

## Correlates of bullying in Quebec high school students: the vulnerability of sexual-minority youth

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### Abstract

**Purpose**—Bullying has become a significant public health issue, particularly among youth. This study documents cyberbullying, homophobic bullying and bullying at school or elsewhere and their correlates among both heterosexual and sexual-minority high school students in Quebec (Canada).

**Method**—A representative sample of 8,194 students aged 14–20 years was recruited in Quebec (Canada) high schools. We assessed cyberbullying, homophobic bullying and bullying at school or elsewhere in the past 12 months and their association with current self-esteem and psychological distress as well as suicidal ideations.

**Results**—Bullying at school or elsewhere was the most common form of bullying (26.1%), followed by cyberbullying (22.9%) and homophobic bullying (3.6%). Overall, girls and sexual-minority youth were more likely to experienced cyberbullying and other form of bullying as well as psychological distress, low self-esteem and suicidal ideations. The three forms of bullying were significantly and independently associated with all mental health outcomes.

**Conclusions**—The results underscore the relevance of taking into account gender and sexual orientation variations in efforts to prevent bullying experience and its consequences.

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#### **Declaration of interest**

There is no conflict of interest for any author in regard to the publication of this manuscript.

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## Keywords

Cyberbullying; homophobic bullying; bullying; psychological distress; self-esteem; suicidal ideations; sexual-minority youth

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## 1. Introduction

In the last decade, several studies have documented physical and emotional consequences associated with bullying among adolescents (Gini and Pozzoli, 2009; Modecki et al., 2014). Despite increased awareness and prevention efforts, the prevalence of victims of bullying among students remains high, exceeding 80% in some contexts (Perren et al., 2010; Roberto et al., 2014). In addition to traditional forms of bullying, the growing presence of new technologies in our life, such as easy Internet access, allows for a new form of bullying, namely cyberbullying (Kowalski et al., 2014; Kramer and Vaquera, 2011). Cyberbullying is defined as an intentional and aggressive behaviour or act repeatedly carried out by an individual (or a group) against another person (or group) who cannot easily defend himself (or themselves) using electronic tools such as social networks, emails, cell phones (Smith et al., 2008). Cyberbullying has become a serious public health issue among youth, showing prevalence varying from 20% to 40% and exceeding 70% annually in some cases (Burton et al., 2013; Meyer, 2003; Roberto et al., 2014). Cyberbullying rates among youth may even appear to be higher than the rates of other forms of bullying (Collier et al., 2013; Schneider et al., 2012). Indeed, the prevalence of cyberbullying and bullying victimization are largely variable from study to study because of differences in definitions.

The aggressive nature of harassment uttered via the Internet is associated with the fact that the perpetrators enjoy high disinhibition as they are hidden behind their keyboards (Hinduja and Patchin, 2014). The isolation of the aggressors behind a computer may also provide an impersonal nature and deindividuation to their statements, potentially making them more destructive for the victims (Aoyama et al., 2011; Hinduja and Patchin, 2010; Kowalski et al., 2012). Furthermore, the uncontrollable nature of the Internet, particularly the high spread of information, in this case mockeries and insults, can create a feeling of overexposure and make victims more vulnerable to negative mental health outcomes such as psychological distress (Hinduja and Patchin, 2010). Some cases of suicide among adolescent victims of cyberbullying have recently been reported by the media over the world and particularly in North America, shocking in each case public opinion and motivating the need for effective prevention.

Previous studies have shown that sexual-minority youth (SMY), namely lesbian, gay, bisexual and questioning youth, are repeatedly victims of cyberbullying (Blais et al., 2013). They are targeted because of a nonconforming sexual orientation to societal traditional expectations over sexuality and gender. Bullying based on sexual-minority status sends the message that non-exclusive heterosexuality is unwelcome and undervalued. In this context, SMY may experience minority stress (Aoyama et al., 2011), a chronic form of stress engendered by negative social experiences such as stigmatization, that is known to impact adversely mental health and well-being. A recent survey on homophobia in Quebec high

schools has pointed out that cyberbullying is a growing phenomenon among SMY and requires further studies (Chamberland et al., 2013). While sexual-minority boys are more victims of physical bullying and direct bullying, sexual-minority girls are more subjected to insults on the Internet (Chamberland et al., 2013). What remains unclear are the consequences of bullying within each group of sexual minorities. Studies hitherto have not investigated potential differences between such groups, but, rather, have considered SMY as a homogeneous group (Cooper and Blumenfeld, 2012; Varjas et al., 2013).

Victims of cyberbullying are likely to experience negative consequences such as high psychological distress, low self-esteem, depressive symptoms, suicidal ideations and suicide attempts (Bauman et al., 2013; Goebert et al., 2011; Hinduja and Patchin, 2010; Trickett, 2009). In addition, victims are vulnerable to social isolation and may engage in risky behaviors such as alcohol and substance abuse (Schneider et al., 2012; Williams et al., 2005). Studies conducted up to now have failed to document mental health outcomes for each form of bullying among different sexual-minority groups.

With a large number of youth with Internet and social network access in North America (97.6% in Canada, according to Statistics Canada, 2013), cyberbullying may tend to increase in the coming years if prevention measures are not taken accordingly. Faced with the shortcomings in the scholarly literature regarding studies on the impact of different forms of bullying and the vulnerability of different SMY groups, the present paper aims to explore the prevalence of three forms of bullying (cyberbullying, homophobic bullying and bullying at school or elsewhere) and their association with psychological distress, low self-esteem and suicide ideations for each SMY group using data of the *Quebec Youths' Romantic Relationships Survey* (QYRRS). We also explore the prevalence of psychological distress, low self-esteem and suicidal ideations in our sample.

## 2. Method

### 2.1. Participants

The QYRRS targeted high school students in the province of Quebec, Canada. Participants were recruited through a one-stage stratified cluster sampling of 34 Quebec high schools in autumn 2011. Schools were randomly selected from an eligible pool from Ministère de l'Éducation, du Loisir et du Sport (Ministry of Education Leisure and Sports). Overall, 26% of the solicited schools participated in the survey (34 out of 131). Students from grade 10 to 12 in the schools that have agreed to participate in the survey were asked to complete the questionnaires. Class response rate and the overall student response rate were determined as the ratio between the number of students accepted to participate (students from whom consent was obtained) and the number of approached students, calculated per class and for the entire set of participants respectively. The response rate was 100% in most of the classes (320 /329 classes); and for the remaining, response rate ranged from 90% to 98%. The survey was finalized with an overall response rate of 99% of students who agreed to participate. The sample included 8,194 students (56.3% were girls) aged 14–20 years with a mean age of 15.4 ( $SE = 0.11$ ).

Respondents were given a correction weight to compensate biases due to sample design. The weight was defined as the inverse of the probability of selecting the given grade in the respondent's stratum in the sample multiplied by the probability of selecting the same grade in the same stratum in the population. A weighted sample of 6 540 youths resulted and used in the further analyses. The research ethic boards of the Université du Québec à Montréal approved the QYRRS project and the research protocol. Participants agreed to participate on a voluntary basis by signing an informed consent form.

## 2.2. Measures

Participants were asked about their date of birth, ethnicity, gender and sexual attraction. Age was computed in years. Ethnicity was based on the question *To which ethnic or cultural group do your parents belong?* Responses were coded as *Quebecker or Canadian, Latino-American or African-American, North African or Middle Eastern, European, Asian, Other* (as chosen by participants) and *Mixed ethnicity* (for those who choose more than one response options). Gender was coded as *boys* and *girls*. Sexual orientation was coded in four categories: *heterosexual* (sexually attracted only by persons of the other sex); *gay/lesbian* (attracted only by same-sex partners), *bisexual* (attracted by both, or not exclusively attracted by either sex) and *questioning* (not sure or not knowing yet, or by no one). A single variable combining gender and sexual orientation was also computed: Heterosexual boys, Heterosexual girls, Lesbians, Gays, Bisexual girls, Bisexual boys, Questioning girls and Questioning boys.

The questionnaire also included measures of three different forms of bullying occurring in the past 12 months: cyberbullying victimization "*How many times someone has bullied you (rumors, intimidation, threatening, etc.) using the Internet (Facebook, MySpace, MSN, email, texto, etc.)*"; Homophobic bullying "*How many times someone has bullied you because of your sexual orientation*"; and bullying in school or elsewhere "*How many times someone has bullied you at school or elsewhere except via the Internet*". Respondents rated each question on a 4-point-scale: *Never* (0), *1 to 2 times* (1), *3 to 5 times* (2) and *6 times and more* (3). A dichotomized score was computed for each item according to whether the behavior happened at least *1 to 2 times* and more.

Suicidal ideations were assessed using a yes/no question: "*Have you ever seriously thought of committing suicide?*" We assessed self-esteem using the short version of *Self-Description Questionnaire* (Marsh and O'neill, 1984). Responses of this 5-item scale range from 0 (*false*) to 4 (*true*) resulting in a score varying from 0 to 16 ( $\alpha=0.9$ ). Low self-esteem was derived based on a cut-off point of 10 or less (Statcan, 2005).

The 10-item *Kessler Psychological Distress Scale* was used to measure psychological distress over the week prior to the survey (Kessler et al., 2002). Participants responded on a five-point scale ranging from 0 (*never*) to 4 (*always*), with a total score ranging from 0 to 40 ( $\alpha=0.90$ ). A score of 9 and higher was used to identify clinical psychological distress (Caron and Liu, 2010).

### 2.3. Statistical analysis

Overall, the non-response rate for the variables included in the present study ranged from 2% to 6%. Multiple imputations were conducted using SPSS to account for incomplete data. Statistical analyses were performed using Stata 12, which considers weighted sample and imputed data using Rubin's combination to present a set of pooled results from the different imputed datasets (Little and Rubin, 1987; Rubin, 1996; Statacorp., 2011).

The prevalence of each indicator with their 95% CI was computed according to sexual orientation and gender groups. Then, we performed separate logistic regression models to predict psychological distress, low self-esteem and suicidal ideations using cyberbullying victimization, bullying because of sexual orientation and bullying at school or elsewhere. Covariates included sexual orientation, gender and age.

### 3. Results

Over 4 out of 5 participants (82.6%) reported being heterosexual; 1.3%, gay or lesbian; 10.6%, bisexual; and 5.5% were uncertain. In the past 12 months, participants reported respectively 26.1%, 22.9% and 3.6% of bullying at school or elsewhere, cyberbullying victimization and homophobic bullying.

Table 1 details the prevalence of measures across sexual attraction categories. Overall, heterosexual and bisexual boys were more likely than their female counterparts to report cyberbullying. Yet, bisexual girls and boys were more likely than their heterosexual counterpart to report cyberbullying experiences. Very few heterosexual adolescents reported having experienced homophobic bullying (1.7%). However, the prevalence of homophobic bullying was relatively high among gay and lesbian teenagers (29.4%), with proportion almost three times higher among gay boys (46.9%) compared to lesbian girls (16.5%;  $p < .01$ ). Regarding bullying at school or elsewhere, results show that bisexual girls and boys and both gay and questioning boys reported higher prevalence than heterosexuals (24.5%).

Bisexual respondents reported significantly higher prevalence of psychological distress and low self-esteem (62.3% and 41.1%, respectively) than heterosexual youths (43.8% and 32% respectively) ( $p < .001$ ). Bisexual youth also reported almost two (2) times more suicidal ideations than heterosexuals. Prevalences are respectively 46.4% and 24.2% for bisexuals and heterosexuals with a significant difference ( $p < .001$ ). We also noted a significant higher prevalence of suicidal ideations among gays and lesbians (33.9%;  $p < .001$ ) as well as questioning youth (25%;  $p < .001$ ) when compared to heterosexuals.

Table 2 reveals a great overlap between the three different forms of bullying and the mental health indicators. Overall, victims of bullying report higher levels of psychological distress, low self-esteem and suicidal ideations. Table 3 displays logistic regression results for the three separate models: psychological distress, low self-esteem and suicidal ideations. All models are significant ( $p < 0.001$ ). The Hosmer-Lemeshow tests (Hosmer and Lemeshow, 2004) along with insignificant  $p$  values revealed that the data fit well the models ( $p$  values of 0.71, 0.42 and 0.64 respectively for psychological distress, low self-esteem and suicidal ideations model). Also, values for the variance inflation factor range from 1.01 to 1.21

across imputations for all models, suggesting no issue regarding multicollinearity (Sen and Srivastava, 1990).

Results from the multivariate logistic models controlling for age and ethnicity show that cyberbullying victimization, homophobic bullying and bullying in school or elsewhere are significantly and independently associated with psychological distress, low self-esteem and suicidal ideations. Compared to heterosexual boys, heterosexual and bisexual girls and lesbians were more likely to report severe psychological distress ( $\beta = .95, p < 0.001, \beta = 1.45, p < 0.001$  and  $\beta = .74, p < 0.05$  respectively, for heterosexual and bisexual girls and lesbians). Heterosexual, bisexual and questioning girls were also more likely to report low self-esteem ( $\beta = .59, p < 0.001, \beta = .88, p < 0.001$  and  $\beta = .66, p < 0.001$ ) than heterosexual boys. Regarding suicidal ideations, heterosexual, bisexual and questioning girls as well as bisexual boys ( $\beta = .45, p < 0.001, \beta = 1.22, p < 0.001, \beta = .37, p < 0.05$  and  $\beta = .57, p < 0.001$ ) were higher than among heterosexual boys.

#### 4. Discussion

We examined data from a large and representative sample of adolescents from high schools in Quebec (Canada) to study the prevalence of psychological distress, low self-esteem and suicidal ideations related to cyberbullying, homophobic bullying and bullying at school or elsewhere. Data from the QYRRS showed that a high proportion of youth experienced cyberbullying victimization, regardless of their sexual orientation in the past 12 months. As shown in previous studies, girls are more likely to experience cyberbullying victimization (Dao et al., 2006; Kowalski et al., 2012; Tokunaga, 2010), pointing out the importance of taking into account gender in cyberbullying prevention programs. Still, bisexual youth and questioning boys are more likely to report cyberbullying compared to heterosexual youths.

Results also remind that while homophobic bullying is rare among heterosexual youths, it is relatively high among SMY. Gender differences also exist among SMY, as gay boys (46.9%) reported a significantly greater proportion of homophobic bullying than lesbians (16.5%). Among possible explanation, several studies such as Trickett (2009) suggested that gay youths are targeted because they are deemed too sensitive or effeminate by their peers (Cénat et al., 2014), characteristics considered as non-conformed to cultural expectations on masculinity. This may also explain the fact that young sexual minorities are more at risk to experience bullying at school or elsewhere. Girls may also attribute the victimization to other reasons (e.g., weight, race, physical attraction) as opposed to sexual orientation, contributing to the lower prevalence reported for homophobic bullying in this subgroup. In contrast, no significant differences between heterosexual girls and boys were found regarding bullying in school or elsewhere.

Beyond traditional forms of bullying - in this case bullying at school or homophobic bullying - cyberbullying victimization remains significantly associated with psychological distress, low self-esteem and suicidal ideations. Regardless of sexual orientation, rates of psychological distress, low self-esteem and suicidal ideations are more prevalent among victims than found in non-victims (Table 2). These findings are consistent with those of

Williams et al. (2004) conducted in an English-speaking province of Canada (Williams et al., 2005).

Mental health challenges were also up to two times more prevalent among SMY who have experienced cyberbullying or homophobic bullying. For example, while 55.6% of lesbian youths who have been victims of cyberbullying have reported suicidal ideations, only 24.7% have reported so among those who have not experienced cyberbullying. The same outline is noted for homophobic bullying: 94.4% of victimized lesbian reported suicidal ideations against 20.9% among the non-victimized. Such glaring comparative results indicate the significant impact of cyberbullying victimization and homophobic bullying on the mental health of SMY.

This study shows that the high prevalence of mental health issues reported by SMY is at least partially associated with cyberbullying, a context where they have no control over the spread of these messages and insults. This can trigger a feeling of overexposure. Teens may wonder how many people and who among their family, friends or acquaintances have witnessed or heard about the bullying victimization. The same is true for homophobic bullying taking places in public contexts or not and the bullying in school or elsewhere (especially for young sexual minority boys). SMY may feel outed, exposed, ashamed and vulnerable, a situation that can provoke negative mental health consequences and social isolation.

Bisexual girls were more likely to report psychological distress, low self-esteem and suicidal ideations associated with cyberbullying victimization and bullying for sexual orientation than other SMY. Other studies (Collier et al., 2013; Robinson and Espelage, 2011) had already shown that bisexual youth victims of cyberbullying or homophobic bullying were more likely to develop suicidal ideations. In our study, prevalences are roughly equivalent for cyberbullying, but higher prevalence is found regarding suicidal ideations. A possible explanation is that bullying may be harsher for bisexual youths and thus associated with a greater likelihood of bisexual youths having access to limited social support which could play a role in buffering the bullying effect on mental health. Overall, the greater exposure of bisexual and SMY in general to bullying confirms the minority stress hypothesis that they have to cope with interpersonal stressors that impact their mental health and well-being.

This study contains noteworthy limitations. Data were drawn from a cross-sectional study design, therefore, we are unable to assess a possible causal association between different forms of bullying and mental health outcomes. The three forms of bullying victimization were assessed using single questions so that we were not able to capture some possible forms of bullying and the nature or intensity of the messages and insults. We may gain by exploring the nature of insults (e.g. damage to reputation, verbal abuse, rumors, etc.) associated with psychological distress, low self-esteem and suicidal ideations among SMY. The questions used to assess bullying were also very general; therefore they may not be exclusive, which could limit the generalization of this study. Possible measurement and attribution errors regarding the reasons for bullying can also bias the prevalence of bullying based on sexual orientation. Also, assessment of mental health outcomes is not particularly related to bullying victimization; it is possible that victimis have already struggling with

internalizing problems. However, further studies should also explore mediator factors explaining the link between bullying victimization and mental health outcomes in order to understand subjective dimensions associated with the negative consequences on youth. Data regarding the gender of the bullying perpetrators were not available. In our study, girls reported more cyberbullying victimization; it would have been interesting to contrast victimization to perpetration with respect to gender as previous studies have shown that girls are not only the main victims, but that they are also more likely to report cyberbullying perpetration than boys (Calvete et al., 2010; France et al., 2013).

Despite these limitations, the present study shows that bullying is an important social phenomenon that public health authorities need to be concerned about. The results also suggest that gender and sexual orientation stereotypes are a basis for bullying and should be addressed in prevention. Results highlight the differences in the prevalence of victimization of various forms of bullying within sexual minority groups. They also help to address the mental health differences among SMY. These are two innovative contributions that can facilitate prevention and intervention efforts among SMY victims of bullying at school or elsewhere, cyberbullying and homophobic bullying. The public health authorities should be more responsive as SMY victims of cyberbullying are twice as likely as to develop mental health issues, including suicidal ideations.

## Conclusion

The present results emphasize the need to implement awareness and prevention programs to both prevent bullying and support victims, particularly SMY teens. Interventions to buffer the effect of cyberbullying, homophobic bullying and bullying at school or elsewhere on mental health also are to be developed and implemented. Phone assistance and online chat should be prioritized for initial contacts as it may be easier for adolescent to make the first step through an anonymous channel. Group support interventions are also to consider as they help to build a social support network and break social isolation brought about by all forms of bullying.

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### Implications and contributions

Findings from this study suggest that sexual-minority youth (SMY) are more likely to experienced cyberbullying and other form of bullying as well as psychological distress, low self-esteem and suicidal ideations. Furthermore, victims of bullying show more psychological distress, low self-esteem and suicidal ideations. The correlates of bullying in Quebec high school students show the vulnerability of SMY. Awareness programs and psychological support should be implemented to prevent both bullying and its possible severe consequences among its victims, with a particular focus on girls and sexual minorities.

Table 1

## Prevalence of measures

Measures	Hetero (N=5378) % (CI)	Gay/Lesbian (N=88) % (CI)	Bisexual (N=690) % (CI)	Questioning (N=358) % (CI)	p value sexual orientation difference
Cyberbullying					
Total	21.4 (20.0; 22.7)	28.2 (19.2; 37.2)	32.9 *** (30.0; 35.9)	24 (20.2; 27.8)	<0.001
Girls	24.8 (22.5; 27.1)	29 (16.8; 41.1)	35.8 *** (31.5; 40.1)	23.3 (18.6; 28.1)	<0.001
Boys	17.2 (15.0; 19.3)	27.2 (12.8; 41.7)	24.3 * (17.8; 30.1)	25.6 * (16.6; 34.6)	0.02
p value gender difference	<0.001	0.9	0.02	0.7	
Homophobic Bullying					
Total	1.7 (1.3; 2.1)	29.4 *** (18.2; 40.5)	13.4 *** (11.4; 15.4)	7 *** (5.2; 8.9)	<0.001
Girls	2 (1.4; 2.7)	16.5 *** (3.8; 28.3)	12.2 *** (9.6; 14.7)	6.5 *** (4.7; 8.3)	<0.001
Boys	1.3 (0.8; 1.8)	46.9 *** (29.3; 64.5)	17.2 *** (12.3; 22.1)	8.3 *** (2.7; 14.0)	<0.001
p value gender difference	0.08	0.01	0.09	0.5	
Bullying in school or elsewhere					
Total	24.5 (23.0; 26.1)	32.3 * (23.4; 41.3)	37.0 *** (33.6; 40.4)	26.4 (22.8; 30.1)	<0.001
Girls	25.7 (23.0; 28.4)	26.9 (16.0; 37.9)	38.3 *** (34.1; 42.6)	23.0 (18.5; 27.5)	<0.001
Boys	23.1 (20.8; 25.4)	39.5 * (23.0; 56.0)	33.0 ** (26.4; 39.5)	34.9 * (25.0; 44.8)	0.002
p value gender difference	0.2	0.2	0.2	0.05	
Psychological distress					
Total	43.8 (41.1; 46.6)	49.1 (39.6; 58.6)	62.3 *** (58.4; 66.2)	46.7 (41.3; 52.1)	<0.001
Girls	54.2 (52.3; 56.2)	53.3 (37.3; 69.4)	69.4 *** (65.6; 73.3)	49.5 (43.3; 55.6)	<0.001
Boys	31.2 (28.4; 34.1)	43.6 (28.9; 58.3)	41.2 ** (33.9; 48.5)	39.9 * (32.0; 47.8)	0.02
p value gender difference	<0.001	0.5	<0.001	0.05	
Low self-esteem					
Total	32 (29.7; 34.3)	39.4 (28.9; 49.9)	41.1 *** (35.6; 46.5)	37 (31.3; 42.7)	<0.001
Girls	37.8 (35.6; 40.0)	40 (24.5; 55.4)	46.8 ** (40.6; 52.9)	39.2 (32.4; 46.1)	0.003
Boys	24.9 (22.1; 27.8)	38.5 (23.9; 53.2)	24.3 (19.9; 28.8)	31.6 (20.4; 42.9)	0.17
p value gender difference	<0.001	0.89	<0.001	0.27	
Suicidal ideations					
Total	24.2 (20.0; 26.4)	33.9 * (23.1; 44.7)	46.4 *** (42.8; 50.0)	25.0 (19.5; 30.5)	<0.001
Girls	28.2 (25.5; 30.9)	33.5 (17.3; 49.8)	50.4 *** (45.8; 55.0)	26.7 (19.4; 34.0)	<0.001
Boys	19.4 (17.0; 21.7)	34.4 * (18.5; 50.4)	34.4 *** (29.0; 39.9)	21.0 (12.2; 29.7)	<0.001
p value gender difference	<0.001	0.94	0.001	0.36	

Difference tests among sexual orientation categories were conducted considering heterosexuals as reference.

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**Table 2**  
Prevalence of measures over cyberbullying, homophobic bullying and bullying at school or elsewhere (Weighted N = 6 540)

		<i>Prevalence of measures by cyberbullying</i>							
		Heterosexual % (CI) (N=5378)		Gay/Lesbian % (CI) (N=88)		Bisexual % (CI) (N=690)		Questioning % (CI) (N=358)	
		YES	NO	YES	NO	YES	NO	YES	NO
Total		59.3 (56.4; 62.2)	39.6 (36.4; 42.8)	70.0 (53.7; 86.3)	40.9 (29.7; 52.1)	81.0 (76.0; 86.0)	53.5 (47.9; 59.2)	65.4 (53.5; 77.4)	41.0 (34.5; 47.5)
Psychological distress	Girls	66.1 (62.8; 69.4)	50.3 (47.8; 52.8)	76.7 (58.4; 94.9)	43.7 (27.4; 60.0)	85.4 (81.7; 89.2)	61.0 (55.2; 66.7)	69.8 (55.8; 83.8)	43.3 (36.6; 50.0)
	Boys	47.1 (42.1; 52.1)	27.7 (25.1; 30.3)	60.7 (35.4; 86.1)	37.2 (19.9; 54.5)	61.5 (46.0; 77.0)	34.6 (24.9; 44.2)	55.5 (39.2; 71.7)	35.1 (24.1; 45.8)
Total		40.6 (36.6; 44.6)	29.6 (27.4; 31.8)	38.20 (22.8; 53.5)	40.0 (28.1; 52.1)	54.30 (47.8; 60.7)	34.8 (28.4; 41.1)	44.50 (33.3; 55.8)	34.2 (27.9; 40.5)
Low self-esteem	Girls	45.2 (40.6; 49.8)	35.3 (33.4; 37.3)	46.1 (20.6; 71.6)	37.6 (19.8; 55.4)	59.2 (52.3; 66.1)	39.9 (32.3; 47.6)	51.5 (37.5; 65.6)	35.5 (28.2; 42.7)
	Boys	32.5 (27.2; 37.9)	23.2 (20.7; 25.7)	27.2 (3.3; 51.0)	43.3 (24.2; 62.5)	32.60 (19.8; 45.3)	21.7 (17.0; 26.4)	29.0 (9.5; 48.4)	31.0 (20.6; 41.4)
Total		38.5 (34.8; 42.2)	20.0 (17.9; 22.0)	57.6 (38.6; 76.6)	24.6 (14.3; 35.0)	65.4 (57.8; 72.9)	37.4 (33.0; 41.9)	39.9 (30.0; 49.7)	20.2 (14.8; 25.6)
Suicidal ideation	Girls	42.4 (38.3; 46.6)	23.2 (20.5; 26.0)	55.6 (32.0; 79.3)	24.7 (9.6; 39.7)	67.8 (59.8; 75.8)	41.3 (35.9; 46.7)	37.1 (24.1; 50.1)	23.4 (16.5; 30.2)
	Boys	31.5 (26.5; 36.4)	16.4 (14.4; 18.3)	60.5 (26.3; 91.7)	24.6 (8.6; 40.6)	54.8 (40.2; 69.4)	27.6 (21.0; 34.2)	46.0 (25.8; 66.2)	12.2 (3.9; 20.5)

  

		<i>Prevalence of measures by homophobic bullying</i>							
		Heterosexual % (CI) (N=5378)		Gay/Lesbian % (CI) (N=88)		Bisexual % (CI) (N=690)		Questioning % (CI) (N=358)	
		YES	NO	YES	NO	YES	NO	YES	NO
Psychological distress	Total	63.9 (54.3; 73.6)	43.5 (40.6; 46.3)	55.8 (37.9; 73.7)	45.4 (34.5; 56.3)	76.6 (68.7; 84.4)	60.3 (56.1; 64.6)	79.5 (61.1; 97.9)	44.4 (38.9; 49.9)
	Girls	79.3 (64.0; 94.7)	53.7 (51.6; 55.8)	91.7 (72.1; 100)	45.2 (29.7; 60.5)	88.3 (81.5; 95.0)	67.1 (62.9; 71.3)	91.6 (77.2; 100)	46.6 (40.4; 52.9)
	Boys	33.8 (12.1; 55.6)	30.9 (28.1; 33.8)	39.6 (18.7; 60.5)	45.9 (25.6; 66.2)	51.8 (36.5; 67.2)	38.9 (30.9; 46.9)	55.8 (23.5; 88.1)	38.8 (31.4; 46.2)
Low self-esteem	Total	48.40 (39.8; 57.0)	31.7 (29.4; 34.0)	48.80 (28.3; 69.4)	34.6 (21.9; 47.4)	50.80 (42.0; 59.6)	39.8 (33.9; 45.7)	36.8 (19.6; 54.1)	36.8 (31.2; 42.3)
	Girls	48.0 (37.2; 58.9)	37.6 (35.3; 39.8)	64.3 (25.7; 100)	34.5 (18.7; 50.3)	58.4 (44.6; 72.1)	45.3 (38.9; 51.7)	42.8 (25.0; 60.6)	39.1 (31.9; 46.3)
	Boys	49.2 (33.8; 64.7)	24.5 (21.8; 27.2)	41.9 (20.0; 63.7)	34.9 (15.6; 54.3)	34.8 (17.5; 52.1)	22.1 (17.2; 27.1)	25.50 (0; 59.0)	30.9 (20.4; 41.4)
Suicidal ideation	Total	42.9 (28.9; 56.9)	23.7 (21.5; 25.9)	60.2 (43.4; 77.0)	21.8 (10.8; 32.9)	69.2 (59.4; 79.0)	43.0 (39.6; 46.5)	51.1 (37.6; 64.6)	23.1 (17.5; 28.7)
	Girls	49.0 (31.9; 66.1)	27.6 (25.0; 30.3)	94.4 (82.4; 100)	20.9 (9.2; 32.7)	76.2 (63.7; 88.7)	47.1 (42.9; 51.3)	59.0 (44.7; 73.3)	24.5 (17.2; 31.9)
	Boys	30.9 (9.6; 52.2)	18.8 (16.6; 21.1)	44.8 (28.3; 61.3)	23.7 (1.3; 46.1)	54.3 (40.6; 68.0)	30.1 (24.5; 35.6)	35.6 (7.6; 63.5)	19.5 (10.9; 28.1)

*Prevalence of measures by bullying at school or elsewhere*

	Heterosexual % (CI) (N=5378)		Gay/Lesbian % (CI) (N=88)		Bisexual % (CI) (N=690)		Questioning % (CI) (N=358)	
	YES	NO	YES	NO	YES	NO	YES	NO
Psychological distress								
Total	56.0 (52.3; 59.6)	39.9 (36.7; 43.0)	54.4 (36.3; 72.6)	46.8 (37.4; 43.0)	72.6 (67.2; 78.0)	56.6 (50.9; 62.2)	54.6 (43.0; 66.3)	44.1 (38.5; 49.7)
Girls	66.4 (62.0; 70.9)	50.0 (47.9; 52.4)	72.6 (48.1; 97.1)	45.6 (28.7; 62.3)	76.8 (71.6; 82.0)	65.2 (59.0; 71.4)	63.2 (50.9; 75.6)	45.5 (39.1; 51.9)
Boys	41.6 (37.4; 45.9)	27.7 (24.5; 30.9)	38.0 (17.3; 58.6)	48.8 (33.0; 64.7)	58.1 (43.8; 72.4)	32.8 (23.7; 41.8)	40.6 (22.4; 58.8)	40.1 (29.7; 50.5)
Low self-esteem								
Total	37.9 (34.7; 41.1)	30.0 (27.5; 32.4)	44.5 (28.4; 60.5)	37.3 (24.8; 49.8)	48.6 (43.4; 53.9)	36.6 (29.9; 43.4)	37.4 (27.4; 47.3)	36.6 (30.7; 42.4)
Girls	42.3 (38.2; 46.3)	36.2 (33.7; 38.7)	54.2 (30.0; 78.3)	34.1 (17.7; 50.6)	53.8 (46.3; 61.3)	42.3 (34.7; 49.8)	44.3 (31.1; 57.4)	37.9 (31.1; 44.7)
Boys	32.0 (27.0; 37.0)	22.5 (20.0; 25.0)	35.7 (14.4; 56.9)	42.4 (23.9; 60.9)	30.8 (19.5; 42.1)	21.1 (15.5; 26.8)	26.1 (9.4; 42.7)	32.7 (20.0; 45.5)
Suicidal ideation								
Total	37.5 (34.2; 40.9)	19.6 (17.5; 21.6)	48.2 (30.8; 65.5)	26.5 (15.7; 37.3)	60.8 (54.8; 66.9)	38.1 (34.4; 41.8)	38.7 (29.2; 48.2)	20.2 (14.3; 26.0)
Girls	42.7 (38.4; 47.1)	22.9 (20.7; 25.2)	54.6 (30.0; 79.2)	26.3 (9.7; 42.9)	65.0 (58.7; 71.3)	41.7 (36.7; 46.7)	39.8 (27.7; 52.0)	22.9 (15.7; 30.1)
Boys	30.4 (26.6; 34.2)	15.6 (13.3; 17.8)	42.4 (19.3; 65.5)	26.8 (9.6; 44.1)	46.4 (33.9; 58.8)	28.3 (20.4; 36.2)	36.9 (18.0; 55.9)	12.3 (3.9; 20.6)

**Table 3**

Logistic regression models (Weighted N = 6 540)

	Psychological Distress				Low self-esteem				Suicidal ideation			
	$\beta$	95% CI	RRR	$\beta$	95% CI	RRR	$\beta$	95% CI	RRR	$\beta$	95% CI	RRR
	<b>F (17, 23) = 56.4, <math>p &lt; 0.001</math></b>				<b>F (17, 21) = 24.1, <math>p &lt; 0.001</math></b>				<b>F (17, 24) = 98.65, <math>p &lt; 0.001</math></b>			
Cyberbullying	0.64 <sup>***</sup>	0.5	0.79	1.9	0.36 <sup>***</sup>	0.24	0.49	1.44	0.63 <sup>***</sup>	0.47	0.78	1.87
Bullying in school or elsewhere	0.40 <sup>***</sup>	0.25	0.56	1.5	0.18 <sup>**</sup>	0.06	0.31	1.2	0.65 <sup>***</sup>	0.51	0.78	1.91
Homophobic Bullying	0.61 <sup>***</sup>	0.29	0.93	1.85	0.38 <sup>*</sup>	0.09	0.68	1.47	0.73 <sup>***</sup>	0.38	1.07	2.07
Sexual Orientation Groups (ref. cat. Heterosexual)												
Heterosexual girls	0.95 <sup>***</sup>	0.81	1.09	2.56	0.59 <sup>***</sup>	0.45	0.74	1.81	0.45 <sup>***</sup>	0.31	0.59	1.57
Lesbians	0.74 <sup>*</sup>	0.1	1.37	2.09	0.55	-0.09	1.19	1.73	0.55	-0.1	1.19	1.73
Gays	0.11	-0.47	0.7	1.12	0.44	-0.24	1.11	1.55	0.18	-0.56	0.92	1.19
Bisexual girls	1.45 <sup>***</sup>	1.22	1.67	4.25	0.88 <sup>***</sup>	0.6	1.14	2.4	1.22 <sup>***</sup>	1.04	1.4	3.4
Bisexual boys	0.24	-0.06	0.53	1.27	-0.11	-0.41	0.19	0.9	0.57 <sup>**</sup>	0.22	0.93	1.77
Questioning girls	0.77	0.56	0.97	2.16	0.66 <sup>***</sup>	0.37	0.96	1.94	0.37 <sup>*</sup>	0.05	0.68	1.44
Questioning boys	0.29	-0.3	0.62	1.34	0.21	-0.33	0.76	1.24	-0.08	-0.65	0.5	0.93
Ethnicity of parents (ref. cat. Quebecker or Canadian)												
Latino-American or African-American	-0.21	-0.45	0.04	0.81	-0.28	-0.54	-0.01	0.76	-0.29	-0.65	0.07	0.75
North African or Middle Eastern	0.16	-0.06	0.37	1.17	-0.40 <sup>**</sup>	-0.65	-0.15	0.67	-0.36 <sup>***</sup>	-0.55	-0.16	0.7
European	-0.09	-0.34	0.17	0.92	-0.11	-0.56	0.34	0.9	-0.14	-0.37	0.1	0.87
Asian	0.12	-0.13	0.37	1.13	-0.002	-0.21	0.21	1	0.30 <sup>*</sup>	0.06	0.53	1.35
Other	0.1	-0.16	0.36	1.11	-0.08	-0.4	0.25	0.93	0.14	-0.15	0.42	1.15
Mixed ethnicity	-0.02	-0.18	0.14	0.98	-0.15 <sup>*</sup>	-0.27	-0.02	0.86	0.19 <sup>*</sup>	0	0.38	1.21
Age	0.14 <sup>***</sup>	0.08	0.19	1.15	-0.01	-0.08	0.05	1	0.10 <sup>*</sup>	0.02	0.17	1.1

RRR: Relative Risk ratio;

\* :  $p < 0.05$ ;

\*\* :  $p < 0.01$ ;



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