divergent between attempters and non-attempters (both  $p > 0.05$ ). A large proportion of participants reported at least one episode of non-consensual sex, with

**TABLE IV**

**Multivariate Analysis of the Independent Predictors of Suicide Attempt Among 345 Young Gay and Bisexual Men Who Had Completed a Baseline and First Follow-up Survey by April 1998**

Characteristics	Beta Coefficient	Standard Error	Odds Ratio	95% CI	p value
Social Support (Low versus high)	0.79	0.32	2.19	1.18 - 4.09	0.013
Poppers use in the previous year (Yes versus no)	0.86	0.31	2.37	1.30 - 4.33	0.005
Self-esteem (Low/moderate versus high)	1.32	0.31	3.73	2.03 - 6.86	<0.001

Table IV shows the final multivariate logistic regression model. After adjustment for multiple explanatory variables, the use of poppers (AOR=2.37; 95%CI 1.30,4.33), social support scores below the 75<sup>th</sup> percentile (AOR=2.19; 95%CI 1.18,4.09) and low or moderate self-esteem (AOR=3.73; 95%CI 2.03,6.86) remained independently associated with elevated risk of attempted suicide.

## DISCUSSION

Our analysis revealed that prior suicide attempts appear to be independently and positively associated with current low social support and low self-esteem and with the use of poppers. The level of suicide ideation among gay and bisexual men in this cohort was also extremely high. Of the 345 young men eligible for this analysis, 44% had considered and 19% had attempted suicide at least once. These findings are consistent with those of Garofolo et al. who found that more than one third of all gay and lesbian high school students surveyed had made a suicide attempt in the previous 12 months.<sup>5</sup> Similarly, Roesler,<sup>15</sup> and Jay and Young<sup>16</sup> found that an unusually high level of suicide attempts occurred in gay youth. In the latter survey of 5,000 homosexual men and women, 40% had considered suicide.<sup>17</sup> Canadian work also appears to confirm this statistic.<sup>6</sup>

Our findings corroborate those of other studies that have identified young gays and lesbians as having high mean scores for current depression, hopelessness and suicide intent.<sup>17</sup> Furthermore, evidence of prior diagnosis of mental health problems was associated with increased risk of suicide attempts in our cohort. Our findings also corroborate increased rates of substance use reported among gay, bisexual and lesbian youth by other researchers.<sup>5,8</sup> Alcohol and drug abuse appear to be more common among the men in our study who had attempted suicide with 30% of attempters having used poppers in the previous year and 43% having (or having had) alcohol-related problems.

There are several limitations of our study that should be highlighted. First, readers of our work should recognize that the reporting of suicide ideation and attempts were based on self-report. Therefore, we may have underreported the rate of attempts,

and our level may not be comparable with other studies in which exterior criteria are applied.<sup>3-5,17</sup> Second, the study sample may suffer from selection bias, as it is not a random sample of all gay and bisexual youth in Vancouver. Despite extensive community outreach, the voluntary nature of the study precludes the participation of gay and bisexual youth who are unwilling to participate.

In summary, analysis confirms previous work that indicates that gay and bisexual youth have an alarmingly high rate of suicide attempts. Whether in the family, in the school or on the streets, gay and bisexual youth confront heterosexism and homophobia in their day-to-day lives. It is incumbent on those people responsible for the protection of our youth to work to eradicate the destructive binarism of homo/heterosexuality, and its attendant positive and negative values, in favour of recognizing the growing need for normalizing all human relationships regardless of gender affiliations, especially among youth.

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## RÉSUMÉ

**Objectif :** Notre étude porte sur les corrélats initiaux des tentatives de suicide au sein d'une vaste cohorte de jeunes hommes gais et bisexuels.

**Méthode :** Les participants ont rempli annuellement des questionnaires comportant des demandes de renseignements de base et des questions sur leur comportement sexuel, leurs antécédents de relations sexuelles forcées ou rémunérées, leur aisance par rapport à leur orientation sexuelle et leur consommation de drogues illicites. Ils ont aussi validé des mesures concernant la dépression, le soutien social, la dépendance à l'alcool, l'estime de soi, les idées suicidaires et les tentatives de suicide. Par l'analyse de tableaux de contingence et l'analyse séquentielle de la régression logistique, nous avons cherché à déterminer les prédicteurs des tentatives de suicide déclarées par les intéressés.

**Résultats :** Sur les 345 hommes gais et bisexuels remplissant les conditions requises pour cette analyse transversale, 150 (43,5 %) ont déclaré avoir envisagé le suicide, et 67 (19,4 %) ont dit avoir fait au moins une tentative. Après correction en fonction de variables explicatives multiples, les facteurs indépendants associés à un risque élevé d'attenter à sa vie étaient la consommation de nitrates d'amyle (« poppers ») (rapport de cotes ajusté = 2,37; intervalle de confiance [IC] de 95 % = 1,30-4,33), les scores de soutien social inférieurs au 75<sup>e</sup> percentile de l'ensemble des scores (rapport de cotes ajusté = 2,19; IC de 95 % = 1,18-4,09) et une estime de soi faible à moyenne (rapport de cotes ajusté = 3,73; IC de 95 % = 2,03-6,86).

**Conclusion :** Les hommes ayant envisagé le suicide ou tenté de se suicider tôt dans la vie étaient plus susceptibles de déclarer un manque de soutien social, une faible estime de soi et une consommation élevée de nitrates d'amyle.