JOURNAL OF SCHOOL HEALTH

American School Health Association
Connecting Health & Learning
www.ashaweb.org

RESEARCH ARTICLE

Trend Disparities in Emotional Distress and Suicidality Among Sexual Minority and Heterosexual Minnesota Adolescents From 1998 to 2010*

CAROLYN M. PORTA, PhD, MPH, RN, SANE-A, FAAN[a] RYAN J. WATSON, PhD[b] MARION DOULL, PhD[c] MARLA E. EISENBERG, ScD, MPH[d]
NATHAN GRUMDAHL, BSN, RN, PHN[e] ELIZABETH SAEWYC, PhD, RN, FSAHM, FCAHS, FAAN[f]

ABSTRACT

BACKGROUND: Sexual minority young people have demonstrated higher rates of emotional distress and suicidality in comparison to heterosexual peers. Research to date has not examined trends in these disparities, specifically, whether there have been disparity reductions or increases and how outcomes have differed over time by sex and sexual orientation group.

METHODS: Minnesota Student Survey data, collected from 9th and 12th graders in 3 cohorts (1998, 2004, 2010) were used to examine emotional distress and suicidality rates. Logistic regression analyses were completed to examine outcome changes over time within and across sexual orientation/sex groups.

RESULTS: With few exceptions, sexual minority youth are at increased risk of endorsing emotional distress and suicidality indicators in each surveyed year between 1998 and 2010. Young people with both-sex partners reported more emotional distress across all health indicators compared to their opposite-sex partnered peers. With a few exceptions, gaps in disparities between heterosexual and sexual minority have not changed from 2004 to 2010.

CONCLUSIONS: Disparities in emotional health persist among youth. Research is needed to advance understanding of mental health disparities, with consideration of sexual orientation differences and contextualized to sociocultural status and changes over time. Personalized prevention strategies are needed to promote adolescent mental health.

Keywords: adolescent mental health; sexual minority; suicidality; disparity; trend.

Citation: Porta CM, Watson RJ, Doull M, Eisenberg ME, Grumdahl N, Saewyc E. Trend disparities in emotional distress ad suicidality among sexual minority and heterosexual Minnesota adolescents from 1998 to 2010. J Sch Health. 2018; 88: 605-614.

Received on May 4, 2016
Accepted on October 18, 2017

Adolescence is a developmental period characterized generally by health and rapid growth, with minimal disability or chronic disease, which is why suicide, although rare, is the second leading cause of death for adolescents in the United States, and globally.[1,2] Consequences of adolescent suicide are significant and lasting, thereby necessitating improvement of our understanding of the dynamic or malleable

[a]Professor, (porta@umn.edu), School of Nursing, University of Minnesota, 5-160 Weaver Densford Hall, 308 Harvard Street SE, Minneapolis, MN 55455.

[b]Assistant Professor, (ryanwatson@uconn.edu), Department of Human Development and Family Studies, University of Connecticut, 348 Mansfield Road U1058, Storrs, CT, 06269, USA.

[c]Postdoctoral Fellow, (mariondoull@hotmail.com), Stigma and Resilience Among Vulnerable Youth Centre, School of Nursing, University of British Columbia, T222-2211 Wesbrook Mall, Vancouver, British Columbia V6T 2B5, Canada.

[d]Associate Professor and Director of Research, (eisen012@umn.edu), Division of General Pediatrics and Adolescent Health, Department of Pediatrics, University of Minnesota, 717 Delaware St. SE, Minneapolis, MN 55414.

[e]Nurse, (grumd004@umn.edu), School of Nursing, University of Minnesota, 5-160 Weaver Densford Hall, 308 Harvard Street SE, Minneapolis, MN 55455.

[f]Professor, (elizabeth.saewyc@ubc.ca), Stigma and Resilience Among Vulnerable Youth Centre, School of Nursing, University of British Columbia, T222-2211 Wesbrook Mall, Vancouver, British Columbia V6T 2B5, Canada.

Address correspondence to: Carolyn M. Porta, Professor, (porta@umn.edu), School of Nursing, University of Minnesota, 5-160 Weaver Densford Hall, 308 Harvard Street SE, Minneapolis, MN 55455.

This study was funded by grants #CPP 86374 and #MOP 119472 from the Canadian Institutes of Health Research. The authors acknowledge the Minnesota Departments of Health, Human Services, and Education for access to the Minnesota Student Surveys.

***Indicates that continuing education hours are available. Visit www.ashaweb.org and click on Continuing Education for more information.**

(ie, emotional distress) and static, or relatively unchangeable, risk factors (ie, sexual orientation, sex) and the interplay between these factors.

Suicidality, such as suicidal ideation and suicide attempts, is a well-established predictor of suicide completion among adolescents.[3,4] Similarly, emotional distress, such as feelings of sadness or hopelessness, has been associated with adolescent suicidality.[5] Furthermore, extensive cross-sectional research has demonstrated disparities in these malleable risk factors among lesbian, gay, bisexual, transgender, and/or queer/questioning (LGBTQ) youth as compared with their heterosexual, nontransgender peers, including higher levels of depressive symptoms and emotional distress as well as self-harm and suicidal ideation[6-10] and correlations of these risk factors with lifetime history of suicide attempts.[11] Explanations for these disparities include LGBTQ-specific risk factors for adolescent suicidality and emotional distress such as LGBTQ victimization and bullying,[11-14] which in one study was found to mediate half of the LGBT-heterosexual disparity in emotional distress.[15] It is important to note that risk status is not uniform across sexual minority groups, with bisexual youth significantly more likely than their single sex-attracted peers (gay, lesbian, heterosexual) to report a history of victimization, feeling less worthy to be alive, depressed mood, suicidal tendencies; and 4 to 5 times more likely to report suicide attempts.[16-18]

The past 15 years have demonstrated varying levels of progress in recognizing and respecting the equality and rights of LGBTQ persons across the globe. From US-based state legislation supporting same-sex marriage to school policies enforcing anti-bullying initiatives, there is evidence of institutional and societal shifting in values that could contribute positively to the emotional health and well-being of all young people, particularly LGBTQ youth. While much of the enacted stigma (ie, discrimination) experienced by LGBTQ youth occurs in school settings,[19,20] positive school environments with low levels of enacted stigma and bullying can serve to moderate negative outcomes for sexual minority youth. Moreover, LGBTQ-inclusive school policies, and the presence of gay-straight alliances (GSAs) are linked to reduced odds of discrimination and suicidality among LGB and heterosexual youth.[21] However, it is also plausible that this legislated value shift has increased antagonism from those opposing these initiatives, which could theoretically increase, rather than decrease, risks of being stigmatized, ostracized, bullied, harassed, or victimized. Prior analysis of adolescent population-level trend data available through 2003 has demonstrated effects of stigma on sexual minority youth (see Saewyc et al[7]), but the opportunity to explore the possible positive influence of macrolevel factors that have occurred in the United States since the early 2000s on individual-level adolescent experiences of social stigma (demonstrated by emotional distress and suicidality outcomes) has not been possible.

The purposes of this study, therefore, were to investigate (a) prevalence and trends of emotional distress and suicidality *within* sexually active adolescent sexual partner groups (ie, opposite-sex, both-sex, or same-sex partnered), by sex, (b) trends of emotional distress and suicidality *across* sexual partner groups, by sex, and (c) interaction trends (sexual partner groups and time interactions) in emotional distress and suicidality outcomes, by sex, to identify whether disparities or narrowing or widening for sexual minority youth in Minnesota.

Table 1. **Independent and Dependent Questions and Response Options**

Item	Question	Analytic Categories
Sexual orientation (sex of sexual partnered in last 12 months)	During the last 12 months, with how many different male (female) partners have you had sexual intercourse?	0 = none 1 = 1 person 2 = 2 persons 3 = 3 persons 4 = 4 persons 5 = 5 persons 6 = 6 or more persons
Felt you were under stress or pressure	During the last 30 days, have you felt you were under any stress or pressure?	1 = yes, almost more than I could take 2 = yes, quite a bit of pressure 3 = yes, more than usual 4 = yes, a little 5 = no
Felt sad	During the last 30 days, have you felt sad?	1 = all the time 2 = most of the time 3 = some of the time 4 = a little of the time 5 = none of the time
Felt so discouraged or hopeless	During the last 30 days, have you felt so discouraged or hopeless that you wondered if anything was worthwhile?	1 = extremely so, to the point that I have just about given up 2 = quite a bit 3 = some, enough to bother me 4 = a little bit 5 = not at all
Felt nervous, worried, or upset	During the last 30 days, have you felt nervous, worried, or upset?	1 = all the time 2 = most of the time 3 = some of the time 4 = a little of the time 5 = none of the time
Thought about killing yourself	Have you ever thought about killing yourself?	1 = no 2 = yes, during the last year 3 = yes, more than a year ago 4 = during past year and more than a year ago
Tried to kill yourself	Have you ever tried to kill yourself?	1 = no 2 = yes, during the last year 3 = yes, more than a year ago 4 = during past year and more than a year ago

Table 2. **Sample Sizes and Percents for the Minnesota Student Survey Data, by Cohort and Sex**

	1998	2001	2004	2007	2010
Male					
Opposite-sex partnered	7999 (85.8%)	7347 (86.5%)	7412 (86.2%)	7659 (79.3%)	7832 (80.5%)
Both-sex partnered	1176 (12.6%)	1008 (11.9%)	1010 (11.8%)	1744 (18.1%)	1632 (16.8%)
Same-sex partnered	148 (1.6%)	142 (1.7%)	172 (2.0%)	250 (2.6%)	268 (2.8%)
Female					
Opposite-sex partnered	8721 (95.5%)	8210 (93.5%)	8386 (92.7%)	8762 (91.9%)	8869 (90.8%)
Both-sex partnered	367 (4.02%)	515 (5.86%)	575 (6.36%)	658 (6.9%)	765 (7.83%)
Same-sex partnered	45 (0.49%)	56 (0.64%)	82 (0.91%)	112 (1.17%)	138 (1.41%)

METHODS

Data

Data are derived from 3 cross-sectional cohorts of the Minnesota Student Survey (MSS). The MSS, a statewide study of adolescent health behaviors and related risk and protective factors, is administered every 3 years to middle and high school students in grades 6, 9, and 12 in public, charter, and tribal schools in Minnesota.[22] School district participation is optional but the majority of districts participate; school district participation rates ranged from 88% to 92% across the survey years. Student participation is anonymous and voluntary; parent consent and student assent are required for students' participation. The surveys were administered in classrooms between January and March of the identified survey year.

Participants

Our sample is limited to adolescents with valid responses to the variable that addressed sexual orientation (see Measures section below), which were only asked of students in grades 9 and 12. For this study, a merged dataset provided by the MSS team was used.[22] This dataset includes data from the 1998 to 2010 survey cohorts. The number of participants sampled in each school year that are included in this study ranges from a low of 17,278 (2001) to a high of 19,504 (2010) (for more information on the full sample, see ref 22). The average age of participants for this study was 16.7 years (SD = 1.48) and the sample was nearly equally male (49.7%) and female. The majority of students identified as white (82.5%), with 8.2% identified as black/African American, and the remaining students identifying as American Indian, Hispanic, Asian, or a combination of race/ethnicity (9.3%). Three survey years of data were used in this study to examine the prevalence of emotional distress and suicidality. Because respondents in 9th grade might have completed a subsequent survey 3 years later in 12th grade, only data from years 1998, 2004, and 2010 were used to test the significance of trends and examine the gaps in trends over time, to ensure independent cohort samples across years.

Instrumentation

See Table 1 for the independent and dependent variables and response options.

Sexual orientation. A behavioral measure of sexual orientation was assessed using the following 2 questions: During the last 12 months, with how many different male partners have you had sexual intercourse? During the last 12 months, with how many different female partners have you had sexual intercourse? Using these 2 variables combined with self-reported sex, 3 groups of participants were created: (1) participants who reported a partner(s) of the opposite-sex only (heterosexual), (2) participants who reported a partner(s) of the same-sex only (gay/lesbian), and (3) participants reporting both male and female partners (bisexual). Respondents were not included if they had not had sexual partners in the past 12 months; nearly 70% of the sample had not had sexual partners. Although this may not be an ideal measure of sexual orientation among adolescents, as a secondary analysis of existing data, our study was limited to the existing measure on the survey across each of the survey years.

Emotional distress. Emotional distress was assessed on the MSS in each cohort year using the following questions, which have been used on several school-based adolescent health surveys over the years, and have been validated widely: (1) During the last 30 days, have you felt you were under any stress or pressure? (dichotomized responses: ''yes, almost more than I could take'' vs ''quite a bit of pressure'' or less); (2) During the last 30 days, have you felt sad? (''all of the time'' vs ''most of the time'' or less); (3) During the last 30 days, have you felt so discouraged or hopeless that you wondered if anything was worthwhile? (''extremely so, to the point that I have just about given up'' vs ''quite a bit'' or less); and (4) During the last 30 days, have you felt nervous, worried, or upset? (''all of the time'' vs ''most of the time'' or less).

Suicidality. Suicidality was assessed on the MSS in each cohort year using one question on ideation and one question on attempts that have been widely used on school-based adolescent health surveys, and have been validated across a number of different studies.

Table 3. **Prevalence and Trends of Mental Health Indicators From 1998 to 2010 Disaggregated by Sex**

	Prevalence (%)					Trends (OR*[95% CI])	
	1998	2001	2004	2007	2010	1998 (ref 2004)	2010 (ref 2004)
Males							
Felt you were under stress or pressure in last 30 days (almost more than I could take)							
Opposite-sex partnered	13.7	14.1	13.4	13.8	13.0	1.02 (0.93-1.12)	0.97 (0.88-1.07)
Both-sex partnered	21.8	21.5	23.2	18.4	17.8	0.93 (0.75-1.14)	**0.72 (0.59-0.88)**
Same-sex partnered	13.3	26.4	20.5	20.7	20.6	0.60 (0.33-1.10)	0.98 (0.60-1.59)
Felt sad in the last 30 days (all of the time)							
Opposite-sex partnered	3.2	3.4	4.0	3.5	3.5	**0.77 (0.65-0.91)**	0.89 (0.75-1.06)
Both-sex partnered	10.8	13.6	14.0	10.4	13.7	**0.75 (0.58-0.97)**	0.97 (0.77-1.23)
Same-sex partnered	4.1	10.1	7.1	13.9	13.8	0.52 (0.19-1.44)	**2.07 (1.05-4.09)**
Felt so discouraged or hopeless in the last 30 days (extremely so)							
Opposite-sex partnered	5.0	5.7	5.7	6.2	5.5	**0.87 (0.74-0.98)**	0.97 (0.84-1.11)
Both-sex partnered	13.4	15.4	14.9	12.1	13.9	0.89 (0.70-1.14)	0.93 (0.74-1.17)
Same-sex partnered	3.5	16.8	8.3	14.7	9.7	0.45 (0.16-1.26)	1.32 (0.66-2.66)
Felt nervous, worried, or upset in the last 30 days (all of the time)							
Opposite-sex partnered	4.2	4.8	4.7	4.0	4.3	0.87 (0.74-1.01)	0.92 (0.79-1.08)
Both-sex partnered	13.5	14.6	14.6	11.8	13.9	0.92 (0.71-1.17)	0.95 (0.76-1.20)
Same-sex partnered	8.3	10.1	10.2	10.7	14.2	0.81 (0.37-1.77)	1.59 (0.85-2.95)
Ever thought of killing yourself (yes)							
Opposite-sex partnered	33.7	35.3	34.1	25.9	25.2	0.97 (0.91-1.04)	**0.66 (0.61-0.70)**
Both-sex partnered	47.1	45.7	46.6	34.4	32.0	1.01 (0.85-1.20)	**0.55 (0.47-0.65)**
Same-sex partnered	38.6	51.4	47.6	42.9	42.8	0.68 (0.44-1.07)	0.83 (0.56-1.24)
Thought of killing yourself in the last year (yes)							
Opposite-sex partnered	19.4	19.7	19.1	16.3	15.7	0.97 (0.91-1.04)	**0.66 (0.51-0.70)**
Both-sex partnered	32.7	30.2	30.8	24.2	22.8	1.08 (0.90-1.30)	**0.69 (0.57-0.82)**
Same-sex partnered	26.7	36.4	26.8	29.4	28.0	0.99 (0.60-1.64)	1.12 (0.72-1.75)
Ever tried to kill yourself (yes)							
Opposite-sex partnered	11.1	11.3	12.5	8.2	8.2	0.85 (0.77-0.94)	0.63 (0.57-0.70)
Both-sex partnered	28.6	29.2	29.7	19.8	18.6	0.94 (0.78-1.14)	**0.55 (0.45-0.66)**
Same-sex partnered	18.6	25.7	24.9	19.2	23.4	0.70 (0.40-1.20)	0.93 (0.59-1.48)
Tried to kill yourself in the last year (yes)							
Opposite-sex partnered	5.9	5.7	6.2	3.8	3.5	0.90 (0.79-1.03)	**0.56 (0.48-0.65)**
Both-sex partnered	19.5	18.3	20.9	11.0	9.4	0.91 (0.74-1.13)	**0.40 (0.32-0.50)**
Same-sex partnered	11.0	14.3	14.2	9.2	12.1	0.76 (0.38-1.50)	0.90 (0.50-1.61)
Females							
Felt you were under stress or pressure in last 30 days (almost more than I could take)							
Opposite-sex partnered	22.2	21.4	21.1	24.4	22.0	1.06 (0.98-1.14)	1.07 (0.99-1.15)
Both-sex partnered	32.4	32.9	33.5	35.4	35.2	0.91 (0.74-1.30)	1.13 (0.90-1.43)
Same-sex partnered	35.6	25.5	22.2	29.6	33.1	1.99 (0.88-4.51)	**1.96 (1.02-3.75)**
Felt sad in the last 30 days (all of the time)							
Opposite-sex partnered	4.3	4.9	5.3	6.1	5.8	**0.76 (0.66-0.87)**	1.13 (0.99-1.29)
Both-sex partnered	12.9	17.2	16.8	19.6	16.0	0.76 (0.52-1.12)	1.00 (0.74-1.35)
Same-sex partnered	17.8	10.5	20.0	13.8	8.0	0.94 (0.36-2.45)	**0.40 (0.17-0.93)**
Felt so discouraged or hopeless in the last 30 days (extremely so)							
Opposite-sex partnered	9.7	9.7	10.3	9.1	10.1	1.04 (0.92-1.17)	1.04 (0.93-1.17)
Both-sex partnered	22.8	20.9	22.8	24.2	23.2	1.00 (0.72-1.40)	1.06 (0.81-1.40)
Same-sex partnered	19.7	17.4	24.8	20.1	17.9	1.15 (0.47-2.84)	0.71 (0.34-1.47)
Felt nervous, worried, or upset in the last 30 days (all of the time)							
Opposite-sex partnered	4.2	4.8	4.7	4.0	4.3	1.03 (0.90-1.18)	1.07 (0.94-1.23)
Both-sex partnered	13.5	14.6	14.6	11.8	13.9	0.77 (0.54-1.11)	0.77 (0.58-1.05)
Same-sex partnered	22.2	10.7	11.4	14.0	9.4	2.28 (0.85-6.11)	0.88 (0.36-2.16)
Ever thought of killing yourself (yes)							
Opposite-sex partnered	54.6	53.3	52.6	43.8	38.8	1.07 (1.00-1.14)	**0.57 (0.54-0.61)**
Both-sex partnered	73.0	69.9	72.9	64.4	60.4	1.05 (0.78-1.42)	**0.60 (0.47-0.76)**
Same-sex partnered	68.9	57.9	78.2	48.6	65.0	0.61 (0.27-1.42)	**0.48 (0.25-0.92)**
Thought of killing yourself in the last year (yes)							
Opposite-sex partnered	31.2	30.0	28.6	24.8	21.7	**1.10 (1.03-1.18)**	**0.69 (0.65-0.75)**
Both-sex partnered	50.1	48.0	51.2	45.4	41.1	1.02 (0.78-1.35)	**0.73 (0.58-0.91)**
Same-sex partnered	46.7	39.3	46.2	36.4	39.0	1.06 (0.50-2.23)	0.83 (0.47-1.47)

Table 3. **Continued**

	Prevalence (%)					Trends (OR*[95% CI])	
	1998	2001	2004	2007	2010	1998 (ref 2004)	2010 (ref 2004)
Ever tried to kill yourself (yes)							
Opposite-sex partnered	25.1	24.4	24.0	15.7	12.9	1.04 (0.97-1.11)	**0.47 (0.43-0.51)**
Both-sex partnered	47.8	47.1	52.5	39.6	34.7	0.86 (0.65-1.12)	**0.50 (0.40-0.63)**
Same-sex partnered	40.0	25.5	50.0	32.1	30.1	0.61 (0.32-1.43)	0.47 (0.26-1.04)
Tried to kill yourself in the last year (yes)							
Opposite-sex partnered	11.7	11.1	10.9	6.1	4.8	1.04 (0.94-1.14)	**0.41 (0.36-0.46)**
Both-sex partnered	29.3	28.4	33.8	22.7	18.5	0.87 (0.64-1.17)	**0.48 (0.37-0.62)**
Same-sex partnered	26.7	18.2	26.9	16.0	13.2	1.11 (0.47-2.65)	0.52 (0.25-1.07)

Data were weighted and adjusted for grade (reference: grade 9). 95% confidence intervals are in parentheses.
*Odds ratio in bold indicates $p < .05$.

From the measures we created the following response categories: No; Yes, during the past year; Yes, more than a year ago; or Yes, during the past year *and* more than a year ago. Results are presented separately for respondents indicating ''yes, during the past year'' versus no ideation or attempt, and for any ideation or attempt (irrespective of timeframe) versus none.

Data Analysis

Logistic regression models, adjusted for grade, are used to test the trends in prevalence of 8 emotional distress and suicidality items from 1998 to 2004 and from 2004 to 2010, run separately for participants with opposite-sex partners, both-sex partners, and same-sex partners. Logistic regressions (adjusted for grade of student) were conducted to test sexual orientation-based differences in the survey years, with the opposite-sex partners group used as the reference category. Finally, interaction analyses were performed to test trends across the years in the disparities in emotional distress and suicidality between participants with opposite-sex partners and same-sex partners and between opposite-sex partners and both-sex partners. To accomplish these analyses, grade-adjusted logistic regression models were run with 2 interaction terms, namely sexual orientation and survey year. The referent category was adolescents reporting opposite-sex partners. In the interaction analyses, we are testing the ratio of odds ratios: that is, comparing a disparity in 1 year for a particular group to the disparity in another year for the same group.[23] Analyses were a priori stratified by sex.

To facilitate generalizability to the statewide population, data were weighted to adjust for student participation rates using the following process: (1) the school district's enrollment for a given grade and year was divided by the total enrollment of all participating school districts, (2) this ratio was multiplied by the ratio of total statewide surveys for a given grade and year to the number of surveys completed in the individual school district.

RESULTS

Youth self-reported sexual orientation and sex. As shown in Table 2, most of the youth had only opposite-sex partners (>79% across years for males and females), with a decreasing trend over time for both males (85.8% in 1998 to 80.5% in 2010) and females (95.5% in 1998 to 90.8% in 2010). The number of male respondents who reported only same-sex partners has nearly doubled over time, from 1.6% in 1998 to 2.8% in 2010 whereas those who reported both opposite- and same-sex partners has increased slightly (12.6% in 1998 to 16.8% in 2010). The trend is different for females, with more female respondents reporting both-sex partners over time (4.0% in 1998 to 7.8% in 2010) than only same-sex partners (0.5% in 1998 to 1.4% in 2010).

Research Question 1

Emotional distress and suicidality prevalence and trends *within* sexual partner groups for males and females (see Table 3).

Prevalence: Prevalence of mental health indicators (% of youth endorsing a given indicator) is reported in Table 3.

Trends: Among males and females, there were some significant changes in mental health indicators, between 1998 and 2004, and also between 2004 and 2010, for the 3 respective sexual orientation groups. Compared with 2004, reported prevalence of emotional distress and suicidality was lower in 2010 for nearly all of the indicators; for example, the odds of reporting thinking of or trying to kill yourself in the last year (or ever) significantly decreased in 2010 for males and for females reporting opposite-sex partners, and for males reporting both-sex partners. The odds of all female groups to endorse ''ever thinking of killing yourself'' also decreased significantly in 2010, compared to the referent year 2004 (eg, opposite-sex partnered: OR [odds ratio] 0.57, CI [confidence interval] 0.54-0.61, $p < .05$). Of note, among the few increases in prevalence was that same-sex partnered

Table 4. **Odds Ratios and 95% Confidence Intervals by Year (1998-2010): Comparisons by Sexual Orientation**

	1998	2001	2004	2007	2010
Felt you were under stress or pressure in last 30 days (almost more than I could take)					
Male					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**1.73 (1.48-2.03)**	**1.62 (1.37-1.91)**	**1.92 (1.63-2.27)**	**1.39 (1.21-1.60)**	**1.43 (1.24-1.66)**
Same-sex partnered	0.98 (0.61-1.59)	**2.15 (1.47-3.15)**	**1.67 (1.14-2.44)**	**1.60 (1.16-2.20)**	**1.73 (1.28-2.36)**
Female					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**1.53 (1.22-1.92)**	**1.60 (1.31-1.95)**	**1.61 (1.34-1.94)**	**1.60 (1.35-1.90)**	**1.79 (1.52-2.10)**
Same-sex partnered	1.71 (0.92-3.19)	1.09 (0.59-2.02)	0.90 (0.53-1.54)	1.18 (0.66-1.79)	**1.67 (1.16-2.39)**
Felt sad in the last 30 days (all of the time)					
Male					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**3.39 (2.70-4.26)**	**4.07 (3.25-5.09)**	**3.56 (2.86-4.43)**	**3.09 (2.53-3.78)**	**4.14 (3.43-5.00)**
Same-sex partnered	1.19 (0.51-2.78)	**3.05 (1.74-5.36)**	1.74 (0.96-3.15)	**4.21 (2.86-6.18)**	**4.32 (2.97-6.26)**
Female					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**2.68 (1.93-3.73)**	**2.99 (2.30-3.88)**	**2.49 (1.94-3.19)**	**3.02 (2.42-3.76)**	**2.48 (1.99-3.10)**
Same-sex partnered	**4.01 (1.81-8.85)**	1.54 (0.63-3.75)	**3.07 (1.72-5.46)**	**1.79 (1.02-3.16)**	1.18 (0.63-2.23)
Felt so discouraged or hopeless in the last 30 days (extremely so)					
Male					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**2.73 (2.24-3.34)**	**2.69 (2.20-3.30)**	**2.61 (2.12-3.20)**	**2.01 (1.69-2.40)**	**2.66 (2.23-3.16)**
Same-sex partnered	0.71 (0.30-1.69)	**3.12 (1.97-4.95)**	1.32 (0.75-2.32)	**2.49 (1.72-3.59)**	**1.82 (1.19-2.78)**
Female					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**2.48 (1.88-3.27)**	**1.85 (1.31-2.42)**	**2.50 (2.00-3.14)**	**2.73 (2.23-3.35)**	**2.59 (2.12-3.17)**
Same-sex partnered	**2.89 (1.40-5.97)**	**2.13 (1.03-4.40)**	**2.57 (1.49-4.43)**	**1.88 (1.13-3.12)**	**1.74 (1.05-2.87)**
Felt nervous, worried, or upset in the last 30 days (all of the time)					
Male					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**3.27 (2.66-4.01)**	**3.07 (2.49-3.79)**	**3.17 (2.56-3.92)**	**3.08 (2.55-3.72)**	**3.46 (2.89-4.15)**
Same-sex partnered	**1.93 (1.05-3.55)**	**2.04 (1.15-3.60)**	**2.08 (1.23-3.49)**	**2.68 (1.75-4.10)**	**3.64 (2.53-5.24)**
Female					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**2.34 (1.71-3.20)**	**2.16 (1.64-2.83)**	**2.96 (2.33-3.77)**	**3.05 (2.44-3.81)**	**2.37 (1.89-2.98)**
Same-sex partnered	**4.09 (1.98-8.42)**	1.42 (0.58-3.46)	1.72 (0.85-3.44)	**2.01 (1.15-3.52)**	1.59 (0.89-2.83)
Ever thought of killing yourself (yes)					
Male					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**1.67 (1.47-1.90)**	**1.48 (1.29-1.70)**	**1.62 (1.42-1.86)**	**1.47 (1.31-1.65)**	**1.36 (1.20-1.53)**
Same-sex partnered	1.20 (0.85-1.68)	1.88 (1.34-2.63)	**1.71 (1.26-2.33)**	**2.10 (1.61-2.72)**	**2.20 (1.71-2.85)**
Female					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**1.95 (1.53-2.48)**	**1.70 (1.39-2.07)**	**1.99 (1.63-2.42)**	**2.04 (1.71-2.42)**	**2.09 (1.79-2.45)**
Same-sex partnered	1.65 (0.86-3.17)	0.99 (0.58-1.70)	**2.63 (1.52-4.53)**	0.99 (0.67-1.45)	**2.72 (1.90-3.91)**
Thought of killing yourself in the last year (yes)					
Male					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**1.88 (1.64-2.15)**	**1.63 (1.40-1.89)**	**1.76 (1.52-2.05)**	**1.60 (1.40-1.82)**	**1.51 (1.32-1.73)**
Same-sex partnered	1.46 (1.00-2.12)	**2.20 (1.4-3.13)**	**1.48 (1.05-2.09)**	**2.05 (1.54-2.73)**	**2.07 (1.55-2.74)**
Female					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**1.83 (1.46-2.28)**	**1.68 (1.39-2.03)**	**1.90 (1.58-2.28)**	**2.07 (1.74-2.46)**	**2.05 (1.74-2.41)**
Same-sex partnered	1.56 (0.84-2.89)	1.10 (0.63-1.93)	1.49 (0.93-2.48)	1.28 (0.85-1.93)	**2.05 (1.42-2.94)**
Ever tried to kill yourself (yes)					
Male					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**2.94 (2.53-3.41)**	**2.99 (2.55-3.50)**	**2.73 (2.34-3.20)**	**2.68 (2.31-3.11)**	**2.51 (2.15-2.93)**
Same-sex partnered	**1.75 (1.14-2.69)**	**2.54 (1.72-3.76)**	**2.14 (1.49-3.07)**	**2.53 (1.81-3.53)**	**3.38 (2.49-4.59)**

Table 4. **Continued**

	1998	2001	2004	2007	2010
Female					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**2.32 (1.86-2.90)**	**2.21 (1.83-2.68)**	**2.84 (2.38-3.39)**	**3.07 (2.58-3.66)**	**3.14 (2.66-3.72)**
Same-sex partnered	1.62 (0.87-3.02)	0.79 (0.42-1.47)	**2.52 (1.60-3.98)**	**2.08 (1.37-3.16)**	**2.67 (1.83-3.90)**
Tried to kill yourself in the last year (yes)					
Male					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**3.43 (2.87-4.09)**	**3.26 (2.69-3.95)**	**3.52 (2.93-4.24)**	**3.00 (2.46-3.65)**	**2.69 (2.18-3.33)**
Same-sex partnered	**1.84 (1.08-1.34)**	**2.43 (1.48-3.98)**	**2.20 (1.40-3.45)**	**2.36 (1.49-3.72)**	**3.71 (2.48-5.54)**
Female					
Opposite-sex partnered	ref	ref	ref	ref	ref
Both-sex partnered	**2.43 (1.88-3.14)**	**2.28 (1.83-2.85)**	**2.86 (2.33-3.50)**	**3.52 (2.83-4.37)**	**3.48 (2.80-4.33)**
Same-sex partnered	**2.09 (1.02-4.28)**	1.24 (0.61-2.51)	**1.88 (1.10-3.22)**	**2.02 (1.17-3.48)**	**2.56 (1.52-4.31)**

Data were weighted and adjusted for grade (reference: grade 9); 95% confidence intervals (CIs) are in parentheses; odds ratio (OR) in bold indicates $p < .05$.

males had twice the odds of reporting they felt sad in the last 30 days ''all of the time'' in 2010 as compared to their same-sex partnered counterparts surveyed in 2004 (OR 2.07, CI 1.05-4.09, $p < .05$). Similarly, same-sex partnered females had nearly twice the odds of reporting that they felt under stress or pressure ''almost more than I could take'' in 2010 as compared to their same-sex partnered counterparts in 2004 (OR 1.96, CI 1.02-3.75, $p < .05$).

Research Question 2

Emotional distress and suicidality trends *across* sexual partner groups for males and females (see Table 4).

Disparities: With few exceptions, compared with their respective opposite-sex partnered male and female peers, both-sex and same-sex partnered males and females were at increased risk of endorsing emotional distress and suicidality indicators in each surveyed year between 1998 and 2010. For example, in 2010, same-sex partnered male students were over 4 times more likely than their opposite-sex partnered male peers to endorse feeling sad in the past 30 days ''all of the time'' (OR 4.32, CI 2.97-6.26, $p < .05$) and over 3 times more likely to report they had ever tried to kill themselves (OR 3.38; CI 2.49-4.59, $p < .05$). Both-sex partnered females were 2 times more likely than their opposite-sex partnered female peers to endorse that they ''extremely so'' felt discouraged or hopeless in the last 30 days (OR 2.59, CI 2.12-3.17, $p < .05$).

Research Question 3

Interaction trends (sexual partner groups and time interactions) in emotional distress and suicidality, by sex (see Table 5).

Trends in disparities: There were very few statistically significant interaction trends. For example, there was a statistically significant interaction (AOR [adjusted odds ratio] 2.45, CI 1.22-4.93, $p < .05$) between same-sex partnered males for the 2010 survey, indicating that the gap in feeling sad in the past 30 days significantly widened between 2004 and 2010 for same-sex partnered males as compared to their opposite-sex partnered male peers, whereas the same interaction demonstrated a reduced gap between 2004 and 2010 for same-sex partnered females as compared with their opposite-sex partnered female peers (AOR 0.37, CI 0.16-0.87, $p < .05$). The gap in lifetime suicidality narrowed between 2004 and 2010 for both-sex partnered males as compared with their opposite-sex partnered male peers (A0R 0.75, CI 0.56-0.99, $p < .05$). The absence of additional statistically significant interactions is important, leading to a conclusion that existing disparities have not changed over time.

DISCUSSION

We examined the emotional distress and suicidality trends among male and female students with opposite-, both-, or same-sex partners, surveyed as part of the Minnesota Student Survey from 1998 to 2010. Importantly, this study is one of the few school-based population surveys with trend data capable of answering an important question: Are things getting better for sexual minority youth? Our results reveal an overall improvement in the mental health trends of youth since 2004, but that the disparity gaps between heterosexual and sexual minority youth, as identified by their most recent sexual partner, have not narrowed over time (2004-2010); these are the key contributions of this research to existing knowledge.

Compared to their opposite-sex partnered peers, young people reporting same-sex or both-sex partners had higher odds of reporting emotional distress and suicidality across a range of indicators in each year surveyed, representing over a decade of data collection. Research has begun to untangle the factors that may contribute to the mental health of sexual minority youth.[24] This study did not investigate

Table 5. **Trends Mental Health: Interactions Between Sexual Orientation and Year, Disaggregated by Sex**

	Male OR[a] (95% CI)	Female OR[a] (95% CI)
Felt you were under stress or pressure in last 30 days (almost more than could take)		
Opposite-sex partnered by year 2004	ref	ref
Both-sex partnered by year 1998	0.90 (0.72-1.13)	0.93 (0.70-1.25)
Both-sex partnered by year 2010	**0.75 (0.60-0.94)**	1.06 (0.83-1.36)
Same-sex partnered by year 1998	0.59 (0.32-1.09)	1.86 (0.82-4.21)
Same-sex partnered by year 2010	1.04 (0.64-1.70)	1.78 (0.94-3.38)
Felt sad in the last 30 days (all of the time)		
Opposite-sex partnered by year 2004	ref	ref
Both-sex partnered by year 1998	0.93 (0.68-1.28)	1.04 (0.69-1.57)
Both-sex partnered by year 2010	1.14 (0.86-1.53)	0.96 (0.69-1.33)
Same-sex partnered by year 1998	0.67 (0.24-1.90)	1.26 (0.48-3.37)
Same-sex partnered by year 2010	**2.45 (1.22-4.93)**	**0.37 (0.16-0.87)**
Felt so discouraged or hopeless in the last 30 days (extremely so)		
Opposite-sex partnered by year 2004	ref	ref
Both-sex partnered by year 1998	1.02 (0.77-1.35)	0.99 (0.69-1.41)
Both-sex partnered by year 2010	1.00 (0.77-1.31)	1.06 (0.78-1.43)
Same-sex partnered by year 1998	0.53 (0.19-1.49)	1.12 (0.45-2.79)
Same-sex partnered by year 2010	1.36 (0.67-2.76)	0.69 (0.33-1.45)
Felt nervous, worried, or upset in the last 30 days (all of the time)		
Opposite-sex partnered by year 2004	ref	ref
Both-sex partnered by year 1998	1.02 (0.76-1.37)	0.77 (0.52-1.13)
Both-sex partnered by year 2010	1.08 (0.82-1.42)	0.75 (0.54-1.05)
Same-sex partnered by year 1998	0.92 (0.42-2.05)	2.30 (0.85-6.26)
Same-sex partnered by year 2010	1.73 (0.92-3.28)	0.88 (0.36-2.16)
Ever thought of killing yourself (yes)		
Opposite-sex partnered by year 2004	ref	ref
Both-sex partnered by year 1998	1.04 (0.87-1.25)	1.00 (0.73-1.36)
Both-sex partnered by year 2010	0.83 (0.70-1.01)	1.06 (0.83-1.36)
Same-sex partnered by year 1998	0.71 (0.45-1.11)	0.64 (0.27-1.50)
Same-sex partnered by year 2010	1.30 (0.87-1.93)	1.05 (0.54-2.01)
Thought of killing yourself in the last year (Yes)		
Opposite-sex partnered by year 2004	ref	ref
Both-sex partnered by year 1998	1.07 (0.88-1.31)	0.95 (0.71-1.26)
Both-sex partnered by year 2010	0.87 (0.71-1.06)	1.07 (0.84-1.36)
Same-sex partnered by year 1998	0.99 (0.60-1.65)	1.03 (0.48-1.36)
Same-sex partnered by year 2010	1.41 (0.90-2.20)	1.36 (0.75-2.46)
Ever tried to kill yourself (yes)		
Opposite-sex partnered by year 2004	ref	ref
Both-sex partnered by year 1998	1.08 (0.87-1.34)	0.84 (0.64-1.12)
Both-sex partnered by year 2010	0.90 (0.72-1.11)	1.09 (0.85-1.39)
Same-sex partnered by year 1998	0.82 (0.47-1.43)	0.67 (0.31-1.43)
Same-sex partnered by year 2010	1.56 (0.97-2.50)	1.06 (0.58-1.91)
Tried to kill yourself in the last year (yes)		
Opposite-sex partnered by year 2004	ref	ref
Both-sex partnered by year 1998	0.97 (0.75-1.25)	0.85 (0.62-1.18)
Both-sex partnered by year 2010	**0.75 (0.56-0.99)**	1.18 (0.88-1.59)
Same-sex partnered by year 1998	0.83 (0.42-1.67)	1.11 (0.46-2.70)
Same-sex partnered by year 2010	1.67 (0.91-3.05)	1.32 (0.63-2.80)

CI, confidence interval; OR, odds ratio; ref, reference group 2004. Data were weighted. Odds ratio in bold indicates $p < .05$.
[a]The model included sexual orientation, survey year, and grade (reference: grade 9) along with orientation-by-year interaction.

additional factors that may contribute to, or provide protection from, emotional distress and suicidality. Previous research has suggested that family and social support,[25,26] stigma and discrimination,[27] experiences of abuse or trauma[24,28] may contribute to the increased risk of suicidality and poor mental health among sexual minority youth. The results of this study indicate that research on the factors that may impact mental health and wellness needs to account for the diversity in young people's sexual orientations and identities because risk is not uniform across groups.

For example, across all measures of emotional distress, young people reporting both-sex partners (bisexual) had higher odds of endorsing indicators of emotional distress as compared to their heterosexual peers. This result is consistent with a recent systematic

review that underscores the unique risk faced by bisexual youth.[29] Some have speculated that the increased risk experienced by bisexual youth may stem from the ''double discrimination'' experienced by bisexual youth as being neither heterosexual nor gay.[29,30] Research needs to consider bisexually identified people as a distinct sexual orientation group. Data limitations often result in the grouping of sexual minorities (eg, grouping gay, lesbian, and bisexuals together) thereby disguising or missing potentially increased risks or protective factors among subgroups.

Strengths and Limitations

Strengths of this study include use of large-scale state-level data with an adequate sample size to accommodate small group analyses, which can be generalized to a larger population of high school adolescents, and a multiyear dataset allowing for examination of trends in disparities in emotional distress and suicidality by sex and distinct sexual orientation groups, including bisexual respondents. Categorizing sexual orientation by recent sexual behavior is a limited measure of orientation, because it excludes the majority of adolescents who have not had sexual experience, even if they might have romantic or sexual attractions. Further, sexual orientation identity and sexual behavior can be discordant.[31] However, despite these limitations, this study presents a foundational trend analysis that demonstrates persistent health disparities, and the critical need for research that examines differences in mental health indicators among sexual minority and majority youth. Furthermore, consistent with the review by Savin-Williams and Vrangalova[32] that recommends a shift to something inclusive of a ''mostly heterosexual'' category because the ''three-group system'' is ''deemed inadequate because it does not reflect the sexual reality experienced by a substantial minority of individuals,'' our study exemplifies the need for thoughtful ways in which researchers and practitioners identify and categorize youth based on sexual attractions or orientation.

Conclusions

Suicide prevention is a public health priority in the United States but more needs to be done to understand increased risk and resilience among various subgroups of young people. Sexual minority youth should be a priority population for interventions aimed at improving mental health and well-being and reducing inequities.[33] Researchers have called for the need to develop population-specific interventions for sexual minority youth to address suicidality[34] yet few interventions have been developed and tested.[35] Some emerging research suggests that school level interventions may have an impact on the mental health of sexual minority youth.[21] School level interventions are vital as they often target the whole school environment which addresses the need for peer support for young sexual minority teens. Developing both tailored and broad interventions helps to address the wider social and political context within which sexual minority young people live. Clinical and community-level interventions need to consider the complexities of identity, stigma and resilience among young people.

IMPLICATIONS FOR SCHOOL HEALTH

School administrators, school-based health care providers, teachers, and other staff are uniquely positioned to support the emotional health of sexual minority young people through policies, programs, and personal relationships. While gains have been made in some school districts at the policy level (eg, antibullying policy, gender-neutral bathroom policy), many more continue to lack supportive, enforceable policies. Evidence-based interventions need to be developed and tested within schools, building on what we know about school-based program successes. Often, these studies, and subsequent programs, are successful because of a school-based champion; school systems, therefore, are encouraged to identify district- and school-level champions committed to advancing a strategic plan that supports sexual minority youth with macro- and microlevel initiatives. Finally, every individual employed by or volunteering within a school system is encouraged to recognize the role they play in supporting the health and well-being of every student. The positive influence of one caring person in the life of a young person can be significant and should not be overlooked. Schools afford a unique and critical opportunity to support the health of sexual minority youth through interpersonal, micro- and macrolevel investments.

Human Subjects Approval Statement

This study involved a anonymous existing dataset, which met exempt criteria for IRB review. In addition, this study was approved by the University of British Columbia Behavioral Research Ethics Board, Certificate #H12-00477.

REFERENCES

1. US Centers for Disease Control and prevention (CDC). Suicide prevention. Available at: http://www.cdc.gov/violenceprevention/suicide/index.html. Accessed October 13, 2015.
2. World Health Organization (WHO). Suicide. Available at: http://www.who.int/mediacentre/factsheets/fs398/en/. Accessed October 13, 2015.
3. Troister T, Links PS, Cutcliffe J. Review of predictors of suicide within 1 year of discharge from a psychiatric hospital. *Curr Psychiatry Rep*. 2008;10(1):60-65.

4. Lewinsohn PM, Rohde P, Seeley JR. Adolescent suicidal ideation and attempts: prevalence, risk factors, and clinical implications. *Clin Psychol Sci Pract*. 1996;3(1):25-46.
5. Gould MS, Kramer RA. Youth suicide prevention. *Suicide Life Threat Behav*. 2001;31(1):6-31.
6. Almeida J, Johnson RM, Corliss HL, Molnar BE, Azrael D. Emotional distress among LGBT youth: the influence of perceived discrimination based on sexual orientation. *J Youth Adolesc*. 2009;38(7):1001-1014.
7. Saewyc E, Skay C, Hynds P, et al. Suicidal ideation and attempts in North American school-based surveys: are bisexual youth at increasing risk? *J LGBT Health Res*. 2008;3(2):25-36.
8. Hatzenbuehler ML. The social environment and suicide attempts in lesbian, gay, and bisexual youth. *Pediatrics*. 2011;127(5):896-903.
9. Robinson JP, Espelage DL. Inequities in educational and psychological outcomes between LGBTQ and straight students in middle and high school. *Educ Res*. 2011;40(7):315-330.
10. Russell ST, Joyner K. Adolescent sexual orientation and suicide risk: evidence from a national study. *Am J Public Health*. 2001;91(8):1276-1281.
11. Mustanski B, Liu R. A longitudinal study of predictors of suicide attempts among lesbian, gay, bisexual, and transgender youth. *Arch Sex Behav*. 2013;42(3):437-448.
12. Cénat JM, Blais M, Hébert M, Lavoie F, Guerrier M. Correlates of bullying in Quebec high school students: the vulnerability of sexual-minority youth. *J Affect Disord*. 2015;183:315-321.
13. McDaniel JS, Purcell D, D'Augelli AR. The relationship between sexual orientation and risk for suicide: research findings and future directions for research and prevention. *Suicide Life Threat Behav*. 2001;31:84-105.
14. Davis B, Royne Stafford MB, Pullig C. How gay-straight alliance groups mitigate the relationship between gay-bias victimization and adolescent suicide attempts. *J Am Acad Child Adolesc Psychiatry*. 2014;53(12):1271-1278.
15. Robinson JP, Espelage DL, Rivers I. Developmental trends in peer victimization and emotional distress in LGB and heterosexual youth. *Pediatrics*. 2013;131(3):423-430.
16. Moon MW, Fornili K, O'Briant AL. Risk comparison among youth who report sex with same- sex versus both- sex partners. *Youth Soc*. 2007;38(3):267-284.
17. Teasdale B, Bradley-Engen MS. Adolescent same- sex attraction and mental health: the role of stress and support. *J Homosex*. 2010;57(2):287-309.
18. Marshall BDL, Wood E, Shoveller JA, Patterson TL, Montaner JSG, Kerr T. Pathways to HIV risk and vulnerability among lesbian, gay, bisexual, and transgendered methamphetamine users: a multi-cohort gender-based analysis. *BMC Public Health*. 2011;11(20):1-10.
19. Berlan ED, Corliss HL, Field AE, Goodman E, Austin SB. Sexual orientation and bullying among adolescents in the growing up today study. *J Adolesc Health*. 2010;46(4):366-371.
20. Hatzenbuehler ML, Birkett M, Van Wagenen A, Meyer IH. Protective school climates and reduced risk for suicide ideation in sexual minority youths. *Am J Public Health*. 2014;104(2):279-286.
21. Saewyc EM, Konishi C, Rose H, Homma Y. School based strategies to reduce suicidal ideation, suicide attempts and discrimination among sexual minority and heterosexual adolescents in western Canada. *Int J Child Youth Family Stud*. 2014;5(1):89-112.
22. Minnesota Departments of Education, Health, Human Services, & Public Safety. Minnesota Student Survey 1992-2010 trend report. Available at: http://www.health.state.mn.us/divs/chs/mss/trendreports/msstrendteport2010.pdf. Accessed October 15, 2015.
23. Homma Y, Saewyc E, Zumbo BD. Is it getting better? An analytical method to test trends in health disparities, with tobacco use among sexual minority vs. heterosexual youth as an example. *Int J Equity Health*. 2016;15:79.
24. Saewyc E, Chen W, Hirakata P. Quantifying the influence of violence exposure on adolescent risk behaviours in western Canada. *J Adolesc Health*. 2010;46(2):S65.
25. Bouris A, Guilamo-Ramos V, Pickard A, et al. A systematic review of parental influences on the health and well-being of lesbian, gay, and bisexual youth: time for a new public health research and practice agenda. *J Prim Prev*. 2010;31:273-309.
26. Ryan C, Huebner D, Diaz RM, Sanchez J. Family rejection as a predictor of negative health outcomes in white and Latino lesbian, gay, and bisexual young adults. *Pediatrics*. 2008;123(1):346-347.
27. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull*. 2003;129(5):674-697.
28. Friedman MS, Marshal MP, Guadamuz TE, et al. A meta-analysis of disparities in childhood sexual abuse, parental physical abuse, and peer victimization among sexual minority and sexual nonminority individuals. *Am J Public Health*. 2011;101:1481-1494.
29. Pompili M, Lester D, Forte A, et al. Bisexuality and suicide: a systematic review of the current literature. *J Sex Med*. 2014;11:1903-1913.
30. Friedman MR, Dodge B, Schick V, et al. From bias to bisexual health disparities: attitudes toward bisexual men and women in the United States. *LGBT Health*. 2014;1(4):309-318.
31. Ott MQ, Corliss HL, Wypij D, Rosario M, Austin SB. Stability and change in self-reported sexual orientation identity in young people: application of mobility metrics. *Arch Sex Behav*. 2010;40(3):519-532.
32. Savin-Williams RC, Vrangalova Z. Mostly heterosexual as a distinct sexual orientation group: a systematic review of the empirical evidence. *Dev Rev*. 2013;33(1):58-88.
33. Mustanski B, Birkett M, Greene GJ, Hatzenbuehler ML, Newcomb ME. Envisioning an America without sexual orientation inequities in adolescent health. *Am J Public Health*. 2014;104(2):218-225.
34. Eisenberg ME, Resnick MD. Suicidality among gay, lesbian and bisexual youth: the role of protective factors. *J Adolesc Health*. 2006;39(5):662-668.
35. Haas AP, Eliason M, Mays VM, et al. Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: review and recommendations. *J Homosex*. 2011;58(1):10-51.
36. Birkett M, Espelage DL, Koenig B. LGB and questioning students in schools: the moderating effects of homophobic bullying and school climate on negative outcomes. *J Youth Adolesc*. 2009;38(7):989-1000.