

**SUICIDAL BEHAVIOUR AMONG LESBIAN, GAY AND
BISEXUAL YOUTH IN BRITISH COLUMBIA: RISK AND
PROTECTIVE FACTORS**

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ABSTRACT

Recent research has found elevated rates of victimization experiences which have been linked to suicide attempts both in the general population and among lesbian, gay, and bisexual youth. The current study evaluated reports of suicidal behaviour, risk factors (e.g., physical victimization, harassment, and discrimination) and protective factors (e.g., school connectedness and safety, family connectedness and self-esteem) and compared the rates by gender and sexual orientation using population-level data (N=). Logistic regressions compared whether higher risk factors and lower protective factors predicted suicide attempts across sexual orientation categories. The results demonstrated that lesbian, gay, and bisexual youth reported higher levels of suicidal behaviour and risk factors, and lower rates of protective factors. Victimization predicted suicide attempts and higher rates of protective factors were associated with lowered odds of a suicide attempt. The importance of interventions related to protective factors among lesbian, gay and bisexual youth and clinical and systemic implications are discussed.

Keywords: risk and protective factors; sexual orientation; youth; suicide; suicidal behaviour

DEDICATION

For my dear friends Jace and Adam

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1: INTRODUCTION

Adolescence is a time of change and growth. Youth are in the process of developing their own identity, their preferences, and their autonomy in the world. Sexuality develops during adolescence, which can be confusing for youth whose sexual attractions are not consistent with the expectations of the society in which they live or the family in which they are raised. Recent research has demonstrated elevated risk for negative health outcomes among lesbian, gay, and bisexual youth (e.g., Saewyc et al, 2007). Studies have demonstrated elevated rates of physical and sexual abuse, bullying and peer victimization, peer rejection, sexual harassment and discrimination among lesbian, gay and bisexual youth (e.g., Alameida et al, 2009). These negative experiences have also been linked to suicidal ideation and attempts both in the general population and in lesbian, gay, and bisexual (LGB) youth (e.g., Browosky, Resnick & Ireland, 2001).

The majority of lesbian, gay and bisexual youth do not consider or attempt suicide, and recent scientific inquiry has attempted to account for the differences in LGB youth who engage in suicidal behavior and those who do not. Different family, school, and individual factors have been demonstrated to protect LGB youth from suicidal behavior (e.g., Eisenberg & Resnick, 2006). Empirical investigation into these protective factors may aid in the understanding and development of potential interventions and prevention of suicidal behavior in at-

risk groups. This area of study has been expanding in recent years, and to date, there are a limited number of studies using population level Canadian data.

1.1 Suicide Rates

Recent statistics demonstrate that since 1970, the rate of suicide for young people (15 – 25 years of age) has risen 300%, with 1.5 per 100,000 youth aged 10-14 and 7 per 100,000 youth aged 15-19 committing suicide (Statistics Canada, 2010). Suicide is the second leading cause of death among Canadian youth aged 10-24, second only to motor vehicle accidents (Statistics Canada, 2010). Suicide can be an impulsive act, however many youth contemplate and attempt suicide. In fact, the most robust predictor of suicide is a previous suicide attempt (Bridge, Goldstein & Brent, 2006). In British Columbia in 2008, 12% of youth aged 12 - 18 reported seriously thinking about suicide, 5% said they attempted suicide, and among those who attempted suicide, 26% reported that their attempt required medical intervention (Smith et al, 2009). Females are twice as likely as males to attempt suicide (7% vs. 3%), however males tend to complete suicide at higher rates than females do (Statistics Canada, 2010). These rates refer to youth in general, however many specific groups of youth are at elevated risk for suicidal behaviour.

For lesbian, gay and bisexual youth (LGB) the rates of suicidal behaviour (i.e., ideation and attempts) are at least 2-to-8 times higher than the rates for heterosexual youth (e.g., Fergusson, Horwood & Beautrais, 1999; Remafedi et al., 1998; van Heeringen & Vinke, 2000). In British Columbia the risk is 28% for LGB youth versus 4% for heterosexual youth (Smith et al., 2009). These rates

vary by gender and sexual orientation status. In a recent study, Eisenberg and Resnick (2006) found that there was a significant difference between LGB females (52.4%) attempting suicide compared to heterosexual females (24.8%), and suicide attempts in LGB males (29%) compared to heterosexual males (12.6%).

Eisenberg and Resnick did not indicate differences between sexual minority orientations in their analyses, however other research has demonstrated differing rates of suicidal ideation and attempts depending on sexual orientation and gender. For example, one study examined trends in suicidality among LGB youth in 9 population-based high school surveys in North America and found that in some of the surveys examined, bisexual youth were more likely than gay or lesbian youth to consider or attempt suicide (Saewyc, et al., 2007). In previous cohorts of the BC Adolescent Health Survey (the same survey as is used in the current study) results demonstrated that bisexual males had higher age-adjusted odds of a suicide attempt than gay males, while lesbians showed higher age-adjusted odds of suicide attempts over bisexual females (Saewyc, et al, 2007). Although some studies demonstrate differences among categories of sexual minority (e.g., bisexual and homosexual), many studies examine data separately by gender, but tend to put sexual minority youth in one “LGB” group (e.g., van Heeringen & Vinke, 2000; Eisenberg & Resnick, 2006; Remafedi et al., 1998; Fergusson, Horwood & Beautrais, 1999). This does not allow for interpreting the nuanced differences that may be present among bisexual and homosexual

adolescents, which reduces the chances of designing specific interventions based on the needs of each group.

1.2 Risk Factors

Research has demonstrated a connection between sexual orientation and suicide attempts (Borowsky, Ireland, & Resnick, 2001), however this is not useful information when considering prevention and intervention for suicide. Research that focuses on modifiable risk factors is far more relevant and important for advancing change in this significant health disparity for LGB youth. Not only do some LGB youth report that their sexual orientation contributes to their suicidal behaviour, several studies have also found that it is the higher prevalence of risk factors for LGB youth that may account for the elevated rates of suicidal behaviour (Eisenberg & Resnick, 2006; Saewyc, 2007). Research has demonstrated increased rates of both individual risk factors including depression, anxiety, substance abuse, and environmental risk factors such as physical and sexual abuse, bullying, family conflict, school violence and harassment and discrimination (e.g., Resnick et al, 1997; Saewyc et al, 2007). The present study will focus on the environmental risk factors for suicidal behaviour.

1.2.1 Physical and Sexual Abuse

Physical and sexual abuse can predict negative outcomes during adolescence. In particular, recent research suggests that high rates of physical and sexual abuse may help to explain suicidal behavior among youth and recent

inquiry has also revealed that LGB youth experience physical and sexual abuse at a much greater rate than their heterosexual peers.

A recent study of 7 population-based surveys found that across Canada and the United States, sexual minority youth were more likely to experience physical and sexual abuse than heterosexual youth (Saewyc et al., 2006). Lesbian and bisexual females reported higher rates of sexual and physical abuse than heterosexual females and all male orientation groups. Bisexual youth were more than twice as likely as heterosexual youth to report both physical and sexual abuse, with the strongest differences seen in bisexual males (Saewyc et al., 2006); these findings have also been replicated in other similar studies (Goodenow et al., 2008; Borowsky, Ireland & Resnick, 2001). Not only are the rates of abuse experiences higher for LBG youth, there appears to be an increasing trend in the rates of physical and sexual abuse in the last ten years (Saewyc et al., 2006).

There appears to be a consensus in the literature that LGB youth who experience physical and sexual abuse are more likely to have negative health outcomes, such as a suicide attempt. Questions still remain unanswered with respect to abuse experiences and suicide attempts in LGB youth, in particular, how physical and sexual abuse may relate to other risk and protective factors in understanding suicidal behavior for LGB youth.

1.2.2 Discrimination and Harassment

It is well known that LGB youth are subject to a significant amount of discrimination. If any adolescent is subject to constant discrimination and stigma,

negative effects are likely to occur. In a study of perceived discrimination based on sexual orientation, homosexual, bisexual and transgendered youth were significantly more likely than heterosexual youth to report perceived discrimination based on their sexual orientation (33.7% vs. 4.3%) (Alameida et al., 2009). Moreover, the study demonstrated that significantly more sexual minority males experienced perceived discrimination than females and perceived discrimination accounted for higher levels of emotional distress in males but not females (Alameida et al., 2009). The latter result was not expected, but it was postulated that it may be due to the higher levels of depression in females overall. This study did not examine general discrimination (i.e., physical appearance, gender etc.) and it did not present differences among the different sexual orientation groups, which may have clarified the non-significant effect of discrimination leading to emotional distress for sexual minority females.

In another recent study, LGB youth who were not subject to homophobic bullying and harassment and were in a positive school climate reported lower rates of depression and suicidality than LGB youth in a positive school climate who experienced high levels of experiencing homophobic teasing (Birkett, Espelage, & Koenig, 2009). These results are significant in working toward lowering rates of suicidal behavior for LGB youth, and point to the impact that homophobic bullying and teasing has on the well-being of LGB youth. Several other studies have found significant relationships between harassment at school, and verbal and physical sexual harassment and increased rates of suicidal

behavior in LGB youth in the US (Almeida et al., 2009; Bontempo & D'Augelli, 2002; Williams et al., 2003).

Experiencing physical and sexual abuse, family conflict, school violence and harassment, violence victimization in the community, and discrimination are all risk factors that increase the vulnerability for suicidal behaviour for LGB youth (Saewyc, 2007, Resnick et al, 1997). Many of these risk factors can be connected to feelings of isolation that youth experience from belonging to a minority group, and the family and community stress and rejection that can be associated with others being aware of their sexual orientation. One study found that 48% of LGB youth who reported suicidal ideation revealed that the thoughts of suicide were partially related to their sexual orientation (D'Augelli, Hershberger, & Pilkington, 2001). Questions remain about whether elevated risk factors are due to stigma attached to endorsing a minority sexual sexual orientation, which is especially important in understanding the higher rates of suicidal behaviour in LGB youth, and working toward prevention and intervention of suicidal behaviour in LGB youth.

1.3 Protective Factors

Several risk factors and negative predictors of suicidal behaviour were outlined in the previous section,. Studies have shown that reducing risk factors alone is necessary but not sufficient to help facilitate healthy adolescent development (Saewyc & Tonkin, 2008). Hence, there has been a more recent trend in the literature to place an emphasis on factors that may act as assets for youth who are at risk (Saewyc et al, 2009). Such factors are called protective

factors, and are often referred to as situations and experiences that facilitate healthy development and serve to protect youth from negative outcomes (i.e., mental, physical, and emotional health problems) (Rutter, 1993). For youth in general, developmental assets such as having supportive home, school and community environments, having connected relationships with family members, friends and supportive adults are all factors that have been consistently linked to lower self-reported risk behaviours (Saewyc & Tonkin, 2008). Youth who had higher levels of family connectedness and school connectedness, for example, were significantly less likely to report a suicide attempt in the past year than those who reported low levels of these protective factors (Saewyc & Tonkin, 2008).

For vulnerable LGB youth, protective factors may serve to modify the detrimental effect that risk factors have on an already at-risk group. Protective factors occur on many levels, and for youth in the general population, the presence of different protective factors lowers the risk of suicidal behaviour (Eisenberg & Resnick, 2006). Unfortunately, in addition to higher levels of risk factors, studies have found lower rates of protective factors for LGB youth (Eisenberg & Resnick, 2006; Saewyc et al, 2009; Saewyc, 2007).

In their study reporting population level data in the United States, Eisenberg and Resnick (2006) investigated the role of protective factors in suicide risk for LGB youth. The authors found that LGB youth reported significantly lower rates of four protective factors they investigated: family connectedness, teacher caring, other adult caring, and perceived safety at

school. The authors reported a significant protective effect for family connectedness, other adult caring and feeling safe at school (Eisenberg & Resnick, 2006). This suggests that there is some level of protection from suicidal behaviour provided by having a close family, an adult in their lives who is involved and cares, and/or feeling safe when they are at school for LGB youth. In addition, the authors reported that predicted probabilities for suicidal behaviour indicate that if LGB youth reported the same levels of protective factors that heterosexual youth do, suicidal behaviour would be considerably lower in this group (Eisenberg & Resnick, 2006).

Other studies have corroborated the findings of Eisenberg and Resnick. For example, Borowsky, Ireland and Resnick (2001) found that family connectedness had a protective effect for attempting suicide across gender and racial groups of American youth. Ryan and colleagues (2009) also examined the link between negative health outcomes, ethnicity and family reactions to the child's sexual orientation and gender expression. They found that the effect of family holds across ethnicity but is significantly different across gender, with males reporting more rejection from family members than females. Their results indicated that parents and care givers play an important role in facilitating healthy outcomes for their adolescent children; youth who were at no or low levels of family rejection as a reaction to their sexual minority identity had significantly lower levels of risk behaviours like depression, suicidality, substance use and risky sexual behaviour (Ryan et al, 2009).

A recent review also concluded that research has demonstrated that LGB youth have significantly lower rates of supportive and caring family members, self-esteem, connectedness to and feeling safe at school (Saewyc, 2007). Goodneow et al. (2006) found that the higher suicide attempt rates in LGB youth disappeared when school connectedness was controlled for. Further, other recent studies have found reduced rates of suicide attempts for LGB youth who report higher levels of family connectedness, school connectedness, and feeling safe at school (Eisenberg & Resnick, 2006; Saewyc, Poon et al., 2007).

The aforementioned findings suggest that higher levels of certain protective factors in LGB youth may attenuate rates of suicidal behaviour in this group, and that perhaps if protective factors were enhanced there is a chance that suicidal behaviour may be lower for sexual minority youth. This lends credence to the need for continued scientific inquiry into the relationship between school, family and individual protective factors and suicidal behavior in LGB youth.

1.4 Summary

Recent research has suggested that family connectedness, self-esteem, and feeling safe at school and school connectedness are all significant protective factors against suicidal behaviour in LGB youth. There are several other environmental protective factors that have not yet been investigated, and further research is needed to replicate the findings to date. Moreover, much of the research investigating protective factors for suicidal behaviour, risk and

protective factors in LGB youth has come from the United States; therefore current estimates need to be provided from Canadian data.

Research to date has consistently demonstrated that suicidal behaviour risk factors are higher and protective factors are lower for LGB youth. Even though risk factors are elevated for LGB youth, there is some hope that protective factors may buffer suicidal behaviour for LGB youth as findings have indicated that if youth had the same levels of protective factors that heterosexual youth do, rates of suicidal behaviour would be much lower (Goodenow et al, 2006).

The current study intended to build on the past research, and investigate several relevant protective risk and factors and examine this with Canadian data. In particular, questions that arise from the current state of the literature include: what is the current prevalence of suicidal behavior among LGB youth; is it different across gender? Do LGB youth differ from heterosexual youth in their victimization experiences; do these experiences vary by gender and category of sexual orientation? Do risk factors predict suicide attempts for LGB youth? Are protective factors lower for LGB youth than for heterosexual teens; do they actually work to protect LGB youth from self-reported suicide attempts?

1.5 Hypotheses

A number of questions and hypotheses follow from the reviewed literature. The present study investigated several risk and protective factors for suicidal behavior in LGB youth in a sample of youth in British Columbia. The prevalence of suicidal behaviour was predicted to be higher for LGB youth than for their

heterosexual peers. In addition, the prevalence of victimization was predicted to be higher for LGB youth than for their heterosexual peers. Further, it was expected that victimization would be related to suicidal behaviour for LGB youth. It was also expected that compared to their heterosexual peers, LGB youth will report lower levels of five protective factors: family connectedness, school connectedness, school safety, and self-esteem. Finally, it was expected that LGB youth who have higher levels of the four protective factors would be less likely to report suicide attempts.

2: METHOD

2.1 Participants

In 2008, the McCreary Centre Society in conjunction with the British Columbia provincial Health Units, conducted a health status and risk behaviour survey of grade 7 through 12 students enrolled in public schools in B.C (AHS-IV). The present study only used data from the 2008 survey. Participation by each school district was voluntary with 50 of the 59 districts in the province participating in the survey, resulting in 92% participation of all students enrolled in grades 7 through 12 in public schools (Saewyc & Green, 2009). The sampling frame was all students in schools enrolled in participating school districts. The sample was gathered by randomly selecting classrooms within grades in schools within regions; classrooms in a school had to be chosen among courses that all students in that grade must take, to ensure equal probability of selection, stratified by geography and by grade (7 through 12).

For AHS IV, the target sample was 44,104 youth and the survey had an overall response rate of 66%, which resulted in 29, 315 respondents included in the final dataset (Saewyc & Green, 2009). There were no statistical differences among the number of participating in each grade nor were there significant differences among the number of participating males and females in the sample (Saewyc & Green, 2009). In school districts requiring signed student and parent consent the response rate was 53%, while in school districts that permitted

student consent with parental notification, the response rate was 83%. In districts with parental and student consent, a letter home included a consent form for parents to sign, and students were allowed to participate only if they brought the signed form back to school. In order to ensure anonymity, the signed parental consent forms were kept separately from the student surveys. In school districts with parental notification, parents were informed of the nature of the survey and encouraged to talk to their children about it, and student consent was required. Students received a student consent information sheet, and the public health nurses went over the consent/assent orally before the survey began, and ensured that students understood their participation, including their right to refuse or to skip questions or to stop at any time. In order to ensure anonymity of responses, the students' completion of the survey was considered consent. Trained public health nurses administered the survey and students were ensured that their participation was completely confidential, anonymous and voluntary. Students could choose not to participate at any point before or during the survey.

2.2 Measure

The 2008 BC Adolescent Health Survey (BC AHS) is a self-report questionnaire that consisted of 147 items. The questionnaire takes approximately 30 to 45 minutes to complete. Specific domains covered in the survey include: a) physical health, chronic illness/disability, and mental health; b) sexuality, STDs, and pregnancy; c) tobacco, drug, and alcohol use; d) physical activity, school achievement and self-esteem; e) nutrition, eating behaviours, and eating disorders; f) individual and family demographics; and g) behaviours that result in

intentional and unintentional injuries (Saewyc & Green, 2009). Most of the items on the AHS questionnaire were derived from previously developed and tested youth health surveys, including prior editions of the BC AHS. New questions were pilot-tested with each new cohort before full administration, and psychometric evaluation of scales is conducted following administration. Appendix A includes the questions that were drawn from the survey for the current study.

2.2.1 Suicidal Behaviour

Suicidal behaviour was assessed using three items that measure propensity for suicide. The following statement precedes the suicide scale questions: “sometimes people feel so depressed and hopeless about the future that they may consider killing themselves (attempting suicide).” The first question of interest addresses thoughts of suicide/ideation: “during the past 12 months, did you seriously consider killing yourself?” (coded as Y/N). The second question asks about suicide attempts: “during the past 12 months, how many times did you actually attempt suicide?” (coded as 0, 1, 2 or 3, 4 or 5, 6 or more times). Finally, the third question assesses the severity of a suicide attempt: “if you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?” (coded as Y/N). The answers to the suicidal behaviour questions were used in the analyses as the dependent variable(s).

2.2.2 School Connectedness

The school connectedness scale is comprised of 6 items assessing the extent to which students feel that they are a part of their school, whether their teachers like them, if they feel safe at school, and whether they are treated fairly by and get along well with teachers. The responses to the number of questions answered were averaged and standardized on a scale of 0 to 1, with higher scores suggesting higher connectedness. A psychometric evaluation of this scale shows high internal consistency reliability (Cronbach's alpha = .83), and confirmatory factor analysis identifies a reasonable fit for a single dimension to the scale (SRMR = .0990, RMSEA = .106, SFI = .95) (Saewyc & Homma, 2010). This scale has been validated by use in several population level studies in Canada and the United States (e.g., Eisenberg & Resnick, 2006; Saewyc et al., 2009)

2.2.3 School Safety

There are seven items pertaining to school safety. Youth are asked how often they feel safe at school, and are further asked locations where they may or may not feel safe (i.e., classroom, washrooms, hallways, library, cafeteria, outside on school property during school hours) with response options being "always/usually", "sometimes", or "rarely/never" for each location. The School Safety score was created by averaging the responses across the items comprising this scale, standardized on a scale of 0 to 1 (with 1 being highest perceived feelings of school safety). With respect to the psychometric properties of the scale, a recently conducted psychometric evaluation of the school safety

scale demonstrated both a strong internal consistency reliability (Cronbach's $\alpha=.90$), and a confirmatory factor analysis revealed a very good fit for a single-factor solution (RMSEA=.052, CFI=.99) (Saewyc & Homma, 2010).

2.2.4 Family Connectedness

There are 11 questions to measure family connectedness. The questions in this scale ask about the extent to which students feel that their family understands and pays attention to them, and whether their family has fun together. There are also questions asking about their relationships with mothers and fathers, for example, how close they feel and how much they feel cared about by their parents, whether their parents are warm and loving toward the youth. The family connectedness score is created by averaging the responses of the questions, and creating a standardized score on a scale of 0 to 1 (with 1 being the highest connectedness and 0 being the lowest). A psychometric evaluation of the scale has shown very high internal consistency reliability (Cronbach's $\alpha = .87$) and confirmatory factor analysis with polychoric correlations supports a moderate fit for a single factor (RMSEA=.076, CFI=.99) (Saewyc & Homma, 2010).

2.2.5 Victimization

For the purposes of studying victimization related to sexual orientation, 10 victimization variables were chosen from the survey for inclusion in analyses. These questions include items assessing ever being physically or sexually abused (including abuse by family members); being physically assaulted on the

way to or at school, excluded by peers, teased by peers, discriminated against or treated unfairly because of sexual orientation and physical appearance, being sexually harassed verbally and physically, and being bullied online in the last twelve months. For ease of analysis and interpretation, variables with more than one response option (i.e., experiencing the victimization never, once, more than once) were transformed into a dichotomous yes or no response.

2.2.6 Sexual Orientation

To measure sexual orientation, respondents can choose to identify as a) “100% heterosexual, b) mostly heterosexual, c) bisexual, d) mostly homosexual, e) 100% homosexual, or f) not sure.” The analysis combined the 100% heterosexual and mostly heterosexual into gay and lesbian groups and excluded the not sure group. This type of approach to measuring sexual orientation has been used in a number of population level surveys (e.g., Eisenberg & Resnick, 2006; Saewyc et al., 2009), and allows for more nuanced analyses about different categories of sexual orientation.

2.2.7 Self-Esteem

The self-esteem scale was adopted from the 2001 Minnesota Student Survey, which was originally derived from the Rosenberg Self-Esteem Scale. The scale includes 3 positive items about feeling good and satisfied with self, and being able to do things as well as other youth; it also includes 4 negative items regarding lack of pride, feeling that one is no good, that one can’t do anything right and that one’s life is not very useful. Response options are on a 1-4 likert

scale, and the negative items are reverse scored allowing for a score with higher values reflecting higher self-esteem. The items are averaged to produce a single self-esteem score that can range from 1 - 4.

3: DATA ANALYSIS PLAN

In studies with very large sample sizes, traditional statistical tests are typically uninformative. When sample size increases, standard error decreases, which allows very small differences to produce statistical significance, irrespective of the strength of the relationship. The complex samples modules analysis in SPSS is generally used for data analysis of population level data, as it adjusts for cluster-stratified sampling and population level data. However, given that this study examines LGB youth, which is a small subset of the sample (typically less than 5% of the population), standard data analytical procedures were used.

3.1 Hypothesis 1

To examine the hypothesis that lesbian, gay, or bisexual youth report higher rates of suicidal behaviour than heterosexual youth, separate chi-squares were run for males and females. Three chi-squares for both males and for females were run for each level of suicidal behaviour and sexual orientation (100% heterosexual, mostly heterosexual, lesbian, gay, bisexual): suicide attempt by sexual orientation, suicidal ideation by sexual orientation, and suicide attempt that results in an injury by sexual orientation.

3.2 Hypothesis 2

To examine the hypothesis that lesbian, gay or bisexual youth report higher rates of victimization than heterosexual youth, ten separate chi-squares

were run for males and females, with sexual orientation (100% heterosexual, mostly heterosexual, gay, bisexual) as the independent variable with each victimization variable as the dependent predictor.

3.3 Hypothesis 3

To examine whether victimization is related to suicidal behaviour, separate age-adjusted logistic regressions for males and females were run to determine whether any of the ten victimization variables predicts the odds of suicide attempts depending on sexual orientation.

3.4 Hypothesis 4

To examine the hypothesis that LGB youth have lower rates of protective factors than heterosexual youth, ANOVAs were done separately for males and females with sexual orientation as the groups variable (100% heterosexual, mostly heterosexual, lesbian, gay, bisexual) by each of the following protective factors: family connectedness, school connectedness, school safety, and self-esteem.

3.5 Hypothesis 5

The final hypothesis explored whether family connectedness, presence of a caring adult, school connectedness, school safety, and self-esteem reduce the odds of suicidal behaviour. Eight age-adjusted logistic regressions were run separately for gender with suicide attempt as the dependent variable, and sexual orientation and one of the four protective factors as the predictor variables.

4: RESULTS

4.1 Demographics

4.1.1 Gender, Age and Grade

Of the 29,315 youth who completed the survey, 29,267 reported their gender. Males comprise 48.1% of the sample while females make up 51.9% of the sample. The age of youth ranged from 12 years to 19 years, with an average age of 15 years. The youth sampled were in grades 7 to 12, and the average grade was grade 9.

4.1.2 Sexual Orientation

28,546 youth responded to the question assessing sexual orientation (97.4% of the total sample). Of these youth, 4.3% reported that they were unsure of their sexual orientation. While 83.8% of the youth indicated a 100% heterosexual orientation, 9.3% of the youth identified as having some degree of minority sexual orientation. 6.5% reported having a mostly heterosexual orientation; 2.1% reported they were bisexual; 0.3% reported they were mostly homosexual; and 0.4% reported they were 100% homosexual.

4.1.3 Sexual Orientation and Gender

Gender composition varies across levels of sexual orientation. Table 1 displays the prevalence of males and females identifying with each sexual orientation option, and the combined response rates for each response option.

Males and females equally comprised the mostly homosexual group, while the 100% heterosexual group and 100% homosexual groups were comprised of more males than females. On the other hand, females more often endorsed the mostly heterosexual and bisexual sexual orientation options.

4.1.4 Sexual Orientation and Age

There are significant differences in age depending on sexual orientation ($F(5) = 165.89, p = .000$) but not gender ($F(5) = 1.3, p = .262$). Table 2 displays the average ages for each orientation group for males and females. The 100% heterosexual group had a lower average age than the sexual minority orientation groups did.

With respect to specific group differences, Table 3 displays differences among the orientation groups. 100% heterosexual youth are significantly younger than youth who identify any other level of sexual orientation. Mostly heterosexual youth are significantly older than bisexual youth, while bisexual youth are significantly younger than mostly heterosexual and 100% homosexual (gay/lesbian) youth.

4.1.5 Data Treatment

Given that the mostly homosexual and 100% homosexual groups were similar, and have been combined in past research using this dataset (Saewyc et al., 2007), the two groups were combined for the remainder of the analysis and will be referred to as the “gay/lesbian” group. In addition, responses from youth who reported that they were “Not Sure” of their sexual orientation are excluded

from further analyses due to the ambiguity of this group, which is consistent with previous research using this dataset (e.g., Saewyc et al, 2007). In addition, past research and the present results indicate that sexual orientation varies by age, so when possible analyses controlled for age. Finally, all analyses were separated by gender, given that the composition of the sexual orientation groups varies by gender and it has been standard in past research to do so (e.g., Saewyc et al, 2007; Saewyc, Poon, et al., 2009). Unless otherwise indicated, alpha will be set at .05 for all tests of statistical significance.

4.2 Hypothesis 1

It was expected that youth who identify as gay/lesbian, bisexual or mostly heterosexual would report higher rates of suicidal ideation, attempts and serious suicide attempts requiring medical intervention than 100% heterosexual youth. The results confirm this hypothesis for both males and females.

4.2.1 Suicidal Ideation

The effect of age on the differences in sexual orientation and suicidal ideation was not significant for males (χ^2 (df=7) = 11.37, $p = .12$), but was significant for females (χ^2 (df=7) = 32.08, $p = .000$). Table 4 demonstrates that males and females who report mostly heterosexual, bisexual or gay/lesbian orientations experience higher levels of suicidal ideation than 100% Heterosexual youth. Chi-square analyses reveal that there are significant differences among suicidal ideation depending on sexual orientation for males (χ^2 (df=3) = 397.04, p

=.000) and females (χ^2 (df=3) = 611.1, p =.000), with youth reporting a minority sexual orientation having a higher prevalence of suicidal ideation.

4.2.2 Suicide Attempts

The effect of age on the differences in sexual orientation and suicide attempts was significant for males (χ^2 (df=7) = 14.89, p =.04), and females (χ^2 (df=7) = 44.26, p =.000). Table 5 displays the rates of suicide attempts by sexual orientation for males and females. Again, the rates are higher for sexual minority youth, with lesbians reporting the highest levels of suicide attempts. There is a significant difference in suicide attempts by sexual orientation for both males (χ^2 (df= 3) = 531.48, p =.000) and females (χ^2 (df=3) = 546.36, p =.000).

4.2.3 Serious Suicide Attempts

The effect of age on differences between sexual orientation and serious suicide attempts was significant for males (χ^2 (df=7) = 20.96, p =.004) but not for females (χ^2 (df=7) = 8.76, p =.27). In terms of serious suicide attempts requiring medical intervention, there is a significant difference for sexual orientation for both males (χ^2 (df=3) = 184.781, p =.000) and females (χ^2 (df=3) = 129.46, p =.000). Table 6 displays the rates of serious suicide attempts, by gender and sexual orientation.

The results of the analysis for suicidal behavior indicate that overall, males and females in the 100% Heterosexual group were less likely to engage in suicidal ideation, suicide attempts and serious suicide attempts. Overall youth who identified as mostly heterosexual, bisexual or gay/lesbian were more likely to

endorse suicidal ideation, suicide attempts and serious suicide attempts, with gay, lesbian and bisexual youth reporting the highest rates of suicidal behaviour.

4.3 Hypothesis 2

It was expected that youth who report Homosexual, Bisexual or Mostly Heterosexual sexual orientation would have higher rates of victimization than 100% Heterosexual youth. Table 7 presents the rates of victimization by sexual orientation for males, and Table 8 presents the rates of victimization by sexual orientation for females. The data presented below support this hypothesis. The second part of this hypothesis examined the relationship between sexual orientation, victimization and suicide attempts. It was expected that experiencing victimization would increase the odds of a suicide attempt for sexual minority youth.

4.3.1 Physical Abuse

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual would report higher levels of physical abuse than 100% heterosexual youth. The results confirm this hypothesis for both males and females. There is a significant difference for youth experiencing physical abuse by sexual orientation for both males (χ^2 (df=3) = 124.770, $p = .000$) and females (χ^2 (df=3) = 400.576, $p = .000$). Mostly heterosexual (23.6%), bisexual (37.7%) and gay (25.6%) males reported physical abuse more often than 100% Heterosexual males (13.4%). Lesbians (52.1%) reported higher rates of

experiencing physical abuse than bisexual (45.9%), mostly heterosexual, (31.1%) and 100% heterosexual (17.3%) females.

4.3.2 Sexual Abuse

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual would report higher levels of sexual abuse than 100% heterosexual youth. The results confirm this hypothesis for both males and females. There is a significant difference on the sexual orientation of youth experiencing sexual abuse for both males (χ^2 (df=3) = 374.746, $p = .000$) and females (χ^2 (df=3) = 412.289, $p = .000$).

Mostly heterosexual (6.0%), bisexual (22%) and gay (22.2%) males reported higher rates of sexual abuse than 100% Heterosexual males (2.4%). Mostly heterosexual (23.3%), bisexual (35.2%) and lesbian (35.2%) females reported higher rates of sexual abuse than 100% heterosexual females.

4.3.3 Physical Victimization at School

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual would report higher levels of being physically victimized at school than 100% heterosexual youth. The results confirm this hypothesis for both males and females. There is a significant difference in the prevalence of youth reporting physical victimization between the different sexual orientation groups for both males and females (χ^2 (df=3) = 114.25, $p = .000$) and females (χ^2 (df=3) = 315.11, $p = .000$).

Mostly heterosexual (19.5%), bisexual (33.3%) and gay (22.1%) males more often reported physical victimization at school than 100% heterosexual (11%) males. Also, lesbians (27.9%) reported a higher prevalence of physical victimization at school compared to bisexual (21.8%), mostly heterosexual (8%) and 100% heterosexual females (4.7%).

4.3.4 Internet Victimization

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual would report higher levels of experiencing internet victimization than 100% heterosexual youth. The results confirm this hypothesis for both males and females. There is a significant difference across the sexual orientation categories in the prevalence of youth reporting Internet Victimization for both males (χ^2 (df=3) = 112.04, $p = .000$) and females (χ^2 (df=3) = 183.68, $p = .000$).

Mostly heterosexual (20.9%), bisexual (25.7%) and gay (32.8%) males reported higher rates of Internet Victimization than 100% heterosexual (11.5%) males. Mostly heterosexual (30.3%), bisexual (39%) and lesbian (44.9%) females reported more Internet Victimization than 100% heterosexual (19.9%) females.

4.3.5 Physical/Appearance Discrimination

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual would report higher levels of discrimination based on their physical appearance than 100% heterosexual youth. The results confirm this hypothesis for both males and females. There was a significant difference between the four

categories of sexual orientation for youth reporting being discriminated based on their physical appearance for both males (χ^2 (df=3) = 120.52, $p = .000$) and females (χ^2 (df=3) = 312.193, $p = .000$).

Mostly heterosexual (26.6%), bisexual (39.7%) and homosexual (31%) males were more likely to report discrimination based on their physical appearance than 100% heterosexual (15.7%) males. A higher proportion of mostly heterosexual (27%), bisexual (42%) and lesbian (58%) females reported discrimination based on their appearance than 100% heterosexual (17%) females.

4.3.6 Sexual Orientation Discrimination

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual would report higher levels of discrimination based on their sexual orientation than 100% Heterosexual youth. The results confirm this hypothesis for both males and females. There was a significant difference between the four sexual orientation categories and youth reporting being discriminated against based on sexual orientation for males (χ^2 (df=3) = 1295.22, $p = .000$) and females (χ^2 (df=3) = 2412.66, $p = .000$).

Mostly heterosexual (17.5%), bisexual (42.3%) and gay (60.3%) males reported experiencing significantly more sexual orientation based discrimination than 100% heterosexual (3.8%) males. Mostly heterosexual (8.8%), bisexual (35.2%) and lesbian (69.6%) females reported significantly more sexual orientation based discrimination than 100% heterosexual (1.5%) females.

4.3.7 Verbal Sexual Harassment

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual would report a greater prevalence of verbal sexual harassment than 100% heterosexual youth. The results confirm this hypothesis for both males and females. There is a significant difference among the four sexual orientation categories for youth reporting being sexually harassed verbally for both males (χ^2 (df=3) = 117.77, p = .000) and females (χ^2 (df=3) = 198.73, p = .000).

Mostly heterosexual (47.3%), bisexual (63.4%) and gay (71.6%) males report a higher prevalence of verbal sexual harassment than 100% heterosexual (37.3%) males. Mostly heterosexual (71.2%), bisexual (72.3%) and lesbian (73.2%) females reported higher rates of verbal sexual harassment than 100% heterosexual (54.2%) females.

4.3.8 Physical Sexual Harassment

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual will report a greater prevalence of physical sexual harassment than 100% heterosexual youth. The results confirm this hypothesis for both males and females. There is a significant difference among the four sexual orientation categories for youth reporting being sexually harassed physically for both males (χ^2 (df=3) = 143.44, p = .000) and females (χ^2 (df=3) = 256.89, p = .000).

Mostly heterosexual (25.2%), bisexual (39.5%) and gay (34.5%) males report higher rates of physical sexual harassment than 100% heterosexual (14.6%) males. Mostly heterosexual (54.5%), bisexual (56.5%) and lesbian

(52.9%) females report higher rates of physical sexual harassment than 100% heterosexual (35.7%) females.

4.3.9 Teasing

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual will report a greater prevalence of being teased than 100% heterosexual youth. The results confirm this hypothesis for both males and females. There is a significant difference among the sexual orientation groups for being teased for both males (χ^2 (df=3) = 140.97, $p = .000$) and females (χ^2 (df=3) = 195.44, $p = .000$).

Mostly Heterosexual (40.2%), bisexual (54.7%) and gay (53.4%) males reported higher rates of teasing than 100% heterosexual (26.5%) males. Mostly Heterosexual (46.2%), bisexual (58.6%) and lesbian (71%) females reported a greater prevalence of teasing than 100% heterosexual (35%) females.

4.3.10 Exclusion

It was expected that youth who identify as lesbian/gay, bisexual or mostly heterosexual will report a greater prevalence of exclusion than 100% heterosexual youth. The results confirm this hypothesis for both males and females. There is a significant difference among the four sexual orientation categories for reporting being excluded for both males (χ^2 (df=3) = 152.36, $p = .000$) and females (χ^2 (df=3) = 143.42, $p = .000$).

Mostly heterosexual (40.7%), bisexual (45.3%) and homosexual (46.1%) males reported higher rates of exclusion than 100% heterosexual (23%) males.

Mostly heterosexual (47%), bisexual (55.1%) and lesbian (55.1%) females reported higher rates of exclusion than 100% heterosexual (35.4%) females.

4.4 Hypothesis 3

In order to compare the odds ratios of the predictive value of each victimization variable to a baseline, the logistic regression was run for males and females separately with only age and sexual orientation included in the model. Table 9 displays the odds ratios of a suicide attempt depending on sexual orientation for males and females. The results indicate that compared to 100% heterosexual males the odds of a suicide attempt for mostly heterosexual males were 4 times higher, 15 times higher for bisexual males and 13 times higher for gay males. The odds of a suicide attempt were 2 times more likely for mostly heterosexual females, 8 times more likely for bisexual females and 7 times more likely for lesbians compared to 100% heterosexual females.

4.4.1 Physical Abuse

Table 10 depicts the odds ratios for physical abuse predicting suicide attempts for males and females by sexual orientation. The odds of a suicide attempt were five times greater for males who reported physical abuse, and nearly five times greater for females. With physical abuse in the model, the odds of a suicide attempt decrease across gender and sexual orientation, but remain significant compared to heterosexual males and females.

4.4.2 Sexual Abuse

The odds ratios for sexual abuse predicting suicide attempts in males and females by sexual orientation are displayed in Table 11. For males who reported experiencing sexual abuse, the odds of a suicide attempt are eight times greater than for males who did not report experiencing sexual abuse. The odds of a suicide attempt were five times greater for females who reported being sexually abused than for females who were not sexually abused. With sexual abuse in the model the odds of a suicide attempt go down across gender and sexual orientation, but still remain significant compared to heterosexual males and females.

4.4.3 Physical Victimization at School

The odds ratios for physical victimization predicting suicide attempts by sexual orientation for males and females are presented in Table 12. The odds of a suicide attempt were more than seven times greater for males and more than five times greater for females who experience physical victimization at school. Across gender and sexual orientation, the odds of a suicide attempt go down with physical discrimination in the model, but remain significant compared to heterosexual males and females.

4.4.4 Internet Victimization

Table 13 displays the odds ratios for Internet Victimization predicting suicide attempts for males and females by sexual orientation. The odds of a suicide attempt were five times greater for males who experience internet bullying

and three times higher for females. With Internet Victimization in the model, the odds of a suicide attempt are reduced across gender and sexual orientation, but still remain significant compared to heterosexual males and females.

4.4.5 Physical/Appearance Discrimination

Table 14 displays the odds ratios for physical appearance discrimination predicting suicide attempts for males and females by sexual orientation. The results suggest that the odds of a suicide attempt were more than four times greater for males who endorse experiencing physical appearance discrimination, and more than three times greater for females who experience physical appearance discrimination. Compared to baseline, in this model, the odds of a suicide attempt are decreased across gender and sexual orientation, but still remain significant compared to heterosexual males and females.

4.4.6 Sexual Orientation Discrimination

Table 15 displays the odds ratios for discrimination based on sexual orientation predicting suicide attempts for males and females by sexual orientation. The findings demonstrate that the odds of a suicide attempt were four and a half times greater for males and three and a half times greater for females who report experiencing discrimination based on their sexual orientation than those who do not. With sexual orientation discrimination in the model, the odds of a suicide attempt decreased by more than half across gender and sexual orientation compared to heterosexual males and females.

4.4.7 Verbal Sexual Harassment

The odds ratios for verbal sexual harassment predicting suicide attempts by sexual orientation for males and females are presented in Table 16. The findings indicate that both males and females who experience verbal sexual harassment were two times more likely to attempt suicide than youth who are not subjected to this kind of victimization. With verbal sexual harassment included in the model, the odds of a suicide attempt go down across gender and sexual orientation, but still remain significant compared to heterosexual males and females.

4.4.8 Physical Sexual Harassment

Table 17 displays the odds ratios for teasing as a risk factor for a suicide attempt by sexual orientation for males and females. The findings indicate that the odds of a suicide attempts were three times greater for males who endorse physical sexual harassment, and two times greater for females who endorse physical sexual harassment than for those who do not. In addition, with physical sexual harassment included in the model, the odds of a suicide attempt go down across gender and sexual orientation, but still remain significant compared to heterosexual males and females.

4.4.9 Teasing

Table 18 displays the odds ratios for teasing as a risk factor for a suicide attempt by sexual orientation for males and females. The results indicate that the odds of a suicide attempt are three times greater for males and nearly three

times greater for females who said they had been teased compared than those who did not report being teased. With teasing in the model, the odds of a suicide attempt were reduced compared to baseline, but still remained significant across gender and sexual orientation compared to heterosexual males and females.

4.4.10 Exclusion

The odds ratios for exclusion as a predictor of suicide by sexual orientation for males and females are presented in Table 19. The findings indicate that the odds of a suicide attempt are three times greater for males who endorse being excluded and two times greater for females who endorse being excluded, compared to those who do not. With exclusion in the model, the odds of a suicide attempt became smaller but still were high and significant across gender and sexual orientation compared to heterosexual males and females.

4.5 Hypothesis 4

It was expected that lesbian/gay, bisexual and mostly heterosexual youth will report lower rates than 100% Heterosexual youth on the following protective factors: family connectedness, school connectedness, school safety, and self-esteem. Four ANOVAs controlling for age were run for both males and females to examine the differing effect of each of the protective factors for each sexual orientation group.

4.5.1 Self Esteem

Figure 3 displays the mean Self Esteem scores for males and females for each sexual orientation group. There were significant effects on Self Esteem and

sexual orientation for males ($F (df=3) = 202.12, p = .000$) and females ($F (df=3) = 229.94, p = .000$). Pair wise post-hoc comparisons reveal that gay/lesbian males and females report significantly lower levels of self esteem than mostly heterosexual ($p=.000$), and 100% heterosexual youth ($p=.000$) while levels of self esteem were not significantly different among bisexual males ($p=.951$) and females ($p=.622$) and gay/lesbian youth. Bisexual males ($p= .000$) and females ($p= .000$) reported significantly lower rates of self esteem than their 100% heterosexual and mostly heterosexual male and female counterparts. These results support the hypothesis that mostly heterosexual, bisexual and lesbian/gay youth experience lower levels of self esteem than heterosexual youth.

4.5.2 Family Connectedness

Figure 4 displays the mean family connectedness scores for males and females for each sexual orientation group. There were significant effects on family connectedness and sexual orientation for males ($F (df=3) = 96.77, p = .000$) and females ($F (df=3) = 184.23, p = .000$). Pair wise post-hoc comparisons reveal that gay/lesbian males and females report significantly lower levels of family connectedness than mostly heterosexual ($p=.000$) and 100% heterosexual youth ($p=.000$), in addition levels of family connectedness were significantly different among bisexual and gay males ($p=.036$), but not significantly different between bisexual females and lesbians ($p=.142$). Bisexual males ($p= .000$) and females ($p= .000$) reported significantly lower rates of family connectedness than their 100% heterosexual and mostly heterosexual male and female counterparts. These results support the hypothesis that mostly heterosexual, bisexual and

lesbian/gay youth experience lower levels of family connectedness than heterosexual youth.

4.5.3 School Connectedness

Figure 5 displays the mean School Connectedness scores for Males and Females for each sexual orientation group. Sexual orientation had a significant effect on school connectedness for males ($F(df=3) = 36.48, p = .000$) and females ($F(df=3) = 131.93, p = .000$). Pair wise post-hoc comparisons reveal that gay/lesbian males and females report significantly lower levels of school connectedness than mostly heterosexual ($p=.000$) and 100% heterosexual youth ($p=.000$). Further, levels of school connectedness were significantly different among bisexual females and lesbians ($p=.008$), but not significantly different between bisexual and males ($p=.717$). Bisexual males ($p= .000$) and females ($p=.000$) reported significantly lower rates of school connectedness than their 100% heterosexual and mostly heterosexual male and female counterparts. These results support the hypothesis that mostly heterosexual, bisexual and lesbian/gay youth experience lower levels of school connectedness than heterosexual youth.

4.5.4 School Safety

Figure 6 displays the mean School Safety scores for Males and Females for each sexual orientation group. Perceived feelings of school safety differed significantly by sexual orientation for both males ($F(df=3)= 76.47, p =.000$) and females ($F(df=3) = 92.90, p = .000$). Pair wise post-hoc comparisons reveal that gay/lesbian males and females report significantly lower levels of school safety

than mostly heterosexual ($p=.000$) and 100% heterosexual youth ($p=.000$), in addition levels of school safety were significantly different among bisexual females and lesbians ($p=.036$), but not significantly different between bisexual and gay males ($p=.714$). Bisexual males ($p= .000$) and females ($p= .000$) reported significantly lower rates of school safety than their 100% heterosexual and mostly heterosexual male and female counterparts. These results support the hypothesis that mostly heterosexual, bisexual and lesbian/gay youth experience lower levels of school safety than heterosexual youth.

4.6 Hypothesis 5

The final hypothesis examined whether family connectedness, school connectedness, school safety, and self-esteem have a protective effect on suicidal behaviour depending on sexual orientation. Separate age-adjusted logistic regressions were run for males and females with suicide attempt as the outcome variable and the protective factor, entered with sexual orientation as the predictor variable. As hypothesized, self esteem, family connectedness, school connectedness and school safety were all significant protective factors against suicide behaviours for both males and females.

4.6.1 Self Esteem

Table 20 displays the age-adjusted odds ratios for males and females. Males who reported high levels of self esteem had a 17% decrease in the odds of reporting a suicide attempt. With self esteem in the model, even with high levels of self esteem mostly heterosexual males still had 2 times greater odds of

a suicide attempt than 100% heterosexual males while bisexual and gay males both had 5 times greater odds. However, given that these odds for gay and bisexual males are reduced by more than one third from the original model without the protective factor (see Table 9), the findings suggest that controlling for self esteem attenuates the relationship between sexual orientation and suicide attempts for sexual minority males.

Females who reported high levels of self esteem had a 21% decrease in the odds of reporting a suicide attempt. With self esteem in the model, even with high levels of self esteem mostly heterosexual females still had nearly two times greater odds of a suicide attempt than 100% heterosexual females while bisexual females and lesbians had 4 and 3 times greater odds respectively. In comparison to the original model without self esteem included, the odds of a suicide attempt are decreased by more than half for both lesbians and bisexual females, suggesting that controlling for self esteem attenuates the relationship between sexual orientation and suicide attempts for sexual minority females.

4.6.2 School Safety

Table 21 displays the age-adjusted odds ratios for family connectedness for males and females. Males who reported high levels of family connectedness had a 2% decrease in the odds of reporting a suicide attempt. With family connectedness in the model, even with high levels of family connectedness mostly heterosexual males still had 3 times greater odds of a suicide attempt than 100% heterosexual males while bisexual and gay males had 8 and 9 times greater odds respectively. However, given that these odds for gay and bisexual

males are reduced by approximately two thirds from the original model without the protective factor (see Table 9), the findings suggest that controlling for family connectedness attenuates the relationship between sexual orientation and suicide attempts for sexual minority males.

Females who reported high levels of family connectedness had a 2% decrease in the odds of reporting a suicide attempt. With family connectedness in the model, even with high levels of family connectedness mostly heterosexual females still had 2 times greater odds of a suicide attempt than 100% heterosexual females while bisexual females and lesbians had 4 and 3 times greater odds respectively. In comparison to the original model without family connectedness included, the odds of a suicide attempt are decreased by more than half for both lesbians and bisexual females, which suggests that controlling for family connectedness attenuates the relationship between sexual orientation and suicide attempts for sexual minority males.

4.6.3 School Connectedness

Table 22 displays the age-adjusted odds ratios for school connectedness for males and females. Males who reported high levels of school connectedness had a 1.2% decrease in the odds of reporting a suicide attempt. With school connectedness in the model, even with high levels of school connectedness mostly heterosexual males still had 4 times greater odds of a suicide attempt than 100% heterosexual males while bisexual and gay males had 10 and 9 times greater odds respectively. However, given that these odds for gay and bisexual males are reduced by more than two thirds from the original model without the

protective factor (see Table 9), suggesting that controlling for school connectedness attenuates the relationship between sexual orientation and suicide attempts for sexual minority males.

Females who reported high levels of school connectedness had a 2% decrease in the odds of reporting a suicide attempt. With school connectedness in the model, even with high levels of school connectedness mostly heterosexual females still had 2 times greater odds of a suicide attempt than 100% heterosexual females while bisexual females and lesbians had 5 and 3 times greater odds respectively. In comparison to the original model without school connectedness included, the odds of a suicide attempt are decreased by more than two thirds for lesbians and over 40% bisexual females, which implies that controlling for school connectedness attenuates the relationship between sexual orientation and suicide attempts for sexual minority females.

4.6.4 Family Connectedness

Table 23 displays the age-adjusted odds ratios for school safety and sexual orientation for males and females. Males who reported high levels of school safety had a 3.5% decrease in the odds of reporting a suicide attempt. With school safety in the model, even with high levels of school safety mostly heterosexual males still had 3 times greater odds of a suicide attempt than 100% heterosexual males while bisexual and gay males had 9 and 7 times greater odds respectively. However, given that these odds are reduced by 60% for bisexual males and over half for gay males from the original model (see Table 9),

controlling for school safety appears to attenuate the relationship between sexual orientation and suicide attempts for sexual minority males.

Females who reported high levels of school safety had a nearly 7% decrease in the odds of reporting a suicide attempt. With school safety in the model, even with high levels of school safety mostly heterosexual females still had 2 times greater odds of a suicide attempt than 100% heterosexual females while bisexual females and lesbians had 5 and 3 times greater odds respectively. In comparison to the original model without school safety included, the odds of a suicide attempt are decreased by more than two thirds for lesbians and over 40% bisexual females, which suggests that controlling for school safety attenuates the relationship between sexual orientation and suicide attempts for sexual minority females.

5: DISCUSSION

The results of the present study are consistent with previous research finding strong links between sexual orientation, suicidal behavior and risk and protective factors. This study adds to the current literature at a very timely juncture, given the recent wave of suicide among sexual minority youth documented across North America. Although both research and media have shown that LGB youth are at higher risk for suicidal behavior, attention to the need for interventions and preventive strategies for this at-risk group is still lacking.

Sexual minority youth represent over 9% of adolescents in British Columbia. Consistent with the first hypothesis, the findings demonstrated that overall, males and females in the 100% heterosexual group were less likely to engage in suicidal ideation, suicide attempts and serious suicide attempts. Conversely, both males and females who identified as mostly heterosexual, bisexual or homosexual were more likely to endorse suicidal ideation, suicide attempts and serious suicide attempts than Heterosexual youth. Homosexual males and females reported the highest rates of suicidal ideation, whereas bisexual males and females reported the highest rates of suicide attempts. These findings are consistent with previously reported rates of suicidal behavior and sexual orientation and provide a current estimate of suicidal behavior in LGB youth using Canadian population level data.

The findings were also consistent with the second hypothesis and indicate that sexual minority youth experience significantly higher levels of all of the victimization risk factors examined. Overall, sexual minority females reported the highest levels of victimization. Moreover, all of the victimization variables (sexual abuse, physical abuse, physical victimization at school, exclusion, teasing, physical appearance discrimination, sexual orientation discrimination, physical sexual harassment, verbal sexual harassment and Internet Victimization) examined significantly predicted suicide attempts for both males and females even when controlling for sexual orientation in the age-adjusted logistic regression model.

Victimization, abuse experiences, social exclusion, and bullying are all factors that are at least partly responsible for suicide attempts in LGB youth. For example, the regression model revealed that sexual orientation discrimination contributes to the higher rates of suicidal behavior than sexual orientation alone does. This finding reveals that social stigma about sexual orientation has significant effects on the odds of suicide attempts for LGB youth. What is alarming is that sexual orientation discrimination is entirely preventable. However, being targeted as a subject of victimization largely cannot be prevented by the individual youth themselves. The systems and community in which the adolescent lives hold some responsibility for keeping youth safe, and without some level of social and system change, this will continue to be a problem faced by LGB youth.

The results of the current study are consistent with previous findings of victimization in LGB youth, and add to the literature with current Canadian population level data that includes a number of family, social and peer victimization variables. The finding that LGB youth report significantly higher rates of victimization experiences is cause for concern and attention, particularly given that these risk experiences are uniformly preventable. The findings reveal the importance of the development of interventions for suicidal behavior designed to target specific at-risk groups. A recent policy paper suggested that school anti-bullying policies, teacher intervention when harassment occurs, school based support groups, and the inclusion of LGB issues in curriculum all promote safety and well-being among LGB youth and create a more tolerant school climate (Russell, Kosciw, Horn, & Saewyc, 2010). Further research to examine the effectiveness of such interventions is needed.

Protective factors also emerged as an important variable in understanding suicide attempts in LGB youth. First of all, sexual minority males and females reported significantly lower family connectedness, school connectedness, school safety and self-esteem than heterosexual and mostly heterosexual youth. Overall, the rates of protective factors were similar for gay/lesbian and bisexual males and females indicating that protective factors among homosexual and bisexual males and females may be similar.

Logistic regressions revealed that family connectedness, school connectedness, school safety and self-esteem contribute to a lowered risk for suicide attempts among sexual minority youth. This finding is extremely

encouraging for working towards decreasing suicidal behavior in LGB youth. Adolescents who attend school spend the majority of their time at the school. Given that school connectedness and school safety emerged as significant factors that reduce the odds of suicidal behavior in LGB youth, these are necessary targets of intervention at a system level within schools. Further, working on self-esteem enhancement for youth at the school level may have significant protective effects for suicidal behavior in LGB youth. There is also a potential, and demonstrated need for training or educational groups targeting parents of LGB youth to educate caregivers about the importance of family connectedness and acceptance for LGB youth. These are all areas that demonstrate significant potential as interventions that can serve as preventive strategies for suicidal behavior in LGB youth.

It is clear from the study that reporting high levels of family connectedness reduces the odds of a suicide attempt, therefore being engaged in a connected family, where one feels loved and secure, acts as an asset for youth, and offers some “protection” from suicidal behaviour. Furthermore, the finding that youth who feel connected and safe at school have lowered odds of suicide attempts has very practical implications. First of all, this means that youth who report low levels of school connection and safety are more likely to engage in suicidal behaviour than those with high levels of school connectedness. Preventive strategies at the school level can aim at addressing this protective factor by encouraging participation from all youth in school activities, creating a community

atmosphere where youth feel their voices are heard, and ensuring that all youth feel safe in the school.

The findings point to the importance of focusing on intervention strategies related to victimization in LGB youth. All of the victimization variables, many of which were specific to the victimization within the school environment, were significantly more common among LGB youth. This suggests that if fewer LGB youth were exposed to victimization, lowered rates of suicidal behavior may be observed. Acceptance and tolerance of sexual orientation is a starting point, and intervention programs should focus on this both at the community and school level.

It is clear from the findings that protective factors at school, at home and within the adolescent serve to reduce the risk of suicide attempts in LGB youth. These findings point to the significance of fostering these assets in youth. For example, given that school safety and connectedness emerged as significant protective factors for suicide attempts, programs focusing on enhancing these factors may serve to further reduce risk, and can be done at a systematic level.

Focusing on protective factors at the school level appears to be important in working towards reducing suicidal behavior in LGB youth. For example Gay Straight Alliances (GSAs) are school groups focused on reducing stigmatization, prejudice, discrimination, and harassment of LGB youth within the school. Recent research has demonstrated that students attending schools with GSAs report less hostile, and more supportive social climates (Szalacha, 2003) and report significantly lower rates of victimization and suicidal behaviour (Goodenow,

Szalacha & Westheimer, 2003) and GSAs may also function in reducing victimization (Goodenow et al., 2006). GSAs also may serve to enhance school connectedness for LGB youth. In one study, the higher suicide attempt rates in LGB youth disappeared when school connectedness was controlled for (Goodenow et al, 2006). It is possible that for LGB youth, being a part of a GSA or simply having a GSA at their school may function to increase feeling connected to their school, which in turn may reduce risk for suicidal behaviour. As such, identifying modifiable protective factors (i.e., having a GSA in place) at multiple levels is critical to reduction in suicide risk among LGB youth. Unfortunately studying the effect of GSA school membership was beyond the scope of the current study, but requires further investigation to understand how it may serve to reduce victimization and suicidal behavior for LGB youth.

One advantage of this research is that the results of this study are based on a large-scale population level survey of high school students, which includes a range of demographics of youth in B.C. The findings can be generalized to the wider population of Canadian high school students. It is hoped that this strength will help in the dissemination of the research to the greater community, as the results can be generalized to high school students, whereas more clinical studies tend to be limited in their external validity.

There are some limitations associated with conducting this type of research. First, because of the cross-sectional methodology, the study can only demonstrate increased risk, and not causation. Furthermore, the data have

known limitations of most self-report data, such as response sets, but the large random sample helps reduce the likelihood of some biases.

In addition to methodological issues, the data does not allow us to determine the reasons why the sexual minority youth are at greater risk, as the survey does not ask about the reason why the youth attempted or contemplated suicide. The suicide attempt or ideation may not have had to do with their sexuality or victimization, but could have been the result of another factor. This study did not ask whether youth have disclosed their sexuality to their family or community, and there is evidence to suggest that youth who have disclosed their sexual orientation are much different from those who have not (D'Augelli et al., 1998), and it is unclear whether coming out to family acts as a risk or protective factor. For example, one study found that youth who told at least one parent were more open about their sexual orientation than those who had not, however youth who disclosed their orientation also reported higher levels of physical and verbal abuse by family members and more suicidal behavior than those who had not disclosed their sexual orientation to their families (D'Augelli et al., 1998). On the other hand, youth who have come out may have more of a connection to the LGB community, in a school setting for example, which may act to protect them from suicidal behavior. These are questions that remain to be answered, but are important in understanding how to work towards early and systematic intervention for suicidal behaviour among LGB youth.

With respect to sexuality, the survey is administered during adolescence, which is marked by individual change, with sexuality being a variable that can

change drastically throughout the teenage years and into young adulthood. Finding one's sexual orientation is a developmental task of adolescence, and many youth may be in the middle of this process, or may not have embarked on the process yet. It could be that youth are in the process of deciding about their sexuality during the time, or perhaps they have not yet identified with any particular sexual orientation or have not even developed sexual attractions. In fact, the survey indicates that more than 4% of adolescents report that they are "not sure" of their sexual orientation. This group was not included in the analyses due to the ambiguity of the orientation, but it would be informative in further research to ask whether youth are not sure because they have not decided on a sexual orientation yet, or perhaps if they are not sure if they are heterosexual, bisexual or homosexual. This is an area of research that would benefit from further investigation.

Notwithstanding the higher levels of suicidal behavior and victimization and lower levels of protective factors among sexual minority males and females, it is important to note that these are not universal rates. Most sexual minority youth do not report engaging in suicidal behavior, and many do not report being victimized. Research often focuses on the negative correlates of sexual minority orientation, and not the strengths. However, it is important to highlight that the results of the present study demonstrated more than half of lesbians report physical appearance discrimination, sexual orientation discrimination, and physical abuse, and more than half of lesbians and bisexual females report verbal sexual harassment, physical sexual harassment, teasing, and exclusion.

Further, half of gay males reported sexual orientation victimization and more than half of gay and bisexual males reported verbal sexual harassment and teasing. These rates are high, but do not represent the experiences of all LGB youth.

The victimization experiences examined in this study are all completely preventable, and these results indicate the need for more attention to the victimization experiences of sexual minority youth, particularly for females. In addition to amelioration of victimization experiences for LGB youth, attention needs to be paid to enhancing protective factors. LGB youth consistently reported lower levels of all of the protective factors examined in this study. This study also demonstrated that higher levels of the protective factors attenuate suicide attempts, which is encouraging and merits further scientific exploration in terms of interventions and preventive strategies for suicidal adolescents. Moreover, there is an urgent need for research investigating the resilience of youth who report higher rates of victimization and lower rates of suicidal behavior to examine whether the protective factors still work for youth who experience exposure to victimization. Such a study may help to understand how to facilitate healthy outcomes among victimized LGB youth who have few protective resources to draw upon.

There are many avenues of research still to be embarked on, but the current study provided an up to date view on suicidal behavior and risk and protective factors among sexual minority youth. It is hoped that the results will put this topic of research into a Canadian context, and raise awareness for the

importance of further scientific inquiry in this area, and more social awareness of the health disparities among sexual minority youth.

APPENDICES

Appendix A – Adolescent Health Survey Questions

Suicidal Behaviour

“Sometimes people feel so depressed and hopeless about the future that they may consider killing themselves (attempting suicide).”

119. During the past 12 months, did you ever seriously consider killing yourself (attempting suicide)?

- Yes
- No

120. During the past 12 months, how many times did you actually attempt suicide?

- 0 times
- 1 time
- 2 or 3 times
- 4 or 5 times
- 6 or more times

121. If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning or overdose that had to be treated by a doctor or nurse?

I did not attempt suicide during the past 12 months

- Yes
- No

School Connectedness

37. How do you feel about going to school?

- Don't like school
- Like school some
- Like school very much

39. How much do you feel that your teachers care about you?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very much

42. How much do you agree or disagree with the following statements?

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I feel like I am part of my school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am happy to be at my school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teachers at my school treat me fairly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel safe at my school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

School Safety

130. How often do you feel safe at school? (mark one answer only)

- Always
- Often
- Sometimes
- Rarely
- Never

131. While at school, how often do you feel safe... (mark an answer for each one)

	Always/ Usually	Some- times	Rarely/ never
In your classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the washrooms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the hallways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the cafeteria	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outside on school property during school hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Family Connectedness

24. How close do you feel to your mother (or the person you consider to be your mother)?

- Not at all
- Very Little
- Somewhat

- Quite a bit
- Very much

Don't know or does not apply

25. How much do you think your mother (or the person you consider to be your mother) cares about you?

- Not at all
- Very Little
- Somewhat
- Quite a bit
- Very much

Don't know or does not apply

26. How close do you feel to your father (or the person you consider to be your father)?

- Not at all
- Very Little
- Somewhat
- Quite a bit
- Very much

Don't know or does not apply

27. How much do you think your father (or the person you consider to be your father) cares about you?

- Not at all
- Very Little
- Somewhat
- Quite a bit
- Very much

Don't know or does not apply

28. How true are the following statements?

Often true	Sometimes or somewhat true	Never or not true	Don't know/ does not apply
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Most of the time my mother (or the person I consider to be my mother)

is warm and loving toward me

○	○	○	○
---	---	---	---

Overall, I am satisfied with my

relationship with my mother (or the person I consider to be my mother)

Most of the time my father (or the person I consider to be my father) is warm and loving toward me

Overall, I am satisfied with my relationship with my father (or the person I consider to be my father)

29. How much do you feel that people in your family understand you?

- Not at all
- Some
- A lot

30. How much do you feel that you and your family have fun together?

- Not at all
- Some
- A lot

31. How much do you feel that your family pays attention to you?

- Not at all
- Some
- A lot

Victimization

122. During the past 12 months how many times (mark an answer for each one):

Have you had unwanted sexual comments, jokes or gestures directed at you?

- Never
- Once or twice
- 3 or more times

Has another person touched, grabbed, pinched or brushed against you in a sexual way (which you did not want)?

- Never
- Once or twice
- 3 or more times

123. Have you ever been physically abused or mistreated by anyone in your family or by anyone else?

- Yes
- No

124. Have you ever been sexually abused? Sexual abuse is when anyone (including a family member) touches you in a place you did not want to be touched or does something to you sexually which you did not want.

- Yes
- No

132. During the past 12 months while at school or on the way to and from school, how many times did another youth (mark an answer for each one):

Tease you or say something personal about you that made you feel bad or extremely uncomfortable

- Never
- Once
- 2 or more times

Kept you out of thing on purpose, exclude you from their group of friend or completely ignore you?

- Never
- Once
- 2 or more times

Physically attack or assault you?

- Never
- Once
- 2 or more times

134. In the past 12 months have you been discriminated against or treated unfairly because of your sexual orientation (being or thought to be gay or lesbian)?

- Yes
- No

135. In the past 12 months, have you been discriminated against or treated unfairly because of your physical appearance?

- Yes
- No

Sexual Orientation

88. People have different feelings about themselves when it comes to questions of being attracted to other people. Which of the following best describes your feelings?

- 100% heterosexual (attracted to persons of the opposite sex)
- Mostly heterosexual
- Bisexual (attracted to both males and females)
- Mostly homosexual
- 100% homosexual (“gay/lesbian”; attracted to persons of the same sex)
- Not sure

Self Esteem

108. How much do you agree with the following statements?

I usually feel good about myself

- Disagree
- Mostly disagree
- Mostly agree
- Agree

I am able to do things as well as most other people

- Disagree
- Mostly disagree
- Mostly agree
- Agree

On the whole I am satisfied with myself

- Disagree
- Mostly disagree
- Mostly agree
- Agree

I feel I do not have much to be proud of

- Disagree
- Mostly disagree
- Mostly agree
- Agree

Sometimes I think that I am no good

- Disagree
- Mostly disagree
- Mostly agree
- Agree

I feel that I can't do anything right

- Disagree
- Mostly disagree
- Mostly agree
- Agree

I feel that my life is not very useful

- Disagree
- Mostly disagree
- Mostly agree
- Agree

Appendix B – Tables and Figures

Table 1 Sexual Orientation for Males and Females

	100% hetero- sexual	Mostly hetero- sexual	Bisexual	Mostly homo- sexual	100% homo- sexual	Not sure
Male	90.1%	3.9%	1.1%	.3%	.6%	4.0%
Female	82.3%	9.2%	3.2%	.3%	.2%	4.8%
Combined	86.1%	6.7%	2.2%	.3%	.4%	4.4%

Table 2 Mean Age (SD) by Sexual Orientation for Males and Females

	100% hetero- sexual	Mostly hetero- sexual	Bisexual	Mostly homo- sexual	100% homo- sexual	Not sure
Male	14.98 (1.77)	15.47 (1.79)	15.49 (1.73)	15.75 (1.73)	15.72 (1.89)	13.70 (1.67)
Female	14.99 (1.78)	15.54 (1.64)	15.30 (1.43)	15.62 (1.44)	15.94 (2.19)	13.91 (1.81)

Table 3 Differences in age depending on sexual orientation category

	100% heterosexual	Mostly heterosexual	Bisexual	Mostly homosexual	100% homosexual
100% heterosexual	-	* (+)	* (+)	* (+)	* (+)
Mostly heterosexual	* (-)	-	* (-)		
Bisexual	* (-)	* (+)	-		* (+)
Mostly homosexual	* (-)			-	
100% homosexual	* (-)		* (-)		-

Chart read vertically for directionality; * = LSD significant at $p < .05$

Table 4 Suicidal Ideation for Males and Females by Sexual Orientation

	100% Hetero- sexual	Mostly Hetero- sexual	Bisexual	Gay/ Lesbian
Male Suicide Ideation	7.7%	22.9%	37.9%	33.9%
Female Suicide Ideation	11.5%	25.7%	43.6%	47.1%

Table 5 Suicide Attempts for Males and Females by Sexual Orientation

	100% Hetero- sexual	Mostly Hetero- sexual	Bisexual	Gay/ Lesbian
Male Suicide Attempts	2.4%	9.4%	26.8%	24.1%
Female Suicide Attempts	5.0%	12.5%	29.0%	25.7%

Table 6 Serious Suicide Attempts (requiring medical treatment) for Males and Females by Sexual Orientation

	100% Heterosexual	Mostly Heterosexual	Bisexual	Gay/ Lesbian
Male Serious Suicide Attempts	3.7%	11.6%	33.1%	33.8%
Female Serious Suicide Attempts	6.5%	10.3%	23.9%	51.7%

Table 7 Victimization for Males by Sexual Orientation

	100% Heterosexual	Mostly Heterosexual	Bisexual	Gay
Physical Abuse	13.4%	23.6%	37.7%	25.6%
Sexual Abuse	2.4%	6.0%	22.0%	22.2%
Physical Victimization at School	11.0%	19.5%	33.3%	22.1%
Internet Victimization	11.5%	20.9%	25.7%	32.8%
Physical/Appearance Discrimination	15.7%	26.6%	39.7%	31.0%
Sexual Orientation Discrimination	3.8%	17.5%	42.3%	60.3%
Verbal Sexual Harassment	37.3%	47.3%	63.4%	71.6%
Physical Sexual Harassment	14.6%	25.2%	39.5%	34.5%
Teasing	26.5%	40.2%	54.7%	53.4%
Exclusion	23.0%	40.7%	45.3%	46.1%

Table 8 Victimization for Females by Sexual Orientation

	100% Heterosexual	Mostly Heterosexual	Bisexual	Lesbian
Physical Abuse	17.3%	31.1%	45.9%	52.1%
Sexual Abuse	10.8%	23.3%	35.2%	35.2%
Physical Victimization at School	4.7%	8.0%	21.8%	27.9%
Internet Victimization	19.9%	30.3%	39.0%	44.9%
Physical/Appearance Discrimination	17.0%	27.0%	42.0%	58.0%
Sexual Orientation Discrimination	1.5%	8.8%	35.2%	69.6%
Verbal Sexual Harassment	54.2%	71.2%	72.3%	73.2%
Physical Sexual Harassment	35.7%	54.5%	56.5%	52.9%
Teasing	35.0%	46.2%	58.6%	71.0%
Exclusion	35.4%	47.0%	55.1%	55.1%

Table 9 Odds Ratios (95% Confidence Intervals) for suicide attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	0.004	.054, .06	.887
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	4.227	3.080, 5.802	.000
Bisexual	15.061	10.336, 21.948	.000
Gay	13.067	8.410, 20.301	.000
Females			
Age	0.11	.075, .145	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.897	2.413, 3.478	.000
Bisexual	8.139	6.543, 10.123	.000
Lesbian	7.148	4.146, 12.321	.000

Table 10 Odds Ratios (95% Confidence Intervals) for Physical Abuse and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	0.004	-.057, .062	.883
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.553	2.556, 4.94	.000
Bisexual	11.113	7.427, 16.629	.000
Gay	11.853	7.421, 18.93	.000
Physical Abuse	5.26	4.262, 6.49	.000
Females			
Age	0.134	.097, .169	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.381	1.968, 2.879	.000
Bisexual	5.411	4.277, 6.845	.000
Lesbian	4.533	2.565, 8.011	.000
Physical Abuse	4.806	4.165, 5.545	.000

Table 11 Odds Ratios (95% Confidence Intervals) for Sexual Abuse and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	0.015	-.045, .071	.615
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.798	2.729, 5.287	.000
Bisexual	9.885	6.493, 15.048	.000
Gay	8.045	4.824, 13.145	.000
Sexual Abuse	8.775	6.59, 11.684	.000
Females			
Age	0.146	.11, .181	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.42	2, 2.928	.000
Bisexual	5.631	4.447, 7.13	.000
Lesbian	5.053	2.827, 9.032	.000
Sexual Abuse	5.001	4.297, 5.82	.000

Table 12 Odds Ratios (95% Confidence Intervals) for Physical Victimization at School and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	1.047	.985, 1.114	.141
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.444	2.456, 4.282	.000
Bisexual	11.138	7.331, 16.922	.000
Gay	12.711	7.85	.000
Physical Victimization at School	7.735	6.225, 9.611	.000
Females			
Age	0.092	.053, .128	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.695	2.224, 3.265	.000
Bisexual	5.864	4.621, 7.441	.000
Lesbian	4.598	2.545, 8.31	.000
Physical Victimization at School	5.469	4.542, 6.584	.000

Table 13 Odds Ratios (95% Confidence Intervals) for Internet Victimization and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	1.109	.961, 1.081	.529
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.433	2.459, 4.792	.000
Bisexual	13.038	8.747, 19.436	.000
Gay	9.281	5.786, 14.889	.000
Internet Victimization	5.018	4.047, 6.224	.000
Females			
Age	0.079	0.04, 0.116	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.57	2.13, 3.1	.000
Bisexual	6.476	5.15, 8.145	.000
Lesbian	4.907	2.744, 8.744	.000
Internet Victimization	3.271	2.839, 3.769	.000

Table 14 Odds Ratios (95% Confidence Intervals) for Physical Appearance Discrimination and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	1.022	.963, 1.085	.471
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.585	2.582, 4.977	.000
Bisexual	11.546	7.743, 17.217	.000
Gay	11.215	7.036, 17.874	.000
Physical Appearance Discrimination	4.545	3.683, 5.609	.000
Females			
Age	0.076	.037, .113	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.494	2.066, 3.012	.000
Bisexual	5.783	4.586, 7.292	.000
Lesbian	4.144	2.334, 7.36	.000
Physical Appearance Discrimination	3.523	3.051, 4.069	.000

Table 15 Odds Ratios (95% Confidence Intervals) for Sexual Orientation Discrimination and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	1.015	0.957, 1.078	.614
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.107	2.220, 4.347	.000
Bisexual	7.602	4.979, 11.607	.000
Gay	4.967	3.026, 8.153	.000
Sexual Orientation Discrimination	4.772	3.631, 6.272	.000
Females			
Age	0.111	.074, .145	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.561	2.12, 3.095	.000
Bisexual	4.798	3.279, 6.172	.000
Lesbian	2.891	1.6, 5.223	.000
Sexual Orientation Discrimination	3.567	2.801, 4.459	.000

Table 16 Odds Ratios (95% Confidence Intervals) for Verbal Sexual Harassment and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	1.007	.950, 1.067	.820
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.891	2.823, 5.362	.000
Bisexual	12.629	8.069, 18.526	.000
Gay	10.314	6.585, 16.153	.000
Verbal Sexual Harassment	2.327	1.886, 2.870	.000
Females			
Age	0.13	.094, .165	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.609	2.17, 3.138	.000
Bisexual	7.248	5.806, 9.048	.000
Lesbian	6.467	3.732, 11.205	.000
Verbal Sexual Harassment	2.33	1.988, 2.73	.000

Table 17 Odds Ratios (95% Confidence Intervals) for Physical Sexual Harassment and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	0.009	-.050, .065	.757
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.364	2.624, 5.031	.000
Bisexual	11.914	8.062, 17.605	.000
Gay	10.837	6.878, 17.075	.000
Physical Sexual Harassment	3.112	2.512, 3.856	.000
Females			
Age	0.138	.102, .172	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.484	2.063, 2.991	.000
Bisexual	7.004	5.598, 8.763	.000
Lesbian	6.464	3.707, 11.271	.000
Physical Sexual Harassment	2.737	2.371, 3.158	.000

Table 18 Odds Ratios (95% Confidence Intervals) for Teasing and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	1.017	.958, 1.079	.581
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.629	2.624, 5.018	.000
Bisexual	11.927	8.07, 17.63	.000
Gay	10.1	6.407, 15.922	.000
Teasing	3.161	2.566, 3.893	.000
Females			
Age	0.089	.052, .126	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.608	2.164, 3.144	.000
Bisexual	6.419	5.116, 8.054	.000
Lesbian	4.862	2.767, 8.542	.000
Teasing	2.81	2.434, 3.245	.000

Table 19 Odds Ratios (95% Confidence Intervals) for Exclusion and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	1.019	.961, 1.081	.53
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.349	2.412, 4.648	.000
Bisexual	12.619	8.523, 18.684	.000
Gay	10.416	6.596, 16.446	.000
Exclusion	3.404	2.763, 4.193	.000
Females			
Age	0.098	.061, .133	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.664	2.213, 3.208	.000
Bisexual	6.889	5.501, 8.626	.000
Lesbian	5.79	3.20, 10.219	.000
Exclusion	2.126	1.848, 2.445	.000

Table 20 Odds Ratios (95% Confidence Intervals) for Self Esteem and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	0.024	-0.039, 0.082	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.361	1.668, 3.340	.000
Bisexual	5.494	3.504, 8.616	.000
Gay	5.195	3.113, 8.67	.000
Self Esteem	0.829	0.803, 0.851	.000
Females			
Age	0.125	0.085, 0.162	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	1.912	1.567, 2.334	.000
Bisexual	4.057	3.173, 5.187	.000
Lesbian	3.564	1.94, 6.548	.000
Self Esteem	0.788	0.766, 0.080	.000

Table 21 Odds Ratios (95% Confidence Intervals) for Family Connectedness and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	0.072	0.001, 0.13	.017
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.291	2.356, 4.597	.000
Bisexual	8.296	5.446, 12.639	.000
Gay	9.126	5.621, 14.818	.000
Family Connectedness	0.986	0.991, 0.978	.000
Females			
Age	0.153	0.12, 0.19	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.213	1.826, 2.682	.000
Bisexual	4.966	3.198, 6.295	.000
Lesbian	3.639	2.0, 6.622	.000
Family Connectedness	0.986	0.981, 0.990	.000

Table 22 Odds Ratios (95% Confidence Intervals) for School Connectedness and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	1.015	.955, 1.079	.634
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	4.141	2.965, 5.783	.000
Bisexual	10.115	6.609, 15.479	.000
Gay	9.733	5.951, 15.919	.000
School Connectedness	0.988	0.981, 0.993	.000
Females			
Age	0.132	0.095, 0.168	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.474	2.049, 2.98	.000
Bisexual	5.573	4.414, 7.035	.000
Lesbian	3.877	2.151, 6.989	.000
School Connectedness	0.978	0.968, 0.985	.000

Table 23 Odds Ratios (95% Confidence Intervals) for School Safety and Suicide Attempts by Gender

	OR	95% CI	<i>p</i>
Males			
Age	1.066	1.003, 1.133	.041
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	3.591	2.558, 5.043	.000
Bisexual	9.824	6.674, 14.908	.000
Gay	7.669	4.582, 12.837	.000
School Safety	0.965	0.951, 0.975	.000
Females			
Age	0.078	0.040, 0.115	.000
Sexual Orientation (100% Heterosexual is comparison)			.000
Mostly Heterosexual	2.732	2.262, 3.301	.000
Bisexual	5.864	4.637, 7.415	.000
Lesbian	3.514	1.926, 6.411	.000
School Safety	0.932	0.912, 0.948	.000

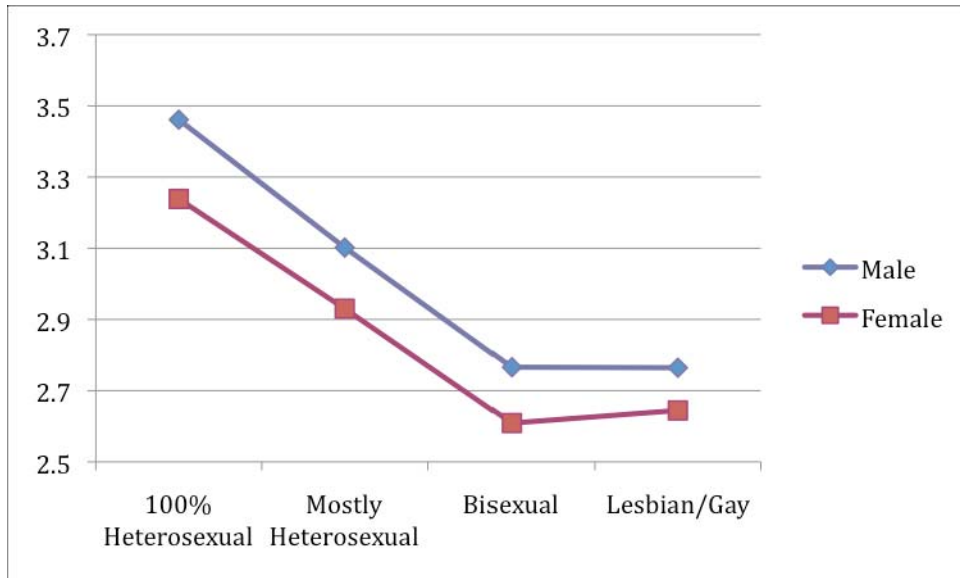


Figure 1 Mean Self Esteem Scores by Sexual Orientation for Males and Females

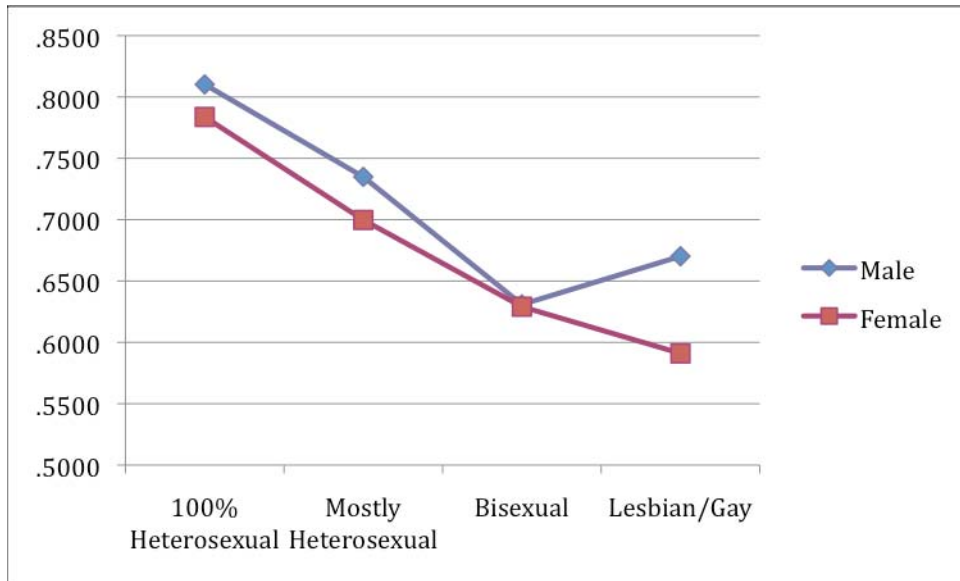


Figure 2 Mean Family Connectedness Scores by Sexual Orientation for Males and Females

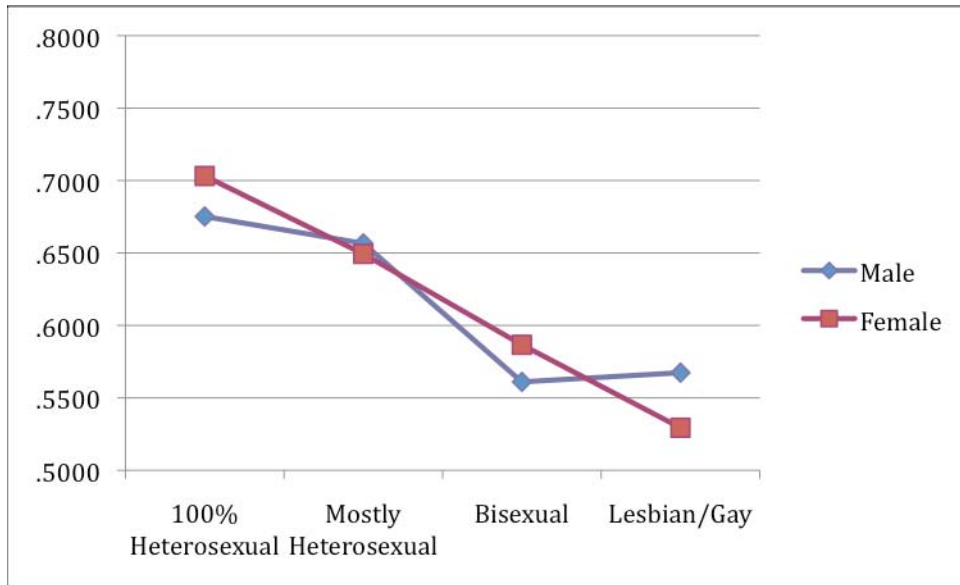


Figure 3 Mean School Connectedness Scores by Sexual Orientation for Males and Females

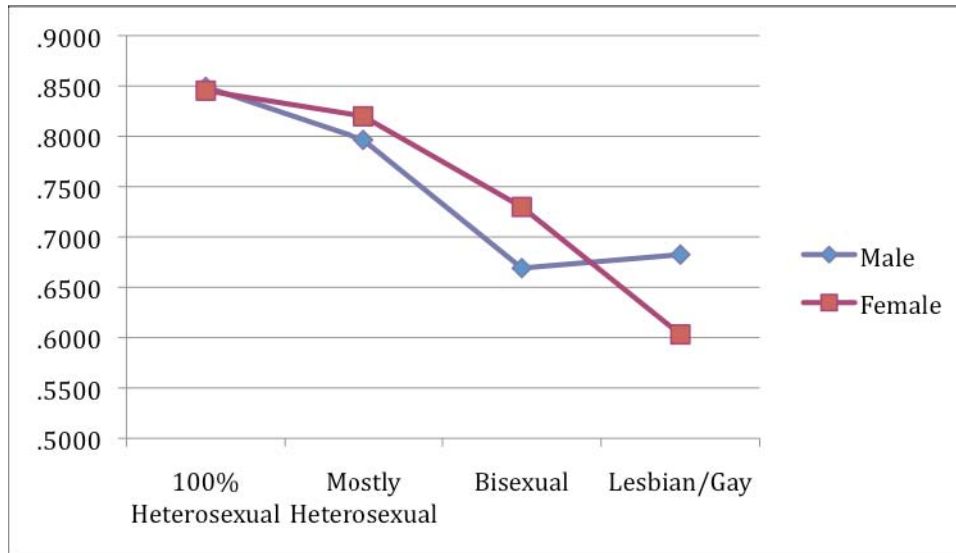


Figure 4 Mean School Safety Scores by Sexual Orientation for Males and Females

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