Article

Bullying Victimization as a Predictor of Suicidality among South Dakota Adolescents: A Secondary Data Analysis Using the 2015 Youth Risk Behavior Survey

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ABSTRACT Bullying is a form of peer victimization with a well-established link to suicidality among adolescents in the United States (Holt et al. 2015). Few studies focus explicitly on examining bullying at the state-level, including South Dakota. We argue that state-level data are valuable for policymakers wishing to better understand adolescent bullying and suicidality at a local level. Using a secondary data analysis of 2015 Youth Risk Behavior Survey data from South Dakota and U.S. samples, this study provided a description of bullying victimization and suicidality in South Dakota and tested bullying victimization as a predictor of suicidality among adolescents in the state. Three key findings are worth noting: 1) South Dakota displayed significantly slightly higher bullying victimization relative to the nation, 2) bullying victimization was significantly associated with higher suicidality among South Dakota adolescents, and 3) suicidality was highest among adolescents experiencing both forms of bullying (bullied at school and cyberbullying) tested in this study. While we speculate regarding explanations of this finding (e.g., more frequent bullying, traditional/cyberbullying interactions), further research is needed to better understand how these two forms of bullying produce increased adolescent suicidality.

INTRODUCTION

Bullying is a widespread form of peer victimization among adolescents (youth between 12 to 19 years of age) in the United States. According to the United States Centers for Disease Control and Prevention's (CDC) Youth Risk Behavior Survey (YRBS), about 24% of high school students in the U.S. experienced some form of bullying victimization in 2015 (CDC 2015). Bullying victimization is linked to a variety of negative outcomes including: lower school engagement and academic achievement, depression, substance use, depression, and suicidality (Espelage and Holt 2013; Holt et al. 2015; Lad, Ettekal, and Kochenderfer-Ladd 2017; Luk, Wang, and Simons-Morton 2010). Mental health professionals advocate the use of a public health approach to address bullying – a model that first requires those responding to understand the scope and consequences of the problem (Hertz, Donato, and Wright 2013; WHO Violence Prevention Alliance 2017). However, much of the data and research on bullying victimization available is at the national level and thus may not accurately reflect local conditions – especially in states which are less demographically representative of the U.S. population. By some estimates, bullying victimization may impact anywhere from 20% to 56% of young people (Hertz, Donato, and Wright 2013). More localized data and research provide those responding to bullying with a better understanding of the scope and consequences of bullying victimization in their locale, which is useful for informing an effective response.

This study used a secondary data analysis of data from the CDC's 2015 Youth Risk Behavior Survey to better understand bullying victimization and its association with suicidality (defined as either suicidal ideation or attempts) within the state of South Dakota. Toward this effort, we aimed to accomplish two goals: 1) describe the scope of bullying victimization and suicidality in South Dakota relative to the U.S. and 2) test bullying victimization as a predictor of suicidality among adolescents in South Dakota.

REVIEW OF LITERTURE

BULLYING DEFINED

Bullying is a form of peer victimization where children are targets of physical and verbal harm by other children. Bullying also involves an imbalance of power where those who have real or perceived higher power victimize those with less power (US HHS 2017). This imbalance has the ability to change based on a number of social dynamics, including the involvement of bystanders and potential development of bully-victims (those who bully and are victimized by bullying) (CDC 2014). Bullying victimization, the experience of being bullied, is often a repeated experience or "has the potential to be

repeated, over time" (CDC 2014:2). While the term "bullying" is often used as a single kind of phenomenon, there are several types of bullying which may occur via different venues, including traditional ("in person") bullying and cyberbullying.

The United States Department of Health and Human Services (US HHS 2017) identifies three types of bullying: verbal, social and physical bullying. Verbal bullying is when someone says something negative toward another person. This would include any form of teasing, intimidation, racist remarks, name-calling, or even threats of harm. Social bullying, also known as relational bullying, is designed to ruin or hurt someone's social reputation or relationships. Often people that are socially bullied are purposely socially excluded, may have rumors spread about them, and consequently have few friends because the person bullying persuades others to avoid the victim. Lastly, physical bullying involves physically attacking someone to cause short- or long-term damage. This typically would entail hitting, tripping, pushing, or even damaging personal property (US HHS 2017). Verbal and social bullying may or may not be "traditional bullying" (sometimes called "school bullying") or that which manifests in a school or other in-person environment (Schneider, O'Donnell, and Coulter 2012). Unlike physical bullying, verbal or social bullying can occur electronically.

While traditional bullying typically occurs on school grounds, playgrounds, or the bus, cyberbullying, alternately "electronic bullying," is yet a different form of peer victimization. Cyberbullying is a form of behavior that aims to intimidate or threaten an individual or a specific group via electronic communication (US HHS 2017). This would typically include the use of electronic technology such as cell phones, e-mail, social media sites (e.g. Facebook, Twitter, Instagram) and text messages (Hinduja and Patchin 2010). Like traditional bullying, cyberbullying may include verbal bullying as well as social bullying. One significant difference between traditional bullying and cyberbullying is that unlike traditional bullying which may occur in one central location (e.g., school), cyberbullying is decentralized and perhaps thus more difficult to escape (Görzig and Frumkin 2013). This gives rise to a somewhat panoptic experience where bullying victimization may occur at any time and even "on-the-go" via smartphones or other mobile devices (Görzig and Frumkin 2013). With the advent of new forms of electronic communications (e.g., Facebook, Snapchat, Facetime, virtual reality), researchers are only beginning to understand how these forms may be used by adolescents to victimize one another. Regardless of type or medium of bullying victimization, it is clear that the resulting harms may be extreme enough that they may contribute to an adolescent considering ending his/her own life.

BULLYING & SUICIDALITY

Suicide is the second leading cause of death for teenagers in the United States (VanOrman and Jarosz 2016). The suicide rate among teens (ages 15-19) is around 8.7 per 100,000 and varies depending upon a variety of related variables (e.g., gender,

poverty, sexual orientation) (CDC 2017; Silenzo et al. 2007; VanOrman and Jarosz 2016). Though suicide has a number of complex and interrelated predictive factors, the association between bullying victimization and suicidality is well-established.

In this study, suicidality includes both suicidal ideation (thoughts of suicide) and suicide attempts (Holt et al. 2015). Probably one of the most comprehensive contemporary studies on bullying and suicidality was conducted by Holt et al. (2015). Holt et al. (2015) used a multilevel meta-analysis of 47 studies published from 1990-2013 to test the relationship between bullying victimization and suicidality. Holt et al. (2015) examined three types of predictors commonly employed in bullying and suicidality studies of adolescents, including: bullying perpetration, victimization, and bully-victim – incidents where a person is both a perpetrator and victim of bullying. Ultimately, Holt et al. (2015) found that all three were significant predictors of suicidality across the studies analyzed with bully-victims being most strongly associated with suicidal ideation and bullying victimization predicting significant positive moderate effects on suicidal ideation (Holt et al. 2015). In addition to Holt et al. (2015), other researchers focused more specifically on examining the medium of bullying (traditional vs. cyberbullying) as a predictor of suicidality. Hinduja and Patchin (2010) found that both traditional bullying and cyberbullying are significantly associated with suicidality, while other studies suggest that adolescents experiencing victimization across both mediums may suffer the highest levels of psychological distress, including suicidality (Schneider, O'Donnell, and Coulter 2012). Though the correlation between bullying victimization and suicidality is well-established, theorizing the causal link between the two is more elusive in the literature (Steger, Chen, and Cigularov 2013).

Most studies of the bullying-victimization and suicidality association focus on theories that explain suicidality as a resulting from the deleterious psychological consequences of bullying victimization (Barchia and Bussey 2010; Hay and Meldrum 2010). Social psychological theories focus more strongly on the social alienation/low belongingness experienced by victims of bullying, notably the concept of social support, or the support (including emotional, instrumental, informational, and appraisal) people feel they receive from others (Rothon, Head, Klineberg, and Stansfeld 2011). Social support is primarily conceptualized by past research as support from family, schools, and peers (Holt and Espelage 2007; Zhang et al. 2016). Social support is identified as a key moderator between victimization and psychological distress, including suicidality (Barchia and Bussey 2010; Holt and Espelage 2007; Zhang et al. 2016). Scholars familiar with early research on suicide by Emile Durkheim may notice some validation of his ideas in these findings. Specifically, it seems Durkheim's ideas about heightened risk of suicide for those who experience less social integration (see "egoistic suicide") is reflected in the moderating role played by social support in the bullying victimization/suicidality association (Durkheim 1897/1953).

Given the operationalization of bullying victimization and suicidal ideation in this study, it is difficult to suggest or make claims about causality and thus impossible to really test any specific theory of the association. However, the clear link established by past studies between bullying victimization and suicidal ideation suggests the likelihood of similar findings among adolescents in South Dakota. Hopefully, this study will serve to describe the prevalence of bullying victimization and suicidal ideation within South Dakota as well as the possible association between the two. This information is valuable for understanding the scope and consequences of bullying victimization at a local level.

METHODS

Since 1991 the United States Centers for Disease Control (CDC) has monitored health risk behaviors of U.S. adolescents (youths 12 to 18 years of age) through their Youth Risk Behavior Surveillance System (CDC 2015). A central feature of the CDC's risk surveillance is a biannual Youth Risk Behavior Survey (YRBS) of "9th through 12th grade students in public and private schools in the United States" (CDC 2015). National YRBS data are available for download via the CDC website, while state level samples may be requested using the "data request form" provided on the same website (CDC 2015). Nearly every state in the United States and some U.S. territories participated in the 2015 YRBS high school survey, with the exception of Washington, Oregon, and Minnesota (CDC MAP 2017). However, not all state questionnaires mirror that of the national instrument. South Dakota, for example, is one of the 25 states that do not collect data on adolescent sexual orientation (Gifford 2017). Among the health-risk behaviors assessed by the YRBS at the state and national level are those that "contribute to unintentional injuries and violence" (CDC 2015), including bullying victimization and suicidality – the two key variables examined in this study. Despite some variation between the South Dakota and national questionnaires, the questions measuring bullying victimization and suicidality were the same. Before specifying these variables and the limitations of the YRBS, some basic demographics of the two samples used in this study are provided.

SAMPLE

Demographically, the South Dakota and national samples display similarities in distributions of age and sex of respondents but noticeable differences in their racial and ethnic makeup. Table 1 displays some general demographic characteristics of the South Dakota and national samples. Distributions of sex were fairly even across both samples, though the percentage of females (51.1%) was slightly higher than males (48.9%) in South Dakota. Regarding distributions of age, South Dakota and U.S. samples were also

very similar. Most respondents in each sample, around 75%, were between 15 and 17 years of age. The U.S. sample was slightly older ($\bar{x}$ = 16.04 years old) than the South Dakota sample ($\bar{x}$ = 15.84 years old), but this was a negligible difference relative to the more pronounced differences in race. The South Dakota sample included 37.7% more respondents who identified as White and 1.8% more respondents who identified as American Indian/Alaska Native, while the U.S. sample included just over 9% more Black or African American respondents and over 13% more Hispanic/Latino respondents. General relationships between race and ethnicity, bullying, and suicidality among U.S. adolescents are not well established, though there is some research suggesting slightly lower bullying victimization among Black adolescents (Spriggs et al. 2007; Wang, Ionotti, and Nansel 2009). Across racial/ethnic groups, bullying behavior (victimization and perpetration) is more strongly related to peer and family dynamics than race or ethnicity (Spriggs et al. 2007).

Table 1. 2015 YRBS Sample Demographics from South Dakota and U.S. Samples

	South Dakota	United States
Sex		
Female	670 (51.1%)	7,757 (50.0%)
Male	641 (48.9%)	7,749 (50.0%)
Age		
12 years old or younger	11 (0.8%)	43 (0.3%)
13 years old	1 (0.1%)	17 (0.1%)
14 years old	225 (17.1%)	1,684 (10.8%)
15 years old	299 (22.8%)	3,817 (24.5%)
16 years old	318 (24.2%)	4,033 (25.9%)
17 years old	331 (25.2%)	3,833 (24.6%)
18 years old or older	127 (9.7%)	2,131 (13.7%)
Race / Ethnicity		
American Indian/Alaska Native	37 (2.9%)	163 (1.1%)
Asian	29 (2.3%)	627 (4.1%)
Black or African American	23 (1.8%)	1,667 (10.9%)
Hispanic/Latino	25 (2.0%)	2,365 (15.5%)
Native Hawaiian/other Polynesian	3 (0.2%)	100 (0.7%)
White	1,051 (82.6%)	6,849 (44.9%)
Multiple - Hispanic	53 (4.2%)	2,756 (18.1%)
Multiple – Non-Hispanic	52 (4.1%)	739 (4.8%)
Total Sample Size (N)	1,312	15,624

MEASURES

The primary goals of this study were to provide insights into bullying victimization among adolescents in South Dakota, including describing the prevalence of bullying victimization and testing its relationship to suicidality. Across both the South Dakota and U.S. questionnaires, the 2015 YRBS included two measures of bullying victimization as well as four measures of suicidality. Table 2 details YRBS questions used to measure the independent variable of bullying victimization and the dependent variable of suicidality.

Table 2. 2015 YRBS Variables Measuring Bullying Victimization and Suicidality

Variables	Response Options
Bullying Victimization	
Q 24. During the past 12 months, have you ever been bullied on school property?	1. Yes 2. No
Q 25. During the past 12 months, have you ever been electronically bullied?	1. Yes 2. No
Suicidality	
Q 27. During the past 12 months, did you ever seriously consider attempting suicide?	1. Yes 2. No
Q 28. During the past 12 months, did you make a plan about how you would attempt suicide?	1. Yes 2. No
Q 29. During the past 12 months, how many times did you actually attempt suicide?	0 times 1 time 2 or 3 times 4 or 5 times 6 or more times
Q 30. If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?	1. Yes 2. No

Bullying victimization was assessed with two questions assessing both traditional bullying (question 24) and cyberbullying (question 25) victimization, both with "yes" or "no" response options. One limitation of these questions is that they do not measure frequency, intensity, or duration of bullying activity, valuable information for testing

different dimensions of the bullying victimization-suicidality relationship. Frequency of bullying victimization is associated with higher risk of suicidality (CDC 2014). Despite these limitations, we were able to produce new insights from the two bullying victimization measures by combining the two questions to identify respondents who were not bullied, only bullied at school, only cyberbullied, and bullied both at school and cyberbullied. Combining these variables resulted in the ability to test for any variations in suicidality by type of bullying victimization.

Table 2 also presents the more robust four-question assessment of suicidality. These measures of suicidality are reflective of other commonly utilized suicidality scales, including the Columbia-Suicide Severity Rating Scale (C-SSRS) – a scale with well-established validity and reliability for assessing severity of suicidality (Posner et al. 2011). Like the C-SSRS, the YRBS measures are also arranged in a gradation of severity (e.g., "seriously considered suicide") to higher severity (e.g., suicide attempts, suicide attempt injury). This scaling permitted testing the relationship between bullying victimization and a gradient of less severe (i.e. suicidal thoughts) to more severe suicidality (i.e. suicide attempts) among adolescents.

LIMITATIONS

Methodological limitations of this study stem from the sampling used by the Centers for Disease Control as well as the measures employed. First, approximately 3% of the U.S. school-aged population is homeschooled (NCES 2017). The YRBS samples from public and private schools, so homeschooled adolescents are not included in this study. Second, the questions utilized by this study to observe bullying victimization and suicidality are certainly not complete measures of either variable. Bullying victimization, for example, does not measure frequency, duration, severity, or other important dimensions. Additionally, establishing causality between bullying victimization and suicidality is difficult since these two variables are measured indirectly via two separate sets of indicators. In other words, questions asking respondents whether their suicidality was influenced by bullying victimization would be more useful in establishing time-order and, therefore, causality. Finally, questions are also self-report and thus the extent of underreporting or over-reporting of these behaviors is difficult to determine.

FINDINGS

Using 2015 Youth Risk Behavior Study data from both the South Dakota and national samples, two sets of analyses aimed to accomplish the goals of the study. These analyses included: 1) describe bullying victimization and suicidality in South Dakota, including comparisons with the national data and 2) statistical analysis testing

bullying victimization as a significant predictor of suicidality among adolescents in South Dakota.

SOUTH DAKOTA IN A NATIONAL CONTEXT

The first goal of the study is to describe bullying victimization and suicidality in South Dakota within the context of the nation. When compared with the nation, the South Dakota population is whiter, more rural, more Christian, slightly less educated, and has a slightly lower median income (US Census 2017; US Census 2010; Pew 2017). Although these demographic differences do not specifically predict any state/national differences in bullying victimization and suicidality, they do demonstrate that the state is certainly not as demographically representative of the nation as other Great Plains states like Texas or Colorado. Thus, data from the state and national surveys were used to describe prevalence of bullying victimization and suicidality at each level. Additionally, one-sample z-tests for proportions were employed to conduct comparisons of state and national differences. These descriptive data and the comparison between state and national data are useful for better understanding the prevalence of adolescent bullying victimization and suicidality in South Dakota relative to the nation.

Table 3 displays the frequencies of bullying victimization among adolescents from the 2015 South Dakota and national YRBS. Respondents were categorized according to the form of bullying victimization experience, including: 1) bullied at school, 2) cyberbullied, and 3) bullied at school and cyberbullied. When compared with

Table 3. Frequencies of Bullying Victimization among Adolescents from the 2015 South Dakota and 2015 National Youth Risk Behavior Survey

	South Dakota	Nation
Bullied at school	145 (11.2%)	1,506 (9.8%)
Cyberbullied	84 (6.5%)	808 (5.2%)
Bullied at school & cyberbullied	143 (11.1%)	1,439 (9.3%)
Subtotal Bullied (in any form)*	372 (28.8%)	3,753 (24.4%)
Subtotal Not Bullied	919 (71.2%)	11,649 (75.6%)
Total (n)	1,291 (100.0%)	15,402 (100.0%)

*Significant difference between state and national proportion, $p < .05$

the national data, South Dakota displays a higher percentage of victimized youths across all three forms of victimization. Though none of these state-level proportions were significantly higher when isolated by victimization form, a one sample z-test of proportions revealed that the combined victimization percentage of South Dakota of 28.8% was significantly higher than the national population proportion of 24.4% (+4.4%, $p<.05$). The 4.4% higher percentage of bully victims in South Dakota does not reflect higher suicidality.

While bullying victimization was slightly higher among South Dakota adolescents relative to the U.S., the reverse was true for suicidality. Table 4 outlines descriptive data from the state and national YRBS for four measures of suicidality: 1) considered suicide, 2) made a suicide plan, 3) attempted suicide, and 4) injurious suicide attempt. Each question was "yes/no" apart from the "attempted suicide" measure, which was recoded from an ordinal variable measuring the number of suicide attempts to a dichotomous variable measuring only whether respondents attempted suicide. Once again, a one-sample z-test of proportions was used to test for significant differences between the state and national proportions. Overall, the proportion of South Dakota adolescents reporting suicidality across all measures is slightly lower, however, the only significant difference of proportions was for respondents who made a suicide plan. Around 12.6% of adolescent respondents in South Dakota reported making plans for suicide, which was significantly lower than the national percentage of 15.4%. This result was somewhat surprising since the South Dakota suicide rate is highest among those 15-24 years of age, which is "more than double the national rate, 25.0 vs. 11.1, respectively" (Kightlinger et al. 2017:6).

Table 4. Frequencies of Suicidality among Adolescents from the 2015 South Dakota and 2015 National Youth Risk Behavior Survey

	South Dakota	Nation
Considered Suicide	217 (16.8%)	2,808 (18.2%)
Made Suicide Plan*	163 (12.6%)	2,331 (15.4%)
Attempted Suicide	99 (8.5%)	1,203 (9.5%)
Attempt Injury	38 (3.3%)	399 (3.2%)

*Significant difference between state and national proportion, $p < .05$

BULLYING VICTIMIZATION AS A PREDICTOR OF SUICIDALITY

Apart from delivering descriptive data on bullying victimization and suicidality within South Dakota, the substantive hypothesis tested in this study was that bullying victimization is a significant predictor of suicidality among adolescents in the state. Four different chi-square tests of independence were employed to test for significant association between forms of bullying victimization (not bullied, bullied at school, cyberbullied, and bullied at school and cyberbullied) and each measure of suicidality (considered suicide, planned suicide, attempted suicide, and injured by attempted suicide). Table 5 summarizes the descriptive data from these chi-square tests and indicates whether associations were significant. Two findings are highlighted here: 1) bullying victimization appears to have a significant positive association with suicidality and 2) suicidality appears to vary by form of victimization.

As indicated by Table 5, bullying victimization was found to be a significant predictor of suicidality among adolescents in South Dakota. Specifically, chi-square tests of independence found that bullying victimization was a significant predictor of considering, planning, and attempting suicide at the $p<.01$ level. Bullying victimization was not a significant predictor of injury from a suicide attempt, which only included respondents who had attempted suicide. This could be because there is no association, a result of the stochastic nature of injury from attempts, or perhaps because over 20% of cells in this chi-square fell below an observed frequency of 5 – a violation of chi-square assumption that decreases its predictive power. Measures of association were also calculated for each significant relationship using Cramér's V. Chi-square tests between bullying victimization and considering suicide, planning suicide, and attempting suicide yielded Cramér's V values of .315, .314, and .313 respectively. These values indicate moderate associations between bullying victimization and these three expressions of suicidality. Examining variation in suicidality across forms of bullying victimizations reveals further insights.

Combining the two measures of bullying victimization from the 2015 YRBS provided the ability to examine variations in suicidality across different victimization experiences. Table 5 displays that suicidality varied dependent upon the forms of bullying victimization experienced by respondents. While most victims reported no suicidality, those respondents who reported that they were "not bullied" expressed the lowest prevalence of suicidality across all types of ideation. Conversely, respondents who experienced both forms of victimization (bullying at school and cyberbullying) had the highest levels of suicidality. When examining those who "considered suicide," for example, about 10.2% of adolescents who were "not bullied" reported considering suicide. The percentage of non-victims who considered suicide was thus less than half of the 22.6% of respondents who were bullied at school and the 28.6% of respondents victimized solely via cyberbullying. Experiencing both forms of victimization seems to present the highest risk for suicidality with 46.4% of respondents who were bullied at school and cyberbullied reporting that they had strongly considered suicide in the last 12 months. With the exception of those injured by suicide attempts, the prevalence of considering, planning, and attempting suicide was highest for respondents experiencing both forms of bullying victimization. Some variations in prevalence of suicidality exists between adolescents who were only bullied at school versus those who were experienced only cyberbullying, but the difference in suicidality was largest and most consistent between those who experienced one form of bullying (bullied at school or

Table 5. Crosstabulations of Bullying Victimization by Suicidality, 2015 South Dakota Youth Risk Behavior Survey Data

		Bullying Victimization			
Suicidality		Not Bullied	Bullied at School	Cyberbullied	Bullied at School & Cyberbullied
Considered Suicide*	Yes	94 (10.2%)	33 (22.6%)	24 (28.6%)	64 (46.4%)
	No	825 (89.8%)	113 (77.4%)	60 (71.4%)	74 (53.6%)
	Total	919 (100.0%)	146 (100.0%)	84 (100.0%)	138 (100.0%)
Planned Suicide*	Yes	62 (6.8%)	31 (21.2%)	15 (17.6%)	54 (38.6%)
	No	852 (93.2%)	115 (78.8%)	70 (82.4%)	86 (61.4%)
	Total	914 (100.0%)	146 (100.0%)	85 (100.0%)	140 (100.0%)
Attempted Suicide*	Yes	43 (5.3%)	9 (7.1%)	7 (8.6%)	36 (26.7%)
	No	775 (94.7%)	117 (92.9%)	74 (91.4%)	99 (73.3%)
	Total	818 (100.0%)	126 (100.0%)	81 (100.0%)	135 (100.0%)
Injured by Attempt+	Yes	13 (31.0%)	3 (33.3%)	4 (57.1%)	17 (47.2%)
	No	29 (69.0%)	6 (66.7%)	3 (42.9%)	19 (52.8%)
	Total	42 (100.0%)	9 (100.0%)	7 (100.0%)	36 (100.0%)

*Indicates association is significant at the $p<.01$ level

+Injured by attempt included only those who reported attempting suicide.

cyberbullying) versus both. Suicide attempts were over three times as likely among victims of both bullying forms (26.7%) versus those experiencing one form (7.1% for bullied at school and 8.6% for cyberbullied). Though we cannot pinpoint the exact cause of the difference given the limitations of the data, these findings indicate that while either type of bullying victimization appears to increase risk of suicidality , being bullied at school and cyberbullied appears to substantially increase this risk.

DISCUSSION

In addition to providing descriptive data, the findings produced by this study yielded two important observations about adolescents in South Dakota: 1) overall bullying victimization was slightly higher in South Dakota relative to the nation in 2015, and 2) bullying victimization is significantly associated with suicidality, but adolescents who experience traditional bullying and cyberbullying victimization appear to demonstrate the highest risk of suicidality.

Relative to the nation, South Dakota adolescents demonstrated significantly higher bullying victimization and little difference in suicidality. Though the overall proportion of bullying victims was significantly higher in South Dakota, this difference was only 4.4%. Since data were cross-sectional, it may be useful for future research to repeat these tests for preceding and subsequent years to understand whether this is a consistent pattern or perhaps a spurious single year fluctuation. If a significant trend is established, researchers may then wish to investigate variables that contribute to this difference.

Similar to past findings, data analysis from the 2015 South Dakota YRBS demonstrates bullying victimization as a significant predictor of suicidal ideation among adolescents in the state. Since this finding is congruent with the panoply of earlier bullying and suicidality research, we were not surprised by this observation. Given findings of previous studies, we also expected to observe differences in rates of suicidality between adolescents victimized by one form (traditional bullying or cyberbullying) versus both forms of bullying (Schneider, O'Donnell, and Coulter 2012). We did not expect such drastic differences in suicidality between one-form versus two-form victimizations. In some cases, groups experiencing both forms of victimization demonstrated two and three times the prevalence of suicidality versus those experiencing one form. This study is limited in explaining the nature of these differences. Are those experiencing both forms of bullying simply victimized more frequently? Do these forms of victimization work together in some way to magnify the psychological distress of either form? As technology evolves and adolescent social lives increasingly are integrated into the online world, stakeholders (e.g., education professionals, mental health professionals, researchers) must prepare to respond to new manifestations of bullying victimization. Further study should focus on better understanding the different forms cyberbullying may take and how cyberbullying might be employed simultaneously with traditional bullying to victimize youth.

CONCLUSION

Advocates for addressing the problem of bullying victimization and suicidality among adolescents propose the use of a public health approach (Hertz, Donato, and Wright 2013). The first step in a public health approach for addressing problems is to define the problem, including the "magnitude, scope, characteristics, and consequences," via collecting and analyzing data (WHO 2017). Data on bullying victimization, suicidality, and their association include a patchwork of studies across various states and the national level, which ultimately exclude an analysis specifically of South Dakota. Though not without its limitations, this study is a contribution toward addressing this shortcoming.

REFERENCES

Barchia, Kristin and Kay Bussey 2010. "The psychological impact of peer victimization: Exploring social-cognitive mediators of depression." *Journal of Adolescence* 33:615-623. Retrieved October 1, 2017 (https://psy.mq.edu.au/CEH/pdfs/Bussey%20YJADO%202010.pdf)

Centers for Disease Control and Prevention (CDC). 2014. "The Relationship between Bullying and Suicide: What We Know and What it Means for Schools." Retrieved August 12, 2017 (https://www.cdc.gov/violenceprevention/pdf/bullying-suicide-translation-final-a.pdf).

Centers for Disease Control and Prevention (CDC). 2015. Youth Risk Behavior Surveillance System (YRBSS) High School Results. Retrieved August 12, 2017 (https://www.cdc.gov/healthyyouth/data/yrbs/results.htm).

Centers for Disease Control and Prevention (CDC). 2017. "QuickStats: Suicide Rates for Teens Aged 15-19 Years, by Sex – United States, 1975-2015." *Morbidity and Morality Weekly Report (MMWR)* 66(30):816. Retrieved September 1, 2017 (https://www.cdc.gov/mmwr/volumes/66/wr/mm6630a6.htm)

Durkheim, Emile. 1987/1953. *Suicide.* New York: Free Press.

Espelage, Dorothy L., and Melissa K. Holt. 2013. "Suicidal Ideation and School Bullying Experiences After Controlling for Depression and Delinquency. Journal of Adolescent Health." 53:S27-S31. (http://www.ncdsv.org/images/JAH_Suicidal-ideation-and-school-bullying_7-2013.pdf)

Gifford, Kelly. 2017. "Utah School Districts Block Sexual-Orienation Question on School Survey." *The Salt Lake City Tribune,* April 6th. Retrieved August 12, 2017 (http://archive.sltrib.com/article.php?id=5135276&itype=CMSID)

Görzig, Anke and Lara A. Frumkin. 2013. "Cyberbullying experiences on-the-go: When Social media can become distressing." *Cyberpsychology: Journal of Psychosocial Research in Cyberspace* 7(1): article 4. Retrieved September 8, 2017 (https://cyberpsychology.eu/article/view/4283/3328)

Hay, Carter and Ryan Meldrum. 2010. "Bullying Victimization and Adolescent Self-Harm: Testing Hypotheses from General Strain Theory." *Journal of Youth and Adolescence* 39(5):446-459. Retrieved October 1, 2017 (https://link.springer.com/article/10.1007/s10964-009-9502-0)

Henry, Kimberly L., Peter J. Lovegrove, Michael F. Steger, Peter Y. Chen, Konstantin P. Cigularov, and Rocco G. Tomozic. 2014. "The Potential Role of Meaning in Life in the Relationship Between Bullying Victimization and Suicidal Ideation." *Journal of Youth and Adolescence* 43(2):221-232. Retrieved October 2017 (https://link.springer.com/article/10.1007/s10964-013-9960-2)

Hertz, Marci Feldman, Ingrid Donato, and James Wright. 2013. "Bullying and Suicide: A Public Health Approach." *Journal of Adolescent Mental Health* 53(1):S1-S3. Retrieved August 12, 2017 (http://www.jahonline.org/article/S1054-139X(13)00270-X/fulltext#sec3)

Hinduja, Sameer and Justin W. Patchin. 2010. "Bullying, Cyberbullying, and Suicide." *Archives of Suicide Research* 14:206-221. Retrieved September 10, 2017 (https://pdfs.semanticscholar.org/7a31/16377b5654dc1f8362dee85b7845f07b5850.pdf)

Holt, Melissa K., Alana M. Vivolo-Kantor, Joshua R. Polanin, Kristin M. Holland, Sarah DeGue, Jennifer L. Matjasko, Misty Wolfe, and Gerald Reid. 2015. "Bullying and Suicidal Ideation and Behaviors: A Meta-Analysis." *Pediatrics* 135(2): e496 – e509. Retrieved August 12, 2017 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4702491/)

Holt, Mellisa K., and Dorothy L. Espelage. 2007. "Perceived Social Support among Bullies, Victims, and Bully-Victims." *Journal of Youth Adolescence* 36:984-994. Retrieved August 12, 2017 (https://link.springer.com/article/10.1007%2Fs10964-006-9153-3)

Kightlinger, Lon, Nato Tarkhasvili, Ashley Miller, Michelle Hoffman, Colleen Winter, Mark Gildemaster, Barb Buhler, Bonny Specker, and Wei Bai. 2017. "Suicide Surveillance, South Dakota." *South Dakota Department of Health.* Retrieved on September 8, 2017 (http://doh.sd.gov/documents/statistics/SuicideSurveillanceJan2017.pdf)

Ladd, Gary W., Idean Ettekal, and Becky Kochenderfer-Ladd. 2017. "Peer Victimization Trajectories From Kindergarten Through High School: Differential Pathways for Children's School Engagement and Achievement?" *Journal of Educational Psychology* 109(6):826-841. Retrieved September 2, 2017 (http://www.apa.org/pubs/journals/releases/edu-edu0000177.pdf)

Lessne, Deborah and Christina Yanez. 2016. "Student Reports of Bullying: Results from the 2015 School Crime Supplement to the National Crime Victimization Survey." *National Center for Education Statistics: Web Tables*. Retrieved September 18, 2017 (https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2017015)

Luk, Jeremy W., Jing Wang, and Bruce G. Simons-Morton. 2010. "Bullying victimization and substance use among U.S. adolescents: mediation by depression." *Prevention Science*. 11(4): 355-359. Retrieved September 2017. (https://www.ncbi.nlm.nih.gov/pubmed/20422288)

National Center for Education Statistics (NCES). 2017. "Fast Facts: Homeschooling." Retrieved September 2017. (https://nces.ed.gov/fastfacts/display.asp?id=91)

Pew Research Center (PEW). 2017. "Religious Landscape Study." *Religion and Public Life*. (http://www.pewforum.org/religious-landscape-study/)

Posner, Kelly, Gregory K. Brown, Barbara Stanley, David A. Brent, Kseniya V. Yershova, Maria A. Oquendo, Glenn W. Currier, Glenn A. Melvin, Laurence Greenhill, Sa Shen, and J. John Mann. 2011. "The Columbia–Suicide Severity Rating Scale: Initial Validity and Internal Consistency Findings From Three Multisite Studies With Adolescents and Adults." *American Journal of Psychiatry* 168(12):1266-1277. Retrieved September 2017 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3893686/)

Rothon, Catherine, Jenny Head, Emily Klineberg, and Stephen Stansfeld. 2011. "Can social support protect bullied adolescents from adverse outcomes? A prospective study on the effects of bullying on the educational achievement and mental health of adolescents at secondary schools in East London." *Journal of Adolescence* 34(3):579-588. Retrieved August 12, 2017 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3107432/)

Silenzo, Vincent, Juan B. Pena, Paul R. Duberstein, Julie Cerel, and Kerry L. Knox. 2007. "Sexual Orientation and Risk Factors for Suicidal Ideation and Suicide Attempts Among Adolescents and Young Adults." *American Journal of Public Health* 97(11): 2017-2019. Retrieved September 18, 2017 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2040383/)

Schneider, SK, L. O'Donnell, A. Stueve, and RW Coulter. 2012. "Cyberbullying, school bullying, and psychological distress: a regional census of high school students." *American Journal of Public Health* 102(1):171-177. Retrieved September 8, 2017 (https://www.ncbi.nlm.nih.gov/pubmed/22095343)

Spriggs, Aubrey L., Ronald J. Ianotti, Tonja R. Nansel, and Denise L. Haynie. 2007. "Adolescent Bullying Involvement and Perceived Family, Peer and School Relations: Commonalities and Differences Across Race/Ethnicity." *Journal of Adolescent Health* 41(2):283-293. Retrieved August 2017 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1989108/)

United States Census Bureau (US Census). 2010. "2010 Census Urban and Rural Classification and Urban Criteria." Retrieved September 18, 2017 (https://www.census.gov/geo/reference/ua/urban-rural-2010.html)

United States Census Bureau (US Census). 2017. "Quick Facts: South Dakota." Retrieved September 18, 2017 (https://www.census.gov/quickfacts/fact/table/SD/PST045216)

United States Department of Health and Human Services (US HHS). 2017. "What is Bullying?" Retrieved September 18, 2017 (https://www.stopbullying.gov/what-is-bullying/index.html)

VanOrman, Alicia and Beth Jarosz. 2016. "Suicide Replaces Homicide as Second-Leading Cause of Death Among U.S. Teenagers." *Population Reference Bureau*. Retrieved September 18, 2017

(http://www.prb.org/Publications/Articles/2016/suicide-replaces-homicide-second-leading-cause-death-among-us-teens.aspx)

Wang, Jing, Ronald J. Ianotti, and Ronja R. Nansel. 2009. "School Bullying Among US Adolescents: Physical, Verbal, Relational and Cyber." *Journal of Adolescent Health* 45(4):368-375. Retrieved August 2017 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2751860/)

World Health Organization (WHO) Violence Prevention Alliance. 2017. "The Public Health Approach." Retrieved August 12, 2017 (http://www.who.int/violenceprevention/approach/public_health/en/)

Zhang, Xiaoyan, Chaelin Karen Ra, Donglan Zhang, Yunting Zhang, and Kara E. MacLeaod. 2016. "The Impact of School Social Support and Bullying Victimization on Psychological Distress among California Adolescents." *California Journal of Health Promotion* 14(2): 56-67. Retrieved August 12, 2017 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5045968/)