

Running head: SUICIDE RISK AND SEXUAL MINORITY YOUTH

Suicidal Ideation and Attempts among
Sexual Minority Youth Receiving Social Services

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Abstract

The increased risk for suicidal ideation and attempts among sexual minority youth has been documented in studies using both convenience samples and representative community samples. However, as most youth do not access social services, these studies do not necessarily represent the sexual minority youth that community-based social workers may encounter in their day-to-day practice. As such, the present study on risk and protective factors related to suicidality surveyed 182 sexual minority youth (ages 14-21) who sought assistance at a community-based social service agency in Denver, CO. Similar to existing literature, the findings suggest that risk factors related to suicidality include hopelessness, methamphetamine use, homelessness, and in-school victimization. However, unlike studies of the general youth population, this study found that African American and male sexual minority youth were not at lower risk of suicidality than sexual minority youth who were, respectively, white or female. Additionally, our findings suggest that the presence of gay-straight alliances in schools may function as a protective resource for sexual minority youth. Implications for social work practice are discussed.

Key words: suicide, lesbian, gay, youth, gay-straight alliance

Suicidal Ideation and Attempts among Sexual Minority Youth Receiving Social Services

For almost 20 years, research has documented an increased risk among sexual minority youth for suicidal thoughts and behavior (reviewed in McDaniel, Purcell & D'Augelli, 2001; D'Augelli et al., 2005). Early research, which showed that 21 to 42% of sexual minority youth studied had attempted suicide (reviewed in McDaniel et al., 2001), drew from small groups, used nonrandom sampling, and lacked heterosexual controls (Russell, 2003). More recently, studies using large, random and representative samples have shown that 25 to 35% of sexual minority adolescents reported a suicide attempt, compared to 9 to 13% of heterosexual youth (Garofalo et al., 1998; Remafedi, French, Story, Resnick & Blum, 1998; Russell & Joyner, 2001). In the largest study to date, using data from 11,940 high school students, same-sex oriented adolescents were twice as likely to report suicidal ideation and 2½ times as likely to have attempted suicide as heterosexual adolescents (Russell & Joyner, 2001).

In general, numerous risk factors for youth suicide have been established. These include depression, substance abuse, conduct and other disruptive disorders, poor interpersonal problem-solving skills, family history of suicidal behavior and psychopathology, poor parent-child relationships, physical and sexual abuse, school and work problems, media exposure to suicidal behavior, and lower levels of religiosity and family cohesion (reviewed in Gould, Greenberg, Velting, & Shaffer, 2003). Homelessness among adolescents has also been linked to elevated rates of suicidal behavior, with 30% of runaway youth reporting a suicide attempt in one study (Stiffman, 1989). Some of these risk factors appear to be more common among sexual minority youth than other youth, especially depression (Russell & Joyner, 2001; Safren & Heimberg, 1999), substance abuse (Russell & Joyner, 2001), and hopelessness (Safren & Heimberg, 1999).

Even controlling for these general risk factors, however, sexual orientation remained an independent predictor of suicidality in one large, national study (Russell & Joyner, 2001). This may partially be due to the fact that some risk factors for suicidality accrue uniquely to gay and lesbian youth as result of environmental stressors such as societal oppression and discrimination (McDaniel et al., 2001). These include victimization based on sexual identity (D'Augelli et al., 2005; Savin-Williams, 1994), rejection by peers or family because of sexual orientation (D'Augelli et al., 2005; Hershberger, Pilkington, & D'Augelli, 1997), internalized homophobia, fear of rejection and ridicule, and actual violence (Bontempo & D'Augelli, 2002). For these youth, schools are often the site of their harassment and victimization (Bontempo & D'Augelli, 2002) with students, teachers, and administrators often marginalizing them (Dennis & Harlow, 1986), thereby creating “a toxic environment” for the youth (van Wormer & McKinney, 2003, p. 410).

Recent studies drawing from community-based, representative samples have helped to establish the legitimacy of sexual minority youth's heightened needs for attention from the research and clinical communities, and are invaluable from epidemiologic, methodological, and policy perspectives. However, because the majority of youth in the general population – even those facing a mental health crisis such as a suicide attempt – do not use professional services (Busch & Horwitz, 2004; Kataoka, Zhang, & Wells, 2002), research using random samples largely conveys information about youth who may never encounter a social service professional. As such, research focusing specifically on those who do access social services is still needed in order to inform the day-to-day work of social workers in the development of interventions, policy, and further research. To help expand the knowledge base about sexual minority youth who use social services, the current study draws specifically from self-identified gay, lesbian,

bisexual, questioning, and transgender adolescents who sought services at an urban social service agency. A general and pragmatic question underlay the research and interpretation of results: How can knowledge about risk and protective factors for suicidal behavior among these youth help inform the practical, day-to-day work of social workers who are in a position to help?

Method

Sample Recruitment and Characteristics. Survey respondents were 142 youth and young adults (ages 14 to 21) who received services at Rainbow Alley, a Denver area program of the Gay, Lesbian, Bisexual, and Transgender Community Center of Colorado. The program provides support, education, advocacy and social activities for sexual minority youth and their allies. Surveys were administered during June 2004 and June 2005 as part of the program's annual evaluation process that has historically taken place in June. Youth completed the instruments in private. Of the final sample, 78 respondents (54.93%) completed the survey in 2004, and the remainder in 2005. No significant differences in variables were found between the two years.

Participation was requested of all center participants during a 3-week period, and data were collected until at least 100 surveys were completed for each year. Data on response rates were not collected, but facility staff report that virtually every person asked agreed to participate in the survey. Examination of agency records indicated that eight participants participated in both years' surveys. Demographic matching was used to eliminate the earlier of the two duplicate records for each of these participants.

After removal of duplicate records, the sample consisted of 182 participants. Because of our interest in victimization at school and the presence of GSAs (gay straight alliances), an additional 31 participants were dropped who were not currently attending school. In the context of this paper, we use the term school to encompass junior high/middle school, high school, and

college. Also, due to missing data on one or more of the variables of interest, an additional 9 (5.9%) records were excluded from the sample, resulting in a final sample size of 142. All variables except the presence of a GSA and victimization at school were examined to determine if significant differences emerged between participants who were dropped from the sample and those who remained in the sample. No significant differences emerged.

Measures. Most measures used in this study were modeled after questions in the National Youth Risk Behavior Surveillance survey (Centers for Disease Control and Prevention, 2004). Based on existing scholarship regarding suicidal ideation and attempts, several variables were used as controls: hopelessness, alcohol use, and methamphetamine use. Model variables include sociodemographic variables (gender and race), family variables (homelessness and family abuse), and school variables (in-school victimization and presence of a GSA).

Youth were asked whether they had felt so sad or hopeless for two weeks or more in a row that they had stopped doing some usual activities. Hopelessness is judged to be a more accurate predictor of suicide than depression (Beck, Steer, Kovacs, & Garrison, 1985). Respondents were asked to indicate the number of days they had ever had at least one alcoholic drink. From this, a dichotomized variable indicated whether they had used alcohol at least once. Various derivations of the variable were examined for their performance in the models, but the dichotomized variable was as informative as other options. Similarly, a dichotomous variable assessed methamphetamine use. Data collected about other types of drug use (e.g., opiates) were not included in the models due to collinearity.

As both gender and race differences in adolescent suicidality have been documented, both were examined as potential sociodemographic predictors. Participants were asked to identify their gender and were given five potential responses: female, male, trans/male,

trans/female, and other. Gender was recoded into two dichotomous variables, male and transgender, with female used as the reference category. Only male was retained in the reported models as differences did not emerge for transgender individuals. Although respondents indicated a wide array of responses for race/ethnicity, final models included only a dichotomous variable for African Americans (with whites and other races as the reference group) as preliminary analyses indicated no significant differences among other racial groups and because existing literature suggests that African Americans have decreased risk of suicidality compared to other racial groups in the U.S. that were available in our sample.

To capture verbal and physical abuse by family members, one question assessed verbal harassment and another physical harassment or attack in the last 12 months because of sexual orientation. The two variables were combined into a single dichotomous variable indicating whether any type of abuse had occurred. To assess homelessness, survey participants were asked to indicate the number of times they had slept (a) in a homeless shelter, (b) outside, or (c) on someone else's couch because they had nowhere else to stay. From this a dichotomous variable was constructed to indicate whether the respondent had experienced a spell of homelessness during the last year.

Respondents were asked if they had experienced harassment at school because of their sexual orientation. To test the potential role of GSAs as a protective factor, respondents were asked if their school had a GSA. Responses were "yes," "no," and "I don't know". Participants who said "I don't know" (n=11, 7.75%) were grouped with students who reported no GSA, based on the assumption that their school did not have an alliance or, if their school did, the youth did not perceive it as a resource since they were unaware of its existence.

Although most youth who think about or attempt suicide do not go on to die by suicide, researchers frequently use suicidal ideation as a proxy for suicide risk (Hawton et al., 1998). Suicidal ideation precedes nearly all suicides, and the largest risk factor for completed suicide is a prior suicide attempt (Harris & Barraclough, 1997). As such, two dependent variables were examined. First, youth were asked the number of times in the past 12 months they had attempted suicide. A dichotomous variable was created for at least one attempt. To capture a broader risk pool, a second dependent variable combined the suicide attempt variable with a question that asked if the respondent had seriously considered attempting suicide in the past 12 months.

Analyses. To test the hypothesis that variation in likelihood of suicidality and suicide attempts can be explained by demographics, family factors, and/or school factors beyond that explained by the control variables, five multivariate logistic regression analyses were conducted. Appropriate for binary dependent variables, logistic models result in odds ratios.

For each dependent variable, the first models contained only control variables, followed by three models where the control variables were combined with either the sociodemographic variables, the family factor variables, or the school factor variables. The final models combined the control variables with the variables that demonstrated at least marginal significance ($p < .10$) in prior models.

Results

Demographic characteristics and descriptive statistics are reported in Table 1. As the samples consists of young adults who are both high school- and college-aged, we examined whether or not controlling for school status influenced any of the results. Only one difference emerged in the models and that difference is reported in the discussion of the models below.

Model 1, control variables (hopelessness, alcohol use, methamphetamine use). Three control variables were examined in the first models. Youth who reported being hopeless were, relative to those not reporting hopelessness, over 9 times as likely to report suicidality and almost 5 times as likely to report a suicide attempt. Not surprisingly, these findings mirror the documented relationship between hopelessness and suicidality in both sexual minority youth and the general youth populations. See Tables 2 and 3 for regression model coefficients and standard errors.

Alcohol use was not a significant predictor of either suicidality or a suicide attempt. This is in contrast to much literature that suggests that alcohol use has a significant relationship with suicide (see Gould et al., 2003). Given that the overwhelming majority of youth in the sample had used alcohol at some point in their life (86.19%) and in the last 30 days (71.27%) the lack of variability may be partially responsible for failure to find significance.

Methamphetamine use significantly predicted suicidality, but not exclusively suicide attempts. Youth who reported methamphetamine use were 3 ½ times as likely to have thought about or attempted suicide. These findings are similar to recent studies documenting a relationship between methamphetamine use and suicidality (Callor et al., 2005; Zweben et al. 2004).

Model 2, sociodemographics (gender, race). While the literature suggests that young women are more likely than young men to experience suicidality or attempt suicide (Lewinsohn et al., 2001; Wunderlich et al., 2001), this finding has not been consistently supported in literature of sexual minority youth (D'Augelli, 2002). Similarly, we find that males were no more or less likely than were females to report suicidality or a suicide attempt.

Racial differences in suicidality have been documented indicating that African Americans were less likely to experience suicidality than are whites and other races (Garlow, Purselle & Heninger, 2005). However, we find no significant differences in likelihood of suicidality or reported attempts between African Americans and other races, suggesting that African American sexual minority youth may be at similar risk as those of other races.

Model 3, family factors (familial abuse, spells of homelessness). As with most of the existing literature, youth who experienced a spell of homelessness during the last 12 months were more likely to report suicidality. They were more than 4 times as likely to report suicidality, and almost 3 times as likely to report an attempt. Verbal or physical abuse by a family member was not a significant predictor. However, by limiting suicidality to include only serious attempts, recent work by D'Augelli and colleagues (2005) has found that parental psychological abuse or disapproval does have a significant role to play. Our inability to differentiate level of severity of attempt in this study may have obscured this important relationship. Finally, even though homelessness and prior abuse were weakly correlated in this study ($r=.26, p<.01$), family abuse remained statistically non-significant even after the removal of the homelessness variable.

Model 4, school factors (in-school victimization, presence of GSA). In-school victimization was a significant predictor of suicidality, but not of the smaller risk pool of suicide attempts alone. Those who reported victimization were 2.76 times as likely to report suicidality as those who did not. Finally, those who went to schools where there were GSAs were significantly less likely to both experience suicidality and to report suicide attempts. Students at schools with GSAs were only two-thirds as likely as students at non-GSA schools to report suicidality, and about one-third as likely to report an attempt. The influence of having at least one adult ally in the school was related to a decreased likelihood of suicidality, but the results

were not statistically significant (not shown). Although the adult ally and GSAs were significantly correlated ($r=.33, p<.001$), the GSAs remain significant even when including the adult ally variable in the models (not shown).

Model 5, full model. In Table 2, Model 5, we present the final multivariate model predicting suicidality. Hopelessness, methamphetamine use, and homelessness are all associated with increased odds of considering suicide. In-school victimization is marginally significant in predicting an increased likelihood, and the presence of a school GSA is marginally significant in predicting a decreased likelihood of suicidality. The presence of a GSA was the only factor tested that was associated with a lower odds of suicidality, suggesting that GSAs – or their perceived influence on the school culture – may serve a protective function for sexual minority youth. In other analyses, both grades and the presence of an adult ally were examined as potential protective factors, but neither were significant in any models examined. When we re-ran the full model including the dummy variable based on whether the respondent was high school aged or younger (18 or under) or college aged (19 or older), we found that the marginal significance of in-school victimization becomes non-significant in the model. Further analyses of this finding suggests that in-school victimization is significantly more influential for youth and young adults who are high school aged or younger than for college aged sexual minority youth. Given the flexibility in choosing colleges and the increased maturity level of college students, this finding is not particularly surprising.

Similar findings emerge for predicting suicide attempts only (See Table 3, Model 5). Hopelessness and homelessness were the two factors that predicted greater odds of reporting a suicide attempt. As with suicidality, the presence of a GSA was marginally significantly related to a decrease in likelihood of reporting suicide attempts.

Discussion

In line with earlier findings, our results indicate that sexual minority youth who seek social services are at a higher risk of suicidality than has been found in epidemiologic studies of the general youth population. Similarly, factors such as hopelessness, homelessness, in-school victimization, and methamphetamine use are associated with increased risks for these youth. Unlike research in the general youth population, African Americans and male sexual minority youth using social services had similar rates of suicidal behavior compared to white and female youth in the sample.

One unique association that was significant in the model examining school variables (Model 3) but only marginally significant in the full models is the association between the presence of GSAs and a decreased risk of both suicidality and suicide attempts. GSAs are gaining popularity as a means to improve school climate for sexual minority students and possibly reduce their psychological stress (Miceli, 2005). Whether the relationship found between the presence of a GSA and decreased risk of suicidality and suicide attempts is due to an actual improvement in school climate, or due to the perceptions of sexual minority youth of having resources available cannot be determined from the current data and warrants further exploration. It does suggest, however, that institutional support in the form of approved student clubs may be an effective strategy in supporting sexual minority youth. While neither having adult allies in the school, nor having good grades reached a level of significance in the models, this may simply be an artifact of the sample size.

Limitations. The study's focus on self-identified sexual minority youth who encounter community-based social services precludes generalizing the findings to the entire population of sexual minority youth. Given that early disclosure of a sexual minority identity is associated with

increased mental health problems (Orenstein, 2001; Savin-Williams & Ream, 2003), this study may paint a grimmer picture than if the sample included same aged same-sex attracted youth who have not yet identified themselves as nonheterosexual. At the same time, while not necessarily a reflection of all sexual minority youth, the sample biases reflect the reality of applied social work practice. Compared to youth randomly sampled in epidemiological surveys, it is likely that these sexual minority youth more accurately reflect those seen in agency settings.

The current study's focus on adolescents in one agency setting also precludes a thorough examination of high-functioning, well-adjusted sexual minority adolescents who identify no need for help. As such, caution must be taken not to negatively stereotype all sexual minority youth as problematic. As Savin-Williams (2005) points out, the majority of sexual minority youth are resilient, adaptive youth who – like their heterosexual counterparts – negotiate the struggles of adolescence successfully to become contributing members of society. Because the youth in the study received services from an agency that serves the sexual minority community, adolescents seeking assistance from agencies that do not have this focus may differ on issues such as degree of openness about their sexual orientation, comfortableness with their sexual identity, or in other similar ways. Similarly, because the sample is drawn from clients served by a single agency, the results are not necessarily generalizable to other agencies serving the same population.

The timing of the annual survey in June after some of the Denver area schools and colleges have ended for the year, may have had some impact on who was included in the sample. However, Rainbow Alley provides services year round experiencing both positive and negative fluctuations in the number of clients served in summer depending on the year. Additionally, it should be remembered that the sample only consists of youth who are currently in school, and the findings should not be generalized to youth who are no longer attending school.

Recent findings suggest the importance of differentiating whether or not suicidality is related directly to the youth's sexual orientation, as well as assessing the seriousness of suicide attempts for sexual minority youth (D'Augelli et al., 2005). Neither of these variables were available in our study, and while these aspects are important from a theoretical and epidemiologic perspective, treating all suicidality as if it were potentially lethal regardless of whether or not it is directly related to the youths' sexual orientation is probably the most prudent route of action for the practice of social workers. Finally, the use of single-item measures to capture complex constructs such as suicidal thoughts, suicide attempts, and substance abuse, while common in social science research, may obscure a more nuanced understanding of the relationships examined.

Although many of the youth lived in less than ideal environments – spells of homelessness, drug and alcohol use, in-school victimization, familial abuse – the majority demonstrate remarkable resilience. Almost 85% of those in school indicated that they were getting average or above average grades, with a substantial proportion (49.64%) reporting mostly A's and B's. A majority reported increased motivation for school and improvement in their relationships with adults as a result of their involvement in Rainbow Alley programming. Most had identified potential available avenues of support in their schools including adults who were allies or the presence of a GSA.

Implications for social work practice. Our results suggest a number of interventions to help social workers support sexual minority youth. Screening and monitoring for hopelessness should be a critical, on-going component of work with these youth, as should exploring drug and alcohol usage, especially use of methamphetamine. Because of the frequency of familial abuse, the appropriateness of interventions with families should be assessed. Many parents go through a

coming out process of their own and may need resources such as support groups or counseling as they do so. However, because parents may not be aware of their child's same-sex orientation, social workers must make the youth's safety the first priority, including identifying safe ways to contact the youth without inadvertently outing the youth. Outing a youth to their parents may result in homelessness for the youth or put the youth at greater risk for abuse.

Because of the increased risk for homelessness and the strength of the relationship between homelessness and suicidality, relationships with service providers who support homeless youth should be established. Social workers should watch for indicators of homelessness, such as youth sleeping over at friends most nights, as some youth may not consider themselves homeless. If at all possible, work should be done with the youth and their family to prevent homelessness. However, given that familial rejection may lead to homelessness when these youth come out to family members, social workers may want to explore the potential ramifications of coming out to one's family members, helping youth develop contingency plans should they decide to do so. This is not to imply that social workers should discourage youth from coming out to their families, but rather that social workers have a role to play in helping the youth think through their particular life context as part of the discernment process in deciding to whom and at what point in time one discloses their sexual orientation.

Social workers should ask about verbal and physical harassment at school, given the frequency of victimization at school. Schools have not historically protected sexual minority youth from bullying and victimization. Advocating for anti-bullying policies and training for teachers, staff, and students would help support sexual minority youth. Social workers can also play a significant role in supporting the development of GSAs by acting as club advisors, advocating with and educating school administrators, and publicizing the groups' availability.

While not emerging from the findings of this study, a number of additional suggestions for practice have been offered by other scholars that bear repeating. First, one should not convey the assumption that all clients are opposite-sex oriented (Appleby & Anastas, 1998). Using gender neutral language when inquiring about intimate relationships, and not assuming that all sexually active females need birth control are two such examples. Second, social workers should recognize that identity, behavior and attraction may not align neatly for some adolescents (Savin-Williams, 2005). Third, sexuality may be experienced as fluid for adolescents, perhaps more so than for previous generations (Diamond, 2000; Savin-Williams, 2005). Thus, an adolescent may identify as same-sex oriented at one point in time and opposite-sex oriented at a later point. Fourth, the act of claiming a non-heterosexual sexual identity does not imply that the adolescent is necessarily sexually active as some adolescents are aware of their same-sex attraction prior to engaging in sexual activity (Savin-Williams, 2005). Fifth, assumptions should not be made that problems are associated with sexual orientation or heterosexist culture, nor should the converse assumption, that sexual orientation or everyday heterosexism are unrelated to problems, be made (Appleby & Anastas, 1998; Hunter, Shannon, Knox & Martin, 1998). The role of the influence of such cultural variables on the youth's issues must be explicitly assessed (Rodriguez & Walls, 2000). Finally, practitioners should openly demonstrate being an ally to LGBT clients (van Den Bergh & Crisp, 2004) by participating in a Safe Zone program, displaying posters that indicate an accepting stance, or having books about lesbian and gay issues visible to young people.

While many sexual minority youth who use social services experience numerous life stressors, it is of critical importance that social workers see not only these environmental challenges in their lives, but also acknowledge and support the adaptability and resilience of these youth, including the strength inherent in seeking support.

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Table 1. Demographic Characteristics of Sample

	Variable	<i>n</i>	%
Gender	Female	63	44.37
	Male	73	51.41
	Transgender	6	4.23
Sexual Identity	Gay	60	42.86
	Lesbian	35	25.00
	Bisexual	32	22.86
	Questioning	9	6.43
	Pansexual/Other	6	4.23
Race/Ethnicity	African American	12	8.45
	Asian American	1	.70
	Bi/Multiracial	40	28.17
	Latino	29	20.42
	Native American	5	3.52
	White	55	38.73
Age	14-15	19	13.38
	16-17	71	50.00
	18-19	46	32.40
	20-21	6	4.22
Residence	Parents	38	26.95
	Relatives	10	7.09
	Placement	2	1.42
	On my own	6	4.26
	Friends	7	4.96
	Multiple	79	56.03
Afraid at school	Never	61	42.96
	Rarely	43	30.28
	Sometimes	30	21.13
	Most/all of the time	8	5.64
Harassed at school		75	52.82
Victimized by family		65	45.77
Alcohol use		119	83.80
Methamphetamine use		49	34.51
Felt hopeless		83	58.45
Suicidality		81	57.04
Suicide attempt		57	40.14

Table 2. Logistic Regression of Suicidality on Control Variables, Demographics, Family Factors, and School Factors

	Model 1	Model 2	Model 3	Model 4	Model 5
Hopelessness	9.33***	10.58***	8.95***	8.42***	8.71***
	(3.8999)	(4.6909)	(4.0201)	(3.7337)	(4.0741)
Alcohol use	2.32	2.17	2.66	1.73	2.27
	(1.3142)	(1.2993)	(1.6517)	(1.0378)	(1.4180)
Methamphetamine use	3.57**	3.62**	3.07*	3.22*	2.98*
	(1.6334)	(1.6683)	(1.4878)	(1.5263)	(1.4693)
Male		1.42			
		(0.6220)			
African American		.51			
		(0.3838)			
Homelessness			4.11**		3.76**
			(1.8407)		(1.7124)
Familial abuse			1.33		
			(.6014)		
In-school victimization				2.76*	2.37^
				(1.2273)	(1.0986)
Gay/straight alliance				0.34*	0.38^
				(0.1697)	(.1986)
<i>N</i>	142	142	142	142	142

Note. *** p<.001, ** p<.01, * p<.05, ^ p<.10. Standard error of odd ratios in parentheses.

Table 3. Logistic Regression of Suicide Attempts on Control Variables, Demographics, Family Factors, and School Factors

	Model 1	Model 2	Model 3	Model 4	Model 5
Hopelessness	4.95*** (2.0097)	4.92*** (2.0476)	4.17*** (1.7669)	4.55*** (1.9408)	4.79*** (2.0396)
Alcohol use	1.61 (0.8962)	1.61 (0.9065)	1.73 (0.9858)	1.31 (0.7477)	1.70 (0.9759)
Methamphetamine use	1.85 (0.7152)	1.85 (0.7151)	1.47 (.6043)	1.68 (0.6703)	1.53 (0.6273)
Male		0.98 (0.3796)			
African American		1.03 (0.6998)			
Homelessness			2.82* (1.1595)		2.98** (1.2137)
Familial abuse			1.76 (0.7124)		
In-school victimization				1.71 (0.7039)	
Gay/straight alliance				0.41* (0.1686)	0.48^ (0.2038)
<i>N</i>	142	142	142	142	142

Note. *** $p < .001$, ** $p < .01$, * $p < .05$, ^ $p < .10$. Standard error of odd ratios in parentheses.