Executive Summary: Health Impact Review of SSB 6439

Concerning Preventing Harassment, Intimidation, and Bullying in Public Schools

SSB 6439 has potential to decrease bullying; and evidence indicates that bullying is associated with negative health outcomes. Lesbian, gay, bisexual, transgender, queer, or questioning (LGBTQ), underweight, and overweight students disproportionally experience bullying and poor health outcomes. Therefore mitigating bullying would likely have a stronger positive impact on these populations, thereby decreasing health disparities.

BILL INFORMATION

Sponsors: Senate Early Learning and K-12 Education (originally sponsored by Senators Liias, Litzow, McAuliffe, Billig, Kohl-Welles, Keiser, Pedersen, Mullet, Rolfes, Cleveland, Fraser, Frockt)

Summary of Bill:

- The definition of harassment, intimidation, or bullying is amended to include emotional harm.
- Educational Service Districts (ESD) must develop trainings for the primary contacts ('Compliance Officers') in their districts regarding the model antiharassment, intimidation, cyberbullying, or bullying policy. The training must be based on the model policy; preexisting resources, trainings, and videos provided on the Office of Superintendent of Public Instruction's (OSPI) website; and include materials on hazing.
- The Compliance Officers must attend the training developed by their ESD at least one time.
- The Washington State School Directors' Association must consult with the Office of Education Ombuds and others with expertise on civil liberties of students to update the policy to include cyberbullying. The policy must provide guidance to districts on how to enforce cyberbullying policies without violating student rights.

HEALTH IMPACT REVIEW

Summary of Findings:
We have assumed, based on bill language, that when developing trainings ESDs would fully leverage the resources on OSPI's website which include best practices in bullying prevention, and that this has potential to improve Compliance Officers' knowledge of and ability to address this issue thereby potentially decreasing bullying. If these assumptions are not met than the trainings may not be effective in reducing bullying.

This health impact review found the following evidence regarding the provisions in SSB 6439:

- Very strong evidence that decreasing bullying would likely improve health outcomes for students.
- Strong evidence that LGBTQ students are at high risk for being bullied and would therefore likely see improved health outcomes as a result of decreased bullying.
- Very strong evidence that LGBTQ youth disproportionally experience negative health outcomes (such as those associated with bullying), therefore improving health outcomes for this population would likely decrease health disparities.
- Some evidence that underweight and overweight students are at high risk for being bullied and would therefore likely see improved health outcomes as a result of decreased bullying.
- Some evidence that underweight and overweight youth disproportionally experience negative health outcomes (such as those associated with bullying), therefore improving health outcomes for these populations would likely decrease health disparities.

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Health Impact Review of SSB 6439

Concerning Preventing Harassment, Intimidation, and Bullying in Public Schools

February 13, 2014

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Contents

Introduction and Methods

A health impact review is an analysis of how a proposed legislative or budgetary change will likely impact health and health disparities in Washington state (RCW 43.20.285). For the purpose of this review 'health disparities' have been defined as the differences in disease, death, and other adverse health conditions that exist between populations (RCW 43.20.270). This document provides summaries of the evidence analyzed by State Board of Health staff during the health impact review of Substitute Senate Bill 6439 (SSB 6439).

Staff analyzed the content of SSB 6439 and created a logic model depicting possible pathways leading from the provisions of the bill to health outcomes. Staff consulted with experts on education and conducted objective reviews of the literature for each component of the pathway using databases including ERIC, PubMed, and Google Scholar.

The following pages provide:

- A detailed analysis of the bill including a summary of the bill and the logic model.
- Annotated references with summaries of the findings for each research question.

The logic model is presented both in text and through a flowchart (Figure 1). The logic model includes information on the strength of the evidence for each relationship. The strength-of-evidence has been defined using the following criteria:

- **Minimal evidence:** the literature review yielded only one study supporting the association, *or* the literature review yielded several studies supporting the association but also some studies which found no association or a negative relationship.
- **Some evidence:** the literature review yielded several studies supporting the association, but a large body of evidence was not established.
- **Strong evidence:** the literature review yielded a large body of evidence on the relationship (a majority of which supported the association) but the body of evidence contained some contradictory findings, did not incorporate the most robust study designs or data analysis, had significant but not meaningful results, or some combination of these. Any relationship where the language of the bill explicitly indicated that the work must be evidence-based was considered a strong connection.
- **Very strong evidence:** the literature review yielded a very large body of robust evidence supporting the association with few if any contradictory findings. The evidence indicates that the scientific community largely accepts the existence of the association.

In some cases the strength-of-evidence is limited because the body of evidence contains conflicting findings or poor study designs, and in other cases it is limited because the relationship has not been extensively researched. Therefore a classification of 'minimal' or 'some evidence' does not necessarily indicate that the relationship is not strong, but may rather indicate that it has not yet been studied. The summaries in the reference list provide further explanations behind the strength-of-evidence assigned to each relationship in the pathway, including details on the breadth and robustness of the literature.

This review was subject to time constraints, which allowed for only a preliminary search of the evidence. The annotated references are only a representation of the evidence and provide examples of current research. In many cases only a few review articles or meta-analyses are referenced. One article may cite or provide analysis of dozens of other articles. Therefore the number of references included in the bibliography does not necessarily reflect the strength-of-evidence. In addition, some articles provide evidence for more than one research question so they appear more than once in the reference list.

Analysis of SSB 6439 and the Scientific Evidence

Summary of SSB 6439

- The definition of harassment, intimidation, or bullying is amended to include emotional harm.
- Educational Service Districts (ESD) must develop trainings for the primary contacts ('Compliance Officers') in their districts regarding the model antiharassment, intimidation, cyberbullying, or bullying policy. The training must be based on the model policy; preexisting resources, trainings, and videos provided on the Office of Superintendent of Public Instruction's (OSPI) website; and include materials on hazing.
- The Compliance Officers must attend the training developed by their ESD at least one time.
- The Washington State School Directors' Association must consult with the Office of Education Ombuds and other organizations with expertise on the civil liberties of students to update the model policy as it relates to cyberbullying. The updated policy must provide guidance to school districts on how to enforce cyberbullying policies without violating student rights.

Health impact of SSB 6439

SSB 6439 has potential to decrease bullying; and evidence indicates that bullying is associated with negative health outcomes. Lesbian, gay, bisexual, transgender, queer, or questioning (LGBTQ), underweight, and overweight students disproportionally experience bullying **and** poor health outcomes. Therefore mitigating bullying would likely have a stronger positive impact on these populations, thereby decreasing health disparities.

Pathways to health impacts

The potential pathways leading from SSB 6439 to decreased health disparities are depicted in Figure 1. We have made the following assumptions based on the language in the provisions of the bill:

- The model policy, model procedure, and trainings would be updated to include emotional harm.
- The ESD trainings would fully leverage the resources provided on OSPI's website which include information on best practices in bullying prevention and references to evidence-based interventions. Incorporating these evidence-based components would help ensure that the trainings would increase the Compliance Officers' competency in mitigating bullying in schools.
- The Compliance Officers would use the knowledge and competencies that they acquire in the trainings to mitigate bullying by ensuring that the policies and procedures are enforced and by bringing best practices on bullying prevention back to their districts.

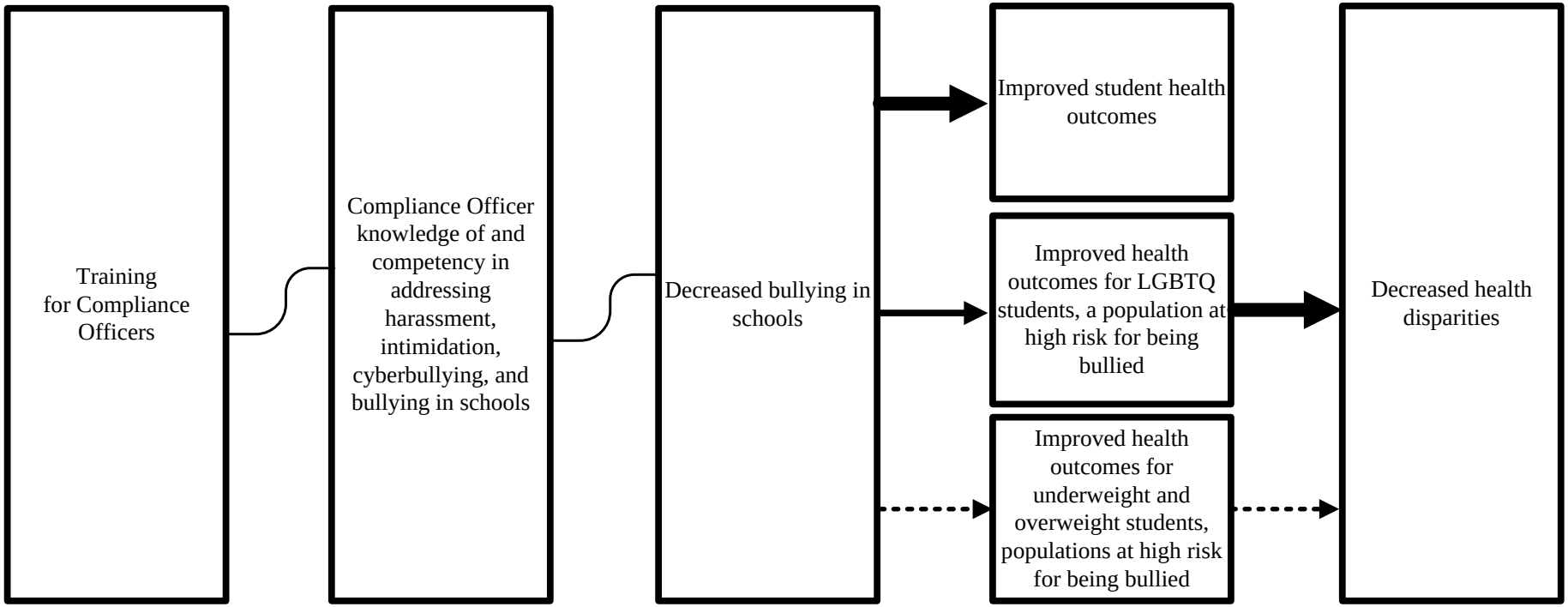
If these assumptions are not met than the trainings may not be effective in reducing bullying.

Evidence indicates that being bullied is associated with poor health outcomes.[1-10] Therefore decreasing bullying has potential to improve health outcomes for students, particularly for LGBTQ, underweight, and overweight youth who experience bullying (including cyberbullying) at higher rates than their peers.[11-20] Because these populations are also more likely to experience negative health outcomes such as those associated with being bullied (e.g. depression, suicide ideation or attempts), improving health outcomes for these student populations would likely lead to decreased health disparities.[21-31]

Due to time limitations, Board of Health staff only researched the primary connections between the provisions of the bill and decreased health disparities and did not explore the evidence for all possible pathways. For example, potential pathways that were not researched include:

- Evidence on what student populations are most likely to benefit from bill provisions intended to protect student rights during enforcement of cyberbullying policies.
- Evidence on the negative health impacts on those perpetrating and witnessing bullying.
- Evidence on the negative impacts of bullying on educational outcomes (such as school engagement and grades), and the pathways between educational outcomes and health.

Logic Model



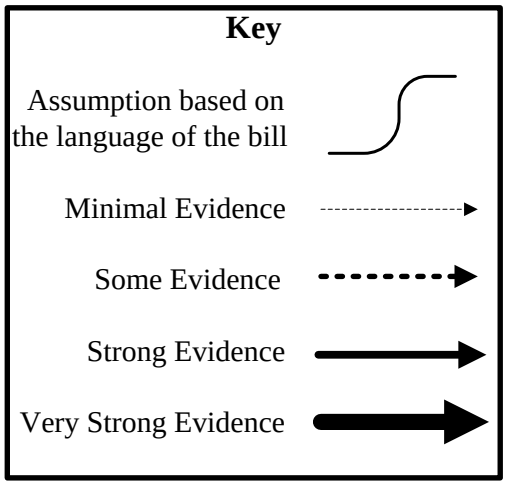


Figure 1
Preventing Harassment, Intimidation, and Bullying in Public Schools
SSB 6439

*LGBTQ: lesbian, gay, bisexual, transgender, queer, and questioning

Annotated References and Summaries of Findings

Evidence for how decreasing bullying in schools may improve student health outcomes

Summary of findings

There is a very large body of robust evidence indicating that all forms of bullying (e.g. physical, emotional, and cyberbullying) are associated with negative health outcomes such as depression, suicidal ideation and attempts, self-injury, unhealthy weight control behaviors, reduced physical activity, and substance use. Evidence indicates that there is also a link between bullying during adolescence and negative health and other outcomes as an adult including diagnosis with a serious physical illness, slow recovery from illness, perceived poor health, poor social relationship outcomes, and decreased levels of educational and financial attainment. Within this body of literature there are studies that have specifically examined the impacts of lesbian, gay, bisexual, transgender, queer or questioning (LGBTQ)-specific victimization or homophobic bullying as well as weight-based bullying. Evidence indicates that these forms of bullying are also associated with negative health outcomes. Data from Washington state show that there are high rates of bullying (including cyberbullying and bullying based on perceived sexual orientation) in Washington state schools, and that this harassment is associated with negative health outcomes for Washington students. Note that while evidence was encountered during this review which highlighted the negative health impacts experienced by perpetrators of and witnesses to bullying, this health impact review focused on the impacts on victims of bullying due to time limitations. This indicates that decreasing bullying may result in positive health effects for most students, even those who are only peripherally involved in bullying.

Annotated references

1. **Benas JS, Uhrlass DJ, Gibb BE. Body dissatisfaction and weight-related teasing: A model of cognitive vulnerability to depression among women. *Journal of Behavior Therapy and Experimental Psychiatry*. 2010; 41(4): 352-356.**

Benas et al. analyzed questionnaire data from 116 undergraduate women. The survey included questions from tools used to evaluate depression, body image, and teasing based on physical appearance. The researchers found that weight-related teasing was associated with increases in depressive symptoms among females with high levels of body dissatisfaction, but not among participants with low levels of body dissatisfaction. This relationship remained even after controlling for Body Mass Index (BMI), indicating that body size is only one of the contributors to depression and that teasing may have a mediating effect.

2. **Bucchianeri MM, Eisenberg ME, Wall MM, Piran N, Neumark-Sztainer D. Multiple types of harassment: Associations with emotional well-being and unhealthy behaviors in adolescents. *Journal of Adolescent Health*. 2014; 1-6.**

Bucchianeri et al. analyzed 2010 data from the Eating and Activity for Teens survey. This survey is administered to students in public middle and high schools in Minnesota (n=2,793). The researchers found that, after controlling for age, race/ethnicity, BMI and socioeconomic status (SES), adolescents who reported being harassed had higher odds of substance use and self-harm behavior, lower self-esteem, lower body satisfaction, and greater symptoms of depression than their peers who did not report being harassed.

3. **Burton CM, Marshal MP, Chisolm DJ, Sucato GS, Friedman MS. Sexual minority-related victimization as a mediator of mental health disparities in sexual minority youth: A longitudinal analysis. *Journal of Youth and Adolescence*. 2013; 42(3): 394-402.**

Burton et al. analyzed longitudinal survey data from 189 adolescent participants recruited from one adolescent medicine clinic in Ohio and one in Pennsylvania. Participants filled out a battery of questionnaires at wave 1, and again at wave 2 six months later. The researchers classified the participants as either 100% heterosexual or LGBTQ (which included participants who identified as 'mostly heterosexual,' 'mostly homosexual,' or 'homosexual'). LGBTQ-specific victimization was analyzed by participant answers concerning if they were teased/bullied, hit/beaten up, treated unfairly, or called bad names because someone thought the participant was gay or lesbian in the past six months. After controlling for depressive symptoms at baseline, LGBTQ-specific victimization significantly mediated the effect of LGBTQ status on depressive symptoms and suicidality six months later. This indicates that targeted harassment and victimization are partly responsible for the higher levels of depressive symptoms and suicidality found in LGBTQ youth.

4. **Fedewa A, Ahn S. The effects of bullying and peer victimization on sexual-minority and heterosexual youths: A quantitative meta-analysis of the literature. *Journal of Glbt Family Studies*. 2011; 7(4): 398-418.**

Fedewa and Ahn conducted a meta-analysis of the published and unpublished literature on the effects of homophobic bullying on youth between 1999 and 2010. Eighteen studies fit their inclusion criteria. Because some of these studies included multiple samples (e.g. one sample for male participants and one sample for female participants), Fedewa and Ahn analyzed the studies as 22 independent samples. The combined results from the studies indicated that lesbian, gay, and bisexual youth were much more likely to be bullied, teased, and victimized by peers than heterosexual youth. Again, using combined odds ratios from all studies, Fedewa and Ahn found that lesbian, gay, and bisexual youth were more likely to experience an unwelcoming school climate, suicidal ideation, suicide attempt, sexual and physical abuse, mental health problems, and substance use than heterosexual youth. In addition, combined odds ratios also indicated that homophobic bullying was associated with psychological, physical, and social problems for lesbian, gay, and bisexual youth. These outcomes include: suicide attempts, mental health problems, hostile school climate or lack of school belonging, absence of social support from friends and family, and externalizing/behavioral problems.

5. **Gonsalves D, Hawk H, Goodenow C. Unhealthy weight control behaviors and related risk factors in Massachusetts middle and high school students. *Maternal and Child Health Journal*. 2013; 15.**

Gonsalves et al. analyzed data from the Massachusetts Youth Health Survey conducted in middle and high schools. The researchers found that high school students who reported being involved in bullying (either as a bully, a victim, or both) had 2.5 times higher odds of reporting unhealthy weight control behaviors, while middle school students involved in bullying had 1.8 times higher odds of reporting unhealthy weight behaviors than their peers after controlling for sex and race/ethnicity. Unhealthy weight control behaviors included fasting, vomiting purposely after eating, and taking diet pills without a doctor's permission.

6. **Healthy Youth Survey. QxQ Analysis. 2012. Accessed February 10, 2014. Available from http://www.askhys.net/Analyzer.**

Data from the 2012 Washington State Healthy Youth Survey indicate that over 30% of 6th and 8th graders, over 25% of 10th graders, and nearly 20% of 12th graders reported that they had been bullied in the past 30 days. These data also show that students who are bullied are significantly more likely to report a number of negative health outcomes such as depression, suicide contemplation and attempt, decreased physical activity, lower grades, low commitment to school, and skipping breakfast. These survey data also indicate that there are high rates of cyberbullying in Washington schools with over 10%

of surveyed students indicating that they had been bullied, harassed, or intimidated via computer or cell phone in the past 30 days. These youth who have been cyberbullied are also significantly more likely to report negative health outcomes. In addition, these data indicate that almost 12% of 8th grade students, nearly 11% of 10th grade students, and about 7% of 12th grade students have been harassed at school due to perceived sexual orientation. These students (regardless of how they actually identify) are significantly more likely than their peers who have not been subjected to such harassment to experience more risk factors and negative health outcomes. For example, youth who are harassed for being perceived as gay, lesbian, or bisexual are more likely to be currently using alcohol, cigarettes, marijuana, or other illegal drugs; are more likely to have been involved in a physical fight at school; are less likely to be living with their parents (e.g. are homeless, living in a shelter, living with friends); have lower grades; and are more likely to suffer from depression; and to contemplate or attempt suicide. Note that this information only indicates the existence of an association between bullying and negative health outcomes and does not indicate causation. This basic analysis of the data did not control for potential confounding factors.

7. **Jensen CD, Cushing CC, Elledge AR. Associations between teasing, quality of life, and physical activity among preadolescent children.** ***Journal of Pediatric Psychology*****. 2013; 8.**

Jensen et al. analyzed data from preadolescent participants who were recruited though a Midwestern public school district. They collected the first wave of data in the fall of 2010 (n=304) and the second wave of data in fall of 2011 (which included 108 of participants from the first sample). The researchers found that children with BMIs classified in the overweight or obese range who experienced teasing during physical activity were more likely to report poorer health-related quality of life one year later. In addition, children with average weight who experienced teasing during physical activity were at increased risk for reduced physical activity one year later.

8. **LeVasseur MT, Kelvin EA, Grosskopf NA. Intersecting identities and the association between bullying and suicide attempt among New York city youths: Results from the 2009 New York city youth risk behavior survey.** ***American Journal of Public Health.*** **2013; 103(6): 1082-9.**

LeVasseur et al. analyzed data from the 2009 New York City Youth Risk Behavior Survey (n=11,887). The researchers classified any student who identified as lesbian, gay, or bisexual as non-heterosexual and any student who identified as heterosexual or 'unsure' as heterosexual. They found that youth who did not identify as heterosexual were more likely to report being bullied, and also more likely to report attempting suicide than their heterosexual peers. In addition, youth who reported being bullied had 2.98 higher odds of suicide attempt than youth who had not been bullied.

9. **Schneider SK, O'Donnell L, Stueve A, Coulter RW. Cyberbullying, school bullying, and psychological distress: A regional census of high school students.** ***American Journal of Public Health*****. 2012; 102(1): 171-7.**

Schneider et al. analyzed data from a census of high school students from Massachusetts (n=20,406). The researchers found that students who did not identify as heterosexual were more likely to be victims of both cyberbullying and school bullying than their heterosexual peers. They also found that youth who were victims of bullying reported lower school performance and attachment; higher levels of distress; increased depressive symptoms; and higher rates of self-injury, suicidal ideation, and suicide attempts.

10. Wolke D, Copeland WE, Angold A, Costello EJ. Impact of bullying in childhood on adult health, wealth, crime, and social outcomes. *Psychological Science (Sage Publications Inc.)*. 2013; 24(10).

Wolke et al. analyzed data from the Great Smoky Mountain Study, a longitudinal study which followed three cohorts of children through age 26. At intake, participants were from 11 counties in North Carolina. The study had an 80% participation rate (n=1,420). After adjusting for childhood family hardships (e.g. socioeconomic position, family stability, maltreatment) and child psychiatric problems (e.g. depression, anxiety, disruptive behavior), the researchers found that being a victim of bullying, including victims of bullying who were also bully perpetrators ('bully-victims'), was a predictor of diminished health, wealth, and social relationships in adulthood. After controlling for confounding factors the researchers found that bullying involvement did not predict risky or illegal behavior in adulthood. In addition, they found a dose-response effect of being bullied on poor wealth and social outcomes—indicating that being bullied chronically lead to worse adult outcomes on these measures than being bullied at one point in time. The health outcomes included several measures such as diagnosis with a serious physical illness, sexually transmitted infection, or mental disorder; BMI; smoking; self-perceived poor health; high illness-contagion risk; and slow recovery from illness. The wealth outcome included measures of financial and educational attainment. The social relationship outcome included measures of marital, parenthood, and divorce status; quality of subject's relationships; violence in a romantic relationship; poor relationship with one's parents; absence of a best friend; and problems making friends.

Evidence for how decreasing bullying in schools may improve health outcomes, particularly for LGBTQ students—a population at high risk for being bullied

Summary of findings

There is a strong body of evidence indicating that LGBTQ youth are more likely to be bullied than heterosexual youth, even after controlling for potential confounding factors. The evidence indicates that this trend is true for both in-person bullying and cyberbullying. A study conducted in Seattle schools found similar trends. The body of evidence on this topic is broad and a preliminary review of the literature yielded no studies contradicting these findings. Because LGBTQ youth are more likely to be bullied than their heterosexual peers, and because bullying is associated with negative health outcomes, decreasing bullying in schools has strong potential to improve health outcomes particularly for LGBTQ students. A few studies are cited here as examples of the literature.

Annotated references

11. Berlan ED, Corliss HL, Field AE, Goodman E, Austin SB. Sexual orientation and bullying among adolescents in the Growing Up Today Study. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine*. 2010; 46(4): 366-71.

Berlan et al. analyzed data from the 2001 Growing Up Today Study. Respondents were between the ages of 14 and 22 years (n=7,559). The researchers found, after controlling for potential confounding factors such as age, race/ethnicity, and weight, that 'mostly heterosexual males,' and 'gay males' were more likely to report being bullied than 'heterosexual males.' In addition, lesbian youth were over three times as likely to report being bullied as their heterosexual female peers. Berlan et al. also found that 'mostly heterosexual females,' 'bisexual females,' and 'lesbians' were more likely to report being bullied than 'heterosexual females.' They also found that females who identified as mostly heterosexual and bisexual were more likely to report bullying others than

heterosexual females, while gay males were much less likely to report bullying others than heterosexual males.

12. Fedewa A, Ahn S. The effects of bullying and peer victimization on sexual-minority and heterosexual youths: A quantitative meta-analysis of the literature. *Journal of Glbt Family Studies*. 2011; 7(4): 398-418.

Fedewa et al. conducted a meta-analysis of the published and unpublished literature on the effects of homophobic bullying on youth between 1999 and 2010. Eighteen studies fit their inclusion criteria. Because some of these studies included multiple samples (e.g. one sample for male participants and one sample for female participants), Fedewa et al. analyzed the studies as 22 independent samples. The combined results from the studies indicated that lesbian, gay, and bisexual youth were much more likely to be bullied, teased, and victimized by peers than heterosexual youth. Again, using combined odds ratios from all studies, Fedewa et al. found that lesbian, gay, and bisexual youth were more likely to experience an unwelcoming school climate, suicidal ideation, suicide attempt, sexual and physical abuse, mental health problems, and substance use than heterosexual youth. In addition, combined odds ratios also indicated that homophobic bullying was associated with psychological, physical, and social problems for lesbian, gay, and bisexual youth. These outcomes include: suicide attempts, mental health problems, hostile school climate or lack of school belonging, absence of social support from friends and family, and externalizing/behavioral problems.

13. Hillard P, Love L, Franks HM, Laris BA, Coyle KK. "They were only joking": Efforts to decrease LGBTQ bullying and harassment in Seattle Public Schools. *Journal of School Health*. 2014; 84(1): 1-9.

Hillard et al. collected data through a student questionnaire at 14 of the 21 middle and high schools in the Seattle Public School District. All students involved in their schools' Gay Straight Alliance (GSA) were invited to complete the survey. The researchers had a 55% response rate. In addition, the researchers conducted focus groups in seven of the schools. The results indicate that GSA students who were LGBTQ were more likely than straight students to experience several forms of harassment. In addition, non-white GSA students were more likely than white GSA students to report most forms of harassment. The researchers also found that students rated the effectiveness of teacher interventions between 'not very effective' and 'somewhat effective.' The students also expressed that some teachers make an effort to stop harassment while others ignore the problem or could intervene more effectively. In the focus groups students provided some suggestions for how to better address harassment: "addressing the problem immediately; using consistent and strong responses; taking time to explain why the words or actions were offensive; involving parents; involving the principal; and having stricter consequences for inappropriate behavior; [and]…integrating bullying and harassment issues into the school curriculum."

14. LeVasseur MT, Kelvin EA, Grosskopf NA. Intersecting identities and the association between bullying and suicide attempt among New York City youths: Results from the 2009 New York City Youth Risk Behavior Survey. *American Journal of Public Health.* 2013; 103(6): 1082-9.

LeVasseur et al. analyzed data from the 2009 New York City Youth Risk Behavior Survey (n=11,887). The researchers classified any student who identified as lesbian, gay, or bisexual as non-heterosexual and any student who identified as heterosexual or 'unsure' as heterosexual. They found that youth who did not identify as heterosexual were more likely to report being bullied, and also more likely to report attempting suicide than their heterosexual peers. In addition, youth who

reported being bullied had 2.98 higher odds of suicide attempt than youth who had not been bullied.

15. Schneider SK, O'Donnell L, Stueve A, Coulter RW. Cyberbullying, school bullying, and psychological distress: A regional census of high school students. *American Journal of Public Health.* 2012; 102(1): 171-7.

Schneider et al. analyzed data from a census of high school students from Massachusetts (n=20,406). The researchers found that students who did not identify as heterosexual were more likely to be victims of both cyberbullying and school bullying than their heterosexual peers. They also found that youth who were victims of bullying reported lower school performance and attachment; higher levels of distress; increased depressive symptoms; and higher rates of self-injury, suicidal ideation, and suicide attempts.

Evidence for how decreasing bullying in schools may improve health outcomes, particularly for underweight and overweight students—populations at high risk for being bullied

Summary of findings

There is some evidence that both youth with BMIs above average and those with BMIs below average are more likely to be bullied than youth with average BMIs. This trend has been found across several types of bullying including physical, verbal, relational, and cyberbullying. Although there is a broad body of strong evidence supporting these findings nationally, data from the 2012 Washington Youth Survey (aggregating data for all counties in the state) indicate that BMI (based on self-reported weight and height) was not associated with bullying rates. The survey data however show that students who indicated that they were trying to gain or lose weight did report being bullied at higher rates than students who were not trying to do anything about their weight. In addition, one longitudinal study which included data collected in Seattle, Washington found that obese children (defined using body mass index) were more likely to be bullied even after controlling for potential confounding factors such as gender, race, socioeconomic position, school racial and socioeconomic composition, mother- and teacher-reported child social skills, and child academic achievement. Because evidence indicates that overweight and underweight students may be more likely to experience bullying, and the literature provides very strong evidence that being bullied is associated with negative health outcomes, decreasing bullying has the potential to improve health outcomes among these student populations. A few articles highlighting this relationship are cited here as examples of the literature.

Annotated references

16. Healthy Youth Survey. QxQ Analysis. 2012. Accessed February 10, 2014. Available from http://www.askhys.net/Analyzer.

Data from the 2012 Washington State Healthy Youth Survey indicate that students who were overweight or obese did not report significantly higher levels of bullying than their peers who were not overweight. BMI was calculated using self-reported height and weight. Students who indicated that they were trying to lose weight did report being bullied at higher rates than students who were trying to stay the same weight or not trying to do anything about their weight. In addition, students that were trying to gain weight also reported being bullied at higher rates than students who were not trying to do anything about their weight. Note that this is a basic analysis of the data which did not control for potential confounding factors and does not indicate causation.

17. Puhl RM, Luedicke J, Heuer C. Weight-based victimization toward overweight adolescents: Observations and reactions of peers. *The Journal of School Health*. 2011; 81(11): 696-703.

Puhl et al. provided a detailed literature review in their introduction citing a number of studies which indicate that the likelihood of verbal, relational, and physical peer victimization increases with BMI. The researchers collected self-reported data via questionnaires from two high schools in Connecticut. A total of 1,555 students from grades nine through 12 completed the survey. Forty-one percent of the participants identified weight as the primary reason that students are bullied (followed by 38% who identified sexual orientation as the primary reason). The majority of participants indicated that they have observed weight-based bullying, with less than 5% of students indicating that they have never observed weight-based bullying.

18. Puhl RM, Peterson JL, Luedicke J. Weight-based victimization: Bullying experiences of weight loss treatment-seeking youth. *Pediatrics*. 2013; 131(1): 1-9.

Puhl et al. conducted online self-report surveys with adolescents (ages 14-18 years) enrolled in youth weight loss programs (n=361). They had a response rate of 27.3%. A majority of the participants (64%) indicated that they had experienced weight-based victimization. Participants reported that they were bullied by peers, friends, and adults (including physical education and other teachers, coaches, and parents). The youth also reported several types of victimization: verbal, relational, physical and cyberbullying. As body weight increased, participants were more likely to report weight-based victimization.

19. Lumeng JC, Forrest P, Appugliese, DP, Kaciroti N, Corwyn RF, Bradley RH. Weight status as a predictor of being bullied in third through sixth grades. Pediatrics. 2010; 125(6): e1301-e1307.

Lumeng et al. analyzed data from a longitudinal study focused on child behavior and development. Participants were recruited at birth beginning in 1991 from ten cities across the country, including Seattle, Washington (n=821). The youth, their teachers, and their mothers completed questionnaires. The researchers found that obese children (defined using body mass index) were more likely to be bullied even after controlling for potential confounding factors such as gender, race, socioeconomic position, academic achievement, school racial and socioeconomic composition, and mother- and teacher-reported child social skills.

20. Wang J Iannotti RJ, Luk JW. Bullying victimization among underweight and overweight U.S. youth: Differential associations for boys and girls. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*. 2010; 47(1): 99-101.

Wang et al. analyzed data from the 2005-2006 United States' Health Behavior in School-Aged Children study. Students in grades six through ten completed in-school surveys (n=6,939). The researchers found that underweight males were more likely to be victims of physical bullying while overweight males and obese females were more likely to be victimized verbally. Underweight females were at higher risk for being victimized relationally than other youth.

Evidence for how improving health outcomes for LGBTQ students may decrease health disparities

Summary of findings

There is very strong evidence indicating that LGBTQ adults and youth disproportionately experience many negative health outcomes. Many of the negative health outcomes disproportionally experienced by LGBTQ youth are the same health problems that are associated with being bullied. Therefore improving health outcomes for this student population by decreasing bullying has strong potential to decrease health disparities. This is supported by a very large body of evidence. For example data indicate that LGBTQ youth are more likely to consider or attempt suicide; skip school because they feel unsafe; have property damaged or stolen while at school; use alcohol, tobacco, and other illegal substances; and have a high Body Mass Index (BMI). Data from the Washington State Healthy Youth Survey also indicate that students who are harassed at school due to their perceived sexual orientation (irrespective of how they actually identify) are also more likely to suffer from negative health outcomes such as substance use; homelessness; lower grades; and suicide contemplation or attempts. This provides some insights into the social stigma, harassment, and discrimination that exist in Washington's schools in relation to sexual orientation, and the negative health outcomes that are associated with this stigma. A few recent articles are presented here as examples of the large body of literature on health disparities by sexual orientation.

Annotated references

21. Balsam KF, Beadnell B, Riggs KR. Understanding sexual orientation health disparities in smoking: A population-based analysis. *American Journal of Orthopsychiatry*. 2012; 82(4): 482-493.

Balsam et al. analyzed Washington State Behavioral Risk Factor Surveillance System data from 2003 to 2007. Survey participants were asked to indicate whether they consider themselves to be 'heterosexual,' 'homosexual,' or 'bisexual, or something else.' Respondents who recorded 'other' or 'don't know/not sure' were excluded from analysis. The researchers found that respondents who self-identified as lesbian, gay, or bisexual were more likely to smoke cigarettes. The researchers conducted modeling in order to identify protective factors and risk factors for smoking. They found that psychological distress and life dissatisfaction were risk factors for lesbian, gay, and bisexual populations. They point to other research which has found higher levels of anxiety and depression among LGBTQ individuals. Balsam et al. found that alcohol use is a risk factor for smoking, and they also pointed to previously published evidence that alcohol use rates are higher among LGBTQ populations. They also found tobacco marketing targeted at LGBTQ communities as well as single relationship status were risk enhancers for smoking. Note that the researchers also identified protective factors among lesbian, gay, and bisexual participants such as higher education levels. In addition, there are trends that are unique to subpopulations (such as different risk or protective factors for bisexual women than for lesbian women), so the researchers are careful not to generalize findings that are unique to specific subpopulations.

22. Duncan DT, Hatzenbuehler ML. Lesbian, gay, bisexual, and transgender hate crimes and suicidality among a population-based sample of sexual-minority adolescents in Boston. *American Journal of Public Health*. 2013; 5.

Duncan and Hatzenbuehler analyzed 2008 Boston Youth Survey data for 9th through 12th graders. They aggregated data from all students who self-identified as 'mostly heterosexual,' 'bisexual,' 'mostly homosexual,' 'gay or lesbian,' or 'unsure.' The researchers found that LGBTQ adolescents were more likely to contemplate and attempt suicide than their heterosexual peers. Nearly one third of LGBTQ adolescents reported suicidal ideation in the past year compared to 9.43% of heterosexual youth. They also found that LGBTQ youth who contemplated or attempted suicide were more likely to live in neighborhoods with higher LGBTQ assault hate crimes.

23. Healthy Youth Survey. QxQ Analysis. 2012. Accessed February 3, 2014. Available from http://www.askhys.net/Analyzer.

Data from the 2012 Washington State Healthy Youth Survey indicate that almost 12% of 8th grade students, nearly 11% of 10th grade students, and about 7% of 12th students have been harassed at school due to perceived sexual orientation. These students (regardless of how they actually identify) are significantly more likely than their peers who have not been subjected to such harassment to experience more risk factors and negative health outcomes. For example, youth who are harassed for being perceived as gay, lesbian, or bisexual are more likely to be currently using alcohol, cigarettes, marijuana, or other illegal drugs; are more likely to have been involved in a physical fight at school; are less likely to be living with their parents (e.g. are homeless, living in a shelter, living with friends); have lower grades; and are more likely to suffer from depression and to contemplate or attempt suicide. Note that this information only indicates the existence of an association between harassment based on perceived sexual orientation and these negative health outcomes and does not indicate causation. This basic analysis of the data did not control for confounding factors. This provides some insight into the social stigma, harassment, and discrimination that exists in Washington's public schools in relation to sexual orientation, and the negative health outcomes that are associated with this harassment.

24. Rosario M, Corliss HL, Everett BG, et al. Sexual orientation disparities in cancer-related risk behaviors of tobacco, alcohol, sexual behaviors, and diet and physical activity: Pooled Youth Risk Behavior Surveys. *American Journal of Public Health*. 2013; 3.

Rosario et al. analyzed Youth Risk Behavior Survey (YRBS) data for 14 of the 15 jurisdictions in the United States that conduct these surveys and collect data on sexual orientation (n=65,871). They defined sexual orientation using survey questions relating to sexual attractions, gender of sexual partners, or sexual identity. In addition, they classified any student who indicated that they were uncertain of their sexual identity as having same-sex orientation. The researchers found that youth who indicated same-sex orientation reported more cancer-related risk behaviors than did heterosexual students. For example, youth who indicated same-sex orientation were more likely to have a high BMI and to use substances such as alcohol, cigarettes, and other tobacco products.

25. Russell ST, Everett BG, Rosario M, Birkett MA. Indicators of victimization and sexual orientation among adolescents: Analyses from Youth Risk Behavior Surveys. *American Journal of Public Health*. 2013; 2.

Russell et al. analyzed YRBS data from 13 jurisdictions that collect YRBS surveys and measured either sexual orientation identification or gender of sexual partners (n=48,879). The data revealed that students who reported same-sex orientation in their identity or behavior were significantly more likely to report fighting, skipping school because they felt unsafe, and having property damaged or stolen while at school. LGBTQ youth also reported higher scores on indicators of victimization. The researchers also point out nuanced differences in outcomes between subpopulations of LGBTQ youth, indicating that it is important to consider the unique needs and experiences of each subpopulation.

Evidence for how improving health outcomes for underweight and overweight students may decrease health disparities

Summary of findings

There is some evidence that both underweight and overweight individuals are more likely than average weight individuals to experience some of the same negative health outcomes associated with being bullied, such as depression and suicide ideation and attempts. This indicates that improving health outcomes for these populations by decreasing bullying has potential to decrease health disparities.

Although there is a relatively broad body of literature on the positive association between BMI and depression, suicide, and substance abuse, the findings have been mixed. Some studies have found a positive association between being underweight or overweight and depression, suicide ideation or attempts while other studies have found no association or a negative association. The literature that focuses on adolescents is more consistent, with a majority of the evidence indicating that being underweight or overweight is associated with depression and suicide ideation or attempts among youth. Data from the Washington Healthy Youth Survey indicate that in some (but not all) grades, being in a BMI range classified as 'obese' is associated with significantly higher rates of depression, suicide contemplation, and smoking cigarettes. A few examples from the literature on this topic are cited here.

Annotated references

26. Cortese S, Falissard B, Angriman M, et al. The relationship between body size and depression symptoms in adolescents. *The Journal of Pediatrics.* 2009; 154(1) 86-90.

Cortese et al. analyzed survey data from 678 youth (ages 11 to 14 years) from seven junior high schools in Verona, Italy. The researchers explored the relationship between BMI and Children's Depression Inventory (CDI) scores. They found that, after controlling for SES and age, underweight and heavier-than-average female participants and obese male participants had the highest depression scores.

27. Eaton DK, Lowry R, Brener ND, Galuska DA, Crosby AE. Associations of body mass index and perceived weight with suicide ideation and suicide attempts among US high school students. *Archives of Pediatrics & Adolescent Medicine*. 2005; 159(6): 513-9.

Eaton et al. analyzed data from the 2001 Youth Risk Behavior Survey for students from 9th through 12th grades (n=13,601). They found that, after controlling for potential confounding factors, BMI was associated with suicide ideation and suicide attempts. The odds of suicide ideation were greater among students who were underweight and overweight than among students who were average weight. This trend was also true among white students for suicide attempts. The researchers also found a positive association between BMI category and perceived weight. Eaton et al. found that student perceived weight mediated the relationship between BMI and suicide ideation/attempts. They found that students who perceived themselves as underweight or overweight had greater odds of suicide ideation. Among white students, perceiving oneself as very underweight or very overweight was also associated with greater odds of suicide attempts. For black and Hispanic students, perceiving oneself as very underweight was associated with greater odds for suicide attempts.

28. Frisco ML, Houle JN, Martin MA. Adolescent weight and depressive symptoms: For whom is weight a burden?. *Social Science Quarterly*. 2009; 90(4): 1019-1038.

Frisco et al. analyzed data from the Add Health Survey, a school-based, longitudinal national survey of 7th through 12th graders. The data also included interviewer-measured height and weight. The researchers found that being overweight or obese is not associated with depressive symptoms among males, but being underweight is. Underweight males had almost 2.5 times greater odds of reporting depressive symptoms than their average-weight peers. The researchers found no relationship between BMI and depressive symptoms for female participants.

29. Goldfield GS, Moore C, Henderson K, Buchholz A, Obeid N, Flament MF. Body dissatisfaction, dietary restraint, depression, and weight status in adolescents. *The Journal of School Health*. 2010; 80 (4): 186-92.

Goldfield et al. analyzed survey data from 7-12 graders (n=1,490). The questionnaires included questions on body image, eating behavior, and mood. The researchers also measured the participants'

height and weight to calculate BMI. Goldfield et al. found that overweight youth reported higher body dissatisfaction than average-weight youth. In addition, obese students reported greater depressive symptoms (including anhedonia, negative self-esteem, and overall depression scores) than average-weight youth.

30. Healthy Youth Survey. QxQ Analysis. 2012. Accessed February 10, 2014. Available from http://www.askhys.net/Analyzer.

Data from the 2012 Washington State Healthy Youth Survey indicate that 8th grade students who were obese reported higher rates of suicide contemplation in the past 12 months than students who were not overweight. There was no significant difference in these rates for 10th and 12th grade students. Students in 12th grade who were obese reported higher rates of depression than students who were not overweight. There was no significant difference in these rates for 8th and 10th grade students. The data also indicate that obese students in 10th and 12th grades reported higher smoking rates than students who were not overweight. Note that this information only indicates the existence of an association between BMI and these health outcomes and does not indicate causation. This basic analysis of the data did not control for potential confounding factors.

31. Klinitzke G, Steinig J, Blüher M, Kersting A, Wagner B. Obesity and suicide risk in adults--a systematic review. *Journal of Affective Disorders*. 2013; 145(3): 277-84.

Klinitzke et al. conducted a review of the literature published between 2000 and 2011 on suicide risk in adults and the relationship to obesity. They identified 15 studies which met their inclusion criteria. Ten studies evaluated the relationship between BMI and completed suicide. Eight of these studies found an inverse relationship between BMI and suicide (indicating that as BMI increased suicide rates decreased), one study found no relationship, and one study found a positive association. When considering studies which looked at suicide ideation and attempts, the literature revealed that women with BMIs in the 'obese' range reported more suicide attempts and ideation, while males with BMIs in this range reported fewer attempts and ideations.