

Suicidal Thoughts and Behaviors Among LGBTQ Youth: Meta-Analyses and a Systematic Review

Tyler Hatchel, Joshua R. Polanin & Dorothy L. Espelage

To cite this article: Tyler Hatchel, Joshua R. Polanin & Dorothy L. Espelage (2021) Suicidal Thoughts and Behaviors Among LGBTQ Youth: Meta-Analyses and a Systematic Review, Archives of Suicide Research, 25:1, 1-37, DOI: [10.1080/13811118.2019.1663329](https://doi.org/10.1080/13811118.2019.1663329)

To link to this article: <https://doi.org/10.1080/13811118.2019.1663329>



Published online: 10 Oct 2019.



Submit your article to this journal [↗](#)



Article views: 5848



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 76 View citing articles [↗](#)



Suicidal Thoughts and Behaviors Among LGBTQ Youth: Meta-Analyses and a Systematic Review

Tyler Hatchel, Joshua R. Polanin, and Dorothy L. Espelage

Suicide continues to be the second-leading cause of death for all youths aged 15–24. Lesbian, gay, bisexual, transgender, and questioning (LGBTQ) youth are at a significantly higher risk for suicidal thoughts or behaviors (STB). Establishing and understanding correlates of STB among LGBTQ youth is one important step toward enhancing prevention, intervention, and research efforts. To synthesize current knowledge on suicide among LGBTQ youth, the present meta-analyses offer results from 44 studies over the past 20 years. Two-hundred and thirty-four correlation coefficient effect sizes were calculated and categorized. To be included, the study had to quantitatively examine correlates of STB among LGBTQ youth. A number of social-science databases were used to examine the existing published research. Results illustrated the variability among correlates of STB as well as substantial limitations in the extant literature. There was a heterogeneity of effect sizes, a lack of novel correlates, a focus on risk, a dearth of theoretically driven designs, moderate publication bias, a paucity of developmentally driven analyses, and a dearth of research with transgender youth.

Keywords meta-analysis, suicidal, suicidality, sexual minority, risk factors, protective factors

According to the Centers for Disease Control and Prevention, National Center for Injury Prevention and Control (2013), suicide is the second leading cause of death among youths aged 15–24 years. Lesbian, gay, bisexual, transgender, and questioning youth (LGBTQ) are more likely to attempt suicide than their non-LGBTQ peers. Empirical research with varying methodologies and geographical locations all demonstrate this unfortunate

relationship (D’Augelli & Hershberger, 1993; Garofalo, Wolf, Kessel, Palfrey, & Durant, 1998; Lea, de Wit, & Reynolds, 2014; Lewis, 2009; Liu & Mustanski, 2012; Remafedi, Farrow, & Deisher, 1991; Shields, Whitaker, Glassman, Franks, & Howard, 2012; van Bergen, Bos, van Lisdonk, Keuzenkamp, & Sandfort, 2013; Ybarra, Mitchell, Kosciw, & Korchmaros, 2015). Marshal and colleagues (2011) completed a meta-analysis

of 20 studies on sexual minority youth and found that compared to their heterosexual peers, LGBTQ youth were three times more likely to present with suicidal thoughts and behaviors (STB). Research has also demonstrated that transgender youth are at higher risk for STB (Grossman, Park, & Russell, 2016; Liu & Mustanski, 2012; Veale, Watson, Peter, & Saewyc, 2017). However, there are no systematic reviews or meta-analyses that examine how factors vary in their association with STB among LGBTQ youth.

Most broadly, suicide is thought of as either the act or intention to cause one's own death. Suicide as a psychological construct, however, can be conceptualized, measured, and analyzed in a myriad of fashions. For example, there is evidence that the cognitive dimensions (i.e., suicidal ideation) and behavioral dimensions (i.e., suicide attempts) are distinct (Klonsky & May, 2014; Taliaferro & Muehlenkamp, 2014).

Joiner's (2005) interpersonal theory of suicide (IPTS) is a useful theoretical framework that helps differentiate between ideation and behavior. This theory posits that factors like perceived burdensomeness and thwarted belongingness contribute to thoughts of suicide. Thwarted belongingness is thought of as a lack of social interaction with others, a deficit of caring relationships, and a lack of social support (Joiner, 2005). Perceived burdensomeness emerges when one believes that they are so flawed that they are an encumbrance on important people in their life (Joiner, 2005). Alternatively, the capacity to act on suicidal thoughts is frequently attributable to divergent factors like exposure to painful events, access to lethal means, and fearlessness (Joiner, 2005; Van Orden et al., 2010). Klonsky and May (2014) suggest that exploring whether risk factors predict

ideation, behavior, or both is vital to advancing our understanding of suicide.

O'Connor and Kirtley (2018) propose one of the more comprehensive models of suicide. This integrated motivational-volitional model of suicidal behavior illustrates three relevant dimensions including the biopsychosocial context (i.e., pre-motivational phase), the emergence and maintenance of ideation (i.e., motivational phase), and the transition to suicidal behaviors (i.e., volitional phase). The pre-motivational phase is characterized by vulnerability factors and triggering negative events. Both the motivational and volitional phases are delineated into two sections: a higher-order level and a lower-order level. Key higher-order factors for both phases include feelings of defeat and humiliation, feelings of entrapment, and suicidal ideation. The authors suggest that lower-order factors like threat-to-self moderators (e.g., coping, memory biases, rumination processes), motivational moderators (e.g., belongingness, burdensomeness, resilience, social support), and volitional moderators (e.g., access to means, planning, impulsivity, fearlessness) influence higher-order factors and may, therefore, illuminate ideation to behavior pathways.

The aforementioned complexities, among others, confound our understanding of correlates, predictors, moderators, and psychological mechanisms of suicide (Cash & Bridge, 2009). Franklin et al. (2017) completed a meta-analysis on 365 studies that examined risk factors predicting STB among a general adult population. Their synthesis suggested that risk factors' ability to predict STB have not significantly improved over 50 years of research. Limitations of the extant literature on STB included rarely exploring multiple predictors, results demonstrating

significant heterogeneity of effect sizes, and having a narrow scope of methodology (Franklin et al., 2017). These systematic approaches to synthesis offer useful direction for theory, future research, and the prevention of STB. For example, Franklin and colleagues (2017) demonstrated that there is a dearth of STB research concerning specific populations and developmental phases. A synthesis of the research on predictors of LGBTQ youth STB would be a novel contribution which augments the extant literature.

The goal of this article is to build on our understanding of STB among LGBTQ youth by conducting a systematic review and meta-analyses. Specifically, the synthesis will illustrate strengths and weaknesses in the existing literature, establish how factors vary in their associations with STB, and offer useful insight for the prevention and intervention of STB among this vulnerable group. These aforementioned contributions are an important part of advancing the field in an effort to enhance the well-being of LGBTQ youth.

MINORITY STRESS, STIGMA, AND UNIQUE DEVELOPMENTAL CHALLENGES

The seminal minority stress theory (MST) posits that health disparities between marginalized groups, like LGBTQ youth, and their peers can largely be explained by social factors such as stigma, discrimination, and victimization (Meyer, 2003). Facing these stigmatizing stressors, in combination with typical daily stressors, leads to diminished psychological well-being. These social stressors influence well-being through psychological mechanisms—some that are unique to LGBTQ people, and others that are not unique to this

population. Meyer's (2003) conceptualization of stress among LGBTQ people as encompassing multiple spaces, both distal (i.e., external) and proximal (i.e., internal) is a helpful framework for differentiating psychological processes at play. Exposure to external stigma, for example, may lead to the development and maintenance of issues like internalized homophobia (i.e., negative social attitudes toward self). There are numerous other variables, like identity, personality traits, and community, which are associated with the psychological well-being of LGBTQ people (Meyer, 2003).

There appear to be two main overarching methodological approaches to understanding the mental health of LGBTQ people. They are exploring within-group processes and between-group differences (i.e., minority and nonminority groups). Understanding psychological processes specific to LGBTQ people or between LGBTQ people would be a within-group approach, for example, researching LGBTQ identity development, stigma-related stressors, intersectionality, and the coming-out process. Meyer (2003) suggested that focusing on within-group differences could clarify processes pertinent to the population of interest. As such, the present review will synthesize within-group studies by focusing on variability of specific correlates and their impact on STB.

Hatzenbuehler (2009) also developed a valuable theoretical framework for understanding the psychological well-being of groups like LGBTQ youth. He demonstrated that there were two distinct literatures—one that focused on group-specific processes (i.e., minority stress) (Meyer, 2003), and the other that explored general psychological processes/mechanisms that explain the development of psychopathology among all people (Diamond, 2003; Savin-Williams, 2001). He presented a

psychological mediation framework which accounts for both group-specific processes and general psychological processes. This framework was centered on three hypotheses—that sexual minorities are exposed to increased distress due to factors like stigma, that this stigma-related stress contributes to the elevation of various processes (i.e., coping/emotional, social/interpersonal, and cognitive) that translate to risk of psychopathology, and that the aforementioned processes are mediating the relation between stigma-related stress and the associated poor outcomes. In line with Hatzenbuehler's work (2009), the present meta-analysis will also examine general psychological processes and how they relate to STB among LGBTQ youth.

The aforementioned theoretical frameworks are essential to our understanding of LGBTQ youth well-being, but there are other complimentary paradigms. It is also important to consider ecological factors. Eco-social theories have suggested that social conditions influence risk for poor outcomes like STB and therefore a focus on only individual psychological processes may be lacking (Krieger, 2001). In an effort to offer the most comprehensive review, this synthesis will also examine factors like family, school climate, and community factors, and how they impact STB among LGBTQ youth.

Minority stress is especially concerning for LGBTQ youth because adolescence and emerging adulthood are critical transitional phases when well-being may be tenuous (Arnett, 2000; Steinberg, 2008). LGBTQ youth are navigating the development of intimacy, identity, and sexuality all while struggling with unique factors like disclosing their identities (i.e., coming out), fear of victimization, deficient sexual health education, and lacking a sense of community or belonging. Yet,

findings have illustrated that although LGBTQ status is a risk factor for STB, not all LGBTQ youth present with mental health issues, and the discrepancies are not well understood (Mustanski, Newcomb, & Garofalo, 2011; Robinson & Espelage, 2011; Savin-Williams, & Ream, 2003).

SUICIDE AMONG LGBTQ YOUTH

The literature on LGBTQ youth STB has been dichotomized into either positive or negative correlates of suicide for the conceptual and analytic organization of the present synthesis. This structure is a simplification and does not necessarily align with the best classification of factors related to STB. Ideally, we could have explored risk and protective factors in the traditional/longitudinal sense and classified factors based on the nature of their effect (i.e., mechanisms or moderators), but the extant literature on LGBTQ STB is mostly cross-sectional. As such, the literature is summarized in the exploration of positive (risk) and negative (protective) correlations with STB.

POSITIVE CORRELATES OF SUICIDE

The existing literature on positive correlates associated with LGBTQ youth STB offers a strong foundation and is still evolving. Factors commonly reported to relate to STB are various forms of victimization, stigma, other mental health issues, and risky behaviors, as well as ecological, interpersonal, and demographic factors (de Graaf, Sandfort, & ten Have, 2006; Hatzenbuehler, Birkett, Van Wagenen, & Meyer, 2014; Hershberger, Pilkington, & D'Augelli, 1997; Lea et al., 2014; Lytle, De Luca, & Blosnich, 2014; Mathy,

Cochran, Olsen, & Mays, 2011; Mustanski, Andrews, Herrick, Stall, & Schnarrs, 2014; Mustanski, Garofalo, & Emerson, 2010; Paul et al., 2002; Remafedi et al., 1991; Robinson & Espelage, 2011; Russell, Ryan, Toomey, Diaz, & Sanchez, 2011; Russell & Toomey, 2012; Smith, Armelie, Boarts, Brazil, & Delahanty, 2016). Haas and colleagues (2010) completed a literature review on suicide risks associated with LGBT populations. This article offered helpful underpinnings for understanding risk but did not utilize quantitative data nor did it focus on younger populations. The present study will be a unique contribution to the extant literature because it utilizes quantitative and systematic methods to examine how factors unique to LGBTQ youth relate to STB.

Peer Victimization

Peer victimization, which is broadly defined as aggression by similarly aged peers, is one of the most studied correlates of STB among LGBTQ youth. Toomey and Russell (2016) completed a meta-analysis on 18 studies which examined the relation between sexual orientation and peer victimization. They found that sexual minorities were moderately more likely to report peer victimization than their peers. Eisenberg, McMorris, Gower, and Chatterjee (2016) completed a cross-sectional study on LGBQ youth from 505 schools and found that peer victimization predicted STB. Several other cross-sectional studies, mostly conducted in the United States, have demonstrated that peer victimization is positively correlated with STB among LGBTQ youth (Blosnich & Bossarte, 2012; Duong & Bradshaw, 2014; Goodenow, Szalacha, & Westheimer, 2006; Hatchel, Merrin, &

Espelage, 2019; Hershberger & D'Augelli, 1995; Mustanski, Andrews, Herrick, Stall, & Schnarrs, 2014; Poteat, Sinclair, DiGiovanni, Koenig, & Russell, 2013; Reisner, Biello, Perry, Gamarel, & Mimiaga, 2014; Robinson & Espelage, 2011; Shields et al., 2012; Whitaker, Shapiro, & Shields, 2016; Ybarra et al., 2015). Many of these studies also reported significant variability attributable to demographic and moderating factors. There is a clear paucity of longitudinal studies examining the aforementioned relations over time. Yet, studies have demonstrated that peer victimization can take on different forms which are theoretically more pertinent to LGBTQ youth.

Bias-based victimization is a form of peer victimization rooted in sexism, homophobia, and transphobia. Examples include homophobic bullying and name calling. Given the stigmatizing nature of this bias-based victimization, it has garnered significant attention because it aligns well with MST (Meyer, 2003). MST suggests that this sort of victimization may be more deleterious to LGBTQ youth well-being than less stigmatizing forms of victimization. Similar to the general peer victimization literature, there are several cross-sectional studies demonstrating the moderate direct effect of bias-based peer victimization on STB (Baams, Grossman, & Russell, 2015; Hightow-Weidman et al., 2011; Lea et al., 2014; van Bergen et al., 2013; Whitaker et al., 2016). Liu and Mustanski (2012) completed a longitudinal study with 246 LGBTQ youth and found that bias-based victimization was a risk factor for future suicidal ideation. It is unclear if the extant literature on various forms of peer victimization are heterogeneous with regards to effect sizes associated with STB. The present synthesis will offer insight into how they may vary.

Discrimination and Stigma

Discrimination is conceptualized as the unjust or prejudicial treatment of people based on group membership and stigma speaks to the general disapproval of people based on group membership. These constructs align well with MST and are broader than peer victimization and bias-based aggression. One school-based, cross-sectional study on 1,032 LGBTQ adolescents found that perceived discrimination predicted suicidal ideation (Almeida, Johnson, Corliss, Molnar, & Azrael, 2009). Another cross-sectional study of LGBTQ young adults reported that perceived stigma predicted STB (Lea, de Wit, & Reynolds, 2014). Other cross-sectional studies found similar results (Blosnich & Bossarte, 2012; Thoma & Huebner, 2013). In sum, in line with MST, discrimination and stigma are associated with STB among LGBTQ youth.

Sexual Victimization and Intimate Partner Violence

There are other forms of victimization, such as sexual victimization and intimate partner violence, that have been explored in the LGBTQ youth STB literature. Examples of sexual victimization include sexual assault, sexual abuse, and sexual harassment victimization. A cross-sectional study on 137 gay and bisexual male youth found that participants who reported a history of sexual abuse were more likely to present with suicidal behaviors (Remafedi et al., 1991). Intimate partner violence is thought of as aggression and victimization which occurs within the context of a romantic relationship. Mustanski and colleagues (2013) completed a study with sexual-minority male youth and found that both sexual victimization and intimate

partner violence predicted suicidal behavior. Blosnich and Bossarte (2012) also found that both sexual assault and intimate partner violence were associated with STB.

Mental Health

Depression is one of the best predictors of suicidal ideation among adults and adolescents alike (Brent, Baugher, Bridge, Chen, & Chiappetta, 1999; Cash & Bridge, 2009; Franklin et al., 2017). The relationship is also found for STB among a wide array of studies on LGBTQ youth (Baams et al., 2015; D'Augelli, 2002; D'Augelli & Hershberger, 1993; Denny et al., 2016; Hershberger et al., 1997; Lytle et al., 2014; Mustanski et al., 2014; Mustanski & Liu, 2012; Silenzio, Pena, Duberstein, Cerel, & Knox, 2007; Smith et al., 2016; Thoma & Huebner, 2013; van Heeringen & Vincke, 2000; Whitaker et al., 2016; Ybarra et al., 2015). This is particularly precarious because LGBTQ youth are more likely to present with depressive symptoms than their non-LGBTQ peers (Kosciw, Greytak, Giga, Villenas, & Danischewski, 2016).

STB are also associated with other mental health indicators among LGBTQ youth. For example, studies have found the following issues predicted STB: anxiety, obsessive compulsiveness, paranoid ideation, psychosis, somatization, general distress, impulsivity, hopelessness, and oppositional defiant and conduct disorder symptoms (D'Augelli, 2002; D'Augelli & Hershberger, 1993; Hershberger et al., 1997; Liu & Mustanski, 2012; Mustanski & Liu, 2013; Poteat et al., 2013; Remafedi et al., 1991). These studies illustrate the sprawling and somewhat inscrutable nature of correlates between STB and other mental health issues among LGBTQ youth.

Internalized phobia—a key aspect of MST—has been examined in only a few studies (Meyer, 2003). Gibbs and Goldbach (2015) completed an analysis of a public dataset with 2,945 LGBTQ young adults. They demonstrated that internalized homophobia mediated the relation between various predictors and STB. A cross-sectional study on LGBTQ youth demonstrated that internalized homophobia significantly predicted suicidal thoughts (Lea et al., 2014).

Ecological and Interpersonal Factors

Ecological and systems frameworks, or appreciating the context in which youth are developing, is another important dimension to understanding STB (Bronfenbrenner, 1994). One cross-sectional study demonstrated that conflict within and among family members predicted suicidal ideation among gay and lesbian youth (Blosnich & Bossarte, 2012). Other studies have shown that parental rejection of LGBTQ youth's identities and religious upbringing predicted STB (Gibbs & Goldbach, 2015; Ryan, Huebner, Diaz, & Sanchez, 2009; van Bergen et al., 2013). Parental rejection can be so severe that LGBTQ youth are no longer allowed to live in their homes. A cross-sectional dataset demonstrated that being homeless was associated with suicidal ideation (Hatchel et al., 2019). Concerning school-level factors, a few studies have established that unsupportive school climates were associated with STB (Hatzenbuehler et al., 2014; Hatzenbuehler & Keyes, 2013; Whitaker et al., 2016). There is a paucity of research on community-level factors. Poon and Saewyc (2009) completed a cross-sectional study with 6,905 LGBTQ adolescents and found that living in rural areas predicted STB. Lastly, a cross-

sectional study with 404 LGBTQ youth found that exposure to suicide in one's environment was correlated with suicidal behavior (van Heeringen & Vincke, 2000).

In line with the IPTS (Joiner, 2005), a number of studies have examined interpersonal factors and how they relate to STB. Baams et al. (2015) reported that both perceived burdensomeness and thwarted belongingness predicted suicidal ideation. Coming out, sharing one's identity with others, is a universal part of being an LGBTQ youth. Since being LGBTQ is associated with stigma and discrimination (Meyer, 2003), this process can be distressing. One study found that coming out-related distress was also positively correlated with suicidal ideation (Baams et al., 2015). D'Augelli (2002) found that LGBTQ youth who reported a general interpersonal sensitivity also reported more STB. Next, gender nonconformity, often measured as thoughts and behavior not socially perceived as typical for one's sex assigned at birth, has been found to predict STB among LGBTQ youth (Liu & Mustanski, 2012; Remafedi et al., 1991).

Behavioral Factors

There are a number of behavioral factors like drug use, sexual risk, and self-harm which are positively correlated with STB. Several studies with varying samples, mostly with cross-sectional designs, have demonstrated that drug use predicted STB (D'Augelli & Hershberger, 1993; Hershberger et al., 1997; Mustanski et al., 2014; Poteat et al., 2013; Reisner et al., 2014; Remafedi et al., 1991; Silenzio et al., 2007; Whitaker et al., 2016). Drug use is related to chronic experiences of minority stress (Kosciw et al., 2016), association with deviant peers (Huebner, Thoma, & Neilands, 2015), and

unhealthy coping mechanisms (Goldbach & Gibbs, 2015)—all factors that align well with frameworks like MST (Meyer, 2003). Non-suicidal self-harm behaviors were found to be strongly associated with suicidal behaviors among LGBTQ youth (Reisner et al., 2014; Tsypes, Lane, Paul, & Whitlock, 2016). Perhaps one of the best predictors of suicidal behavior among all people is the history of suicide attempts (Bostwick, Pabbati, Geske, & McKean, 2016). Yet, only one study quantitatively examined the relationship between suicidal attempt history and future suicidal ideation (Liu & Mustanski, 2012). They found that previous attempts were associated with suicidal thoughts. Engaging in sexually risky behaviors is also associated with STB among LGBTQ youth (Hershberger et al., 1997; Mustanski et al., 2014; Poteat et al., 2013).

Demographic Factors

LGBTQ youth are not a uniform group. They vary in their sexual and gender identities as well as other intersecting identities. The broad theoretical and empirical literature on intersectionality and LGBTQ people is largely mixed. Some have found that multiple minority statuses can increase the risk for poor outcomes (Kosciw et al., 2016). Others have suggested that intersectionality can be conducive to resiliency for LGBTQ youth (Singh, 2013). The quantitative literature on intersectionality and STB among LGBTQ is also mixed. Some studies have found that identifying as female via self-report measures was associated with an increased risk of STB (Bostwick et al., 2014; Mustanski et al., 2010; van Heeringen & Vincke, 2000; Whitaker et al., 2016). In contrast, others found that identifying as female was not significantly

predictive of STB (Liu & Mustanski, 2012; Lytle et al., 2014). The literature comparing LGBTQ youth of color to their White peers largely demonstrates that having multiple minority identities is positively correlated with STB (Bostwick et al., 2014; Lytle et al., 2014; Mustanski et al., 2010; Shadick et al., 2015). There is a dearth of within-group studies on LGBTQ youth and STB. For example, most of the existing literature only compared males to females but neglected to measure and/or include transgender youth. This gap may be attributable to the rigid nature of public datasets used by many scholars.

NEGATIVE CORRELATES OF SUICIDE

The discourse on protective factors and STB has grown significantly following Savin-Williams's (2001) call for attention to LGBTQ youth resiliency. Yet, this area is still significantly underdeveloped when compared to the examination of positive correlates. Supportive school climates and a sense of belonging have been found to attenuate STB among LGBTQ youth (Poteat et al., 2013; Reisner et al., 2014). Moreover, LGBTQ youth who report being supported by family and peers also appear to be more resilient to STB (Bouris et al., 2010; Mustanski & Liu, 2013; Needham & Austin, 2010; van Heeringen, Vincke, 2000). Other factors that are negatively correlated with STB include being older (Hershberger et al., 1997; Livingston et al., 2015; Lytle et al., 2014; Mustanski & Liu, 2013), being open with one's LGBTQ identity (Baams et al., 2015; D'Augelli & Hershberger, 1993; Hershberger et al., 1997; Livingston et al., 2015), high self-esteem (D'Augelli & Hershberger, 1993; Hershberger et al., 1997; Hershberger & D'Augelli, 1995;

Ybarra et al., 2015), having an adaptive personality (Livingston et al., 2015), self-compassion (Hatchel et al., 2019), and identifying as bisexual (Mustanski et al., 2010). It is apparent that more work needs to be done in this area, especially when it comes to protective factors that are easily cultivated by clinicians, policymakers, families, and school staff.

IMPLICATIONS FOR UNDERSTANDING CORRELATES OF SUICIDE AMONG LGBTQ YOUTH

Countless clinicians and mental health professionals support youth who may be at risk for STB. This is a difficult task as many available interventions have not been promising when studied and compared to control groups (Brown & Jager-Hyman, 2014; Glenn, Franklin, & Nock, 2015; Ward-Ciesielski & Linehan, 2014). It is not unusual for interventions to be developed based on clinical experiences and other easily translatable methods, as opposed to a large body of empirical data. However, a few meta-analyses and reviews have synthesized the extant literature on interventions targeting suicidal behaviors and self-harm among adolescents. Ougrinm, Tranah, Stahl, Moran, and Asarnow (2015) completed a meta-analysis of 19 randomized clinical trials with non-pharmacological interventions and found that the interventions were modest in reducing self-harm. Hawton et al. (2015) found similar results on self-harm by synthesizing 11 clinical trials. In sum, it appears that interventions may be somewhat, albeit modestly, efficacious at reducing self-harm among adolescents, but there is a dearth of literature demonstrating the efficacy of interventions targeting STB among adolescents.

Having a taxonomy for identifying and treating STB is a useful clinical tool. There are resources that have been developed to estimate risk of STB based on minimal or qualitative data (Beck, Brown, & Steer, 1989; Chronis-Tuscano et al., 2010). Many programs designed to diminish STB offer such lists of risk factors (AAS, 2015; CDC 2015; NIMH, 2015; WHO, 2015). These resources are both helpful and lacking. There is significant variability across resources and they often are not developed to target particular groups like LGBTQ youth, but instead are designed to be generalizable. The cited clinical tools are not precise and are extensive lists of potential risk factors that suggest nearly any person who presents with mental health issues, serious trauma or distress, chronic illness, and/or marginalized identities may be at risk for STB. The heterogeneity of factors, lack of consistency across agencies, and disregard for certain groups makes the tools difficult to translate into practice. There is room for new and innovative approaches to supporting clinicians with tools that are empirically robust and translatable to the diverse clients that they serve. The present study offers a foundation for developing interventions specific to LGBTQ youth by establishing the most pronounced correlates of STB.

THE CURRENT STUDY

The primary aim of the present synthesis was to explore the degree that correlates vary in their relationship with STB among LGBTQ youth. These findings will offer helpful foundations for the development of clinical tools and demonstrate shortcomings as well as strengths of the existing research.

METHODS

Eligibility Criteria

The purpose of this synthesis was to examine the relation between STB and various risk and protective factors for youth who identified as LGBTQ. “Youth” was operationalized as having a mean age between 13–24 years and an upper bound not exceeding 25 years. The larger range was incorporated because much of the available LGBTQ research conceptualized youth in this fashion due to sampling and ethical limitations (Mustanski, 2011). Retrospective studies were included as long as the participants reported on their youth. Similarly, longitudinal studies were incorporated if the first time point occurred during the acceptable age range. Although most of the studies found examined only lesbian, gay, bisexual, and questioning (LGBQ) youth, transgender youth were included in a few reports and therefore remain within the scope of this synthesis. All forms of sexuality—identity, attraction, and behavior—were acceptable measurements. Studies that only reported group disparities between LGBTQ and non-LGBTQ youth were not included unless they offered data specific to LGBTQ youth. Some studies only offered a small proportion of LGBTQ youth and, as such, only data concerning the subsample were included (not the whole sample with largely non-LGBTQ-identified youth). Studies needed to examine the relations quantitatively and offer sufficient statistical information for the calculation of an effect size demonstrating the strength of correlation. Published studies and unpublished data were included (i.e., scholars in the field were contacted electronically and asked for additional quantitative information and/or any unpublished data).

Finally, studies were included if they were published between 1990 and 2017 and written in English.

Studies that measured at least one correlate with STB among LGBTQ youth were included. STB included ideation, plans, and behaviors associated with ending one’s life. Self-injurious behavior was not an acceptable proxy for suicide. Correlates could be measured in innumerable fashions including cross-sectionally, longitudinally, and/or in models that analyzed mediation/moderation effects.

Search Strategy

A number of databases were searched to identify studies, including PsychINFO, EBSCO, and PubMed. Terms were searched within search titles, abstracts, and subject lines. Examples included *gay*, *lesbian*, *bisexual*, *sexual minority* or *transgender* and *youth*, *adolescence*, *teenager*, *emerging adults* and *suicidality*, *suicidal ideation*, *suicidal behavior* or *suicide*. In addition to these approaches, citation lists of articles that met criteria were explored and other cross-checking methods were utilized such as contacting authors for additional/unpublished data (i.e., Google Scholar, scholars in the field).

Screening and Coding

Screening and Coding Procedures.

Citations found through the search procedures were screened by the first author and added to an Excel spreadsheet. The included studies were then retrieved and screened a second time to ensure their eligibility. From the eligible and included studies, research assistants and the authors extracted simple data such as study and sample-level characteristics. The first

author extracted and coded other features in consultation with coauthors and senior colleagues well versed in meta-analyses. Disagreements on coding were resolved via discussion between coders.

Study and sample-level descriptors.

Basic information for all studies was extracted and included in the meta-analysis. Study-level factors included authors, year of publication, title, source, sampling strategy and characteristics, measures of suicide, and methodology. Sample-level factors involved sample size, participant age, and distribution of LGBTQ status.

STB factors. Data concerning STB were extracted and coded. Studies varied in their approach as some measured suicidal ideation, suicidal behavior, and/or both. All available data were extracted and coded (i.e., some studies measured both ideation and behavior, but did not offer correlations with all other measured constructs for both factors).

Positive (risk) and negative (protective) correlates of STB effect sizes. All relationships of interest were coded in an r effect size metric or converted to an r effect size metric. Much of the available data could be conceptualized and incorporated into risk or protective categories. However, studies coded their own measures in a variety of manners such that risk correlates were expressed as a negative value (i.e., $-r$) or protective correlates were expressed as a positive value (i.e., r). For example, some studies measured STB such that higher scores indicated less STB whereas others coded their measures inversely. To offer improved consistency and interpretability, some values were inversely coded so that all “risk” correlates were positive values and “protective” correlates were negative values. Some studies offered effect sizes comparing groups based

on subsamples via demographics such as age, sexuality, and gender, and these were also included. The measurement of sexuality was coded, as was the measurement of gender. At least one product moment correlation coefficient was taken from each study that demonstrated the relation between positive (risk) or negative (protective) correlates and LGBTQ youth STB. If the correlation coefficients were not available, they were calculated based on reported statistical information (Lipsey & Wilson, 2001). If more than one effect size was offered by a study, it was extracted and included in the analysis.

To facilitate synthesis and interpretability, some factors were aggregated if they could be conceptualized as being very similar constructs, whereas others were not aggregated, to offer important insight for research and intervention. Theory and empirical findings were used to develop the broad categorization of correlates. The heuristic utilized reduced some precision offered by the existing research, but it enabled the synthesis of otherwise scattered and inscrutable findings. This process resulted in generating 24 correlates of STB that offered sufficient information for a meta-analysis.

There was no need to modify depression because all of the included studies either measured depressive symptoms or depressive disorders directly. Although measures of other mood disorders and symptoms emerged (i.e., anxiety), they were not included in this category because they are often conceptualized as distinct disorders/symptoms.

Drug and alcohol use were aggregated because the aforementioned literature often combines them in measurement and conceptualizes them in similar fashion, and the relationship with STB tends to be congruent. Any measurement of drug use,

regardless of form, past or present, was classified broadly as drug use.

Three aspects of family dynamics emerged in the studies that met inclusion criteria—family conflict, parental rejection, and parental support. One study measured conflict in the home, which was associated with strain or distress and was conceptualized broadly as family conflict. Other studies measured, more precisely and theoretically anchored, if parents rejected youth due to their LGBTQ identity (i.e., parental rejection). Third, parental support was an aggregation of general parental support and monitoring.

Gender was another common factor analyzed by included studies. However, the data could only be included if they were binary in nature—comparing two groups due to the *r* metric. All of the studies that offered sufficient data demonstrated differences based only on comparing self-reported males and females, as opposed to comparing to self-identified transgender youth. As such, only one category for gender emerged.

General distress was a category comprised of measures that asked youth about their level of distress broadly, that is, not specific to any disorder and/or stigma.

Internalized homophobia was explicitly measured by two studies and is a distinct construct as per MST.

Intimate partner violence was indicated if there was victimization or abuse (i.e., verbal, physical, or sexual) within the context of a romantic relationship.

MST and the extant literature posit that stigma-related stressors are essential to understanding LGBTQ youth mental health and, therefore, bias-based victimization was categorized as distinct from general peer victimization. If a measure indicated that a youth was victimized due to perceived or actual LGBTQ group

membership, then it was classified as LGBTQ victimization. All other forms of general victimization, whether measured as peer victimization or bullying, were classified as peer victimization.

Externalizing behaviors and oppositional-defiant and conduct disorders were aggregated, given their similarity.

Age, similar to gender, was coded and included if data were binary. Although ranges varied, effect sizes were included if they compared across ages such that a coefficient could be generated comparing younger to older LGBTQ youth.

Outness/openness was a category comprised of whether youth had explicitly shared their LGBTQ identity with others as well as their general openness with their identity. For example, some studies asked youth if they had come out to family or peers and other studies asked youth how likely they perceived others to know they were LGBTQ based on factors like gender expression.

Stigma and discrimination emerged as a broader category than the various specified forms of victimization. A number of studies measured whether youth felt stigmatized or discriminated against, generally, as opposed to within a certain setting or by a specific group like family or peers.

Race/ethnicity was another category that was included. Given the constraints of the analyses, data were coded in a binary fashion such that all non-White youth were classified as people of color. This enabled the comparison of White youth to their peers of color.

Location was only examined by one study which compared urban areas to rural areas.

Three different school-level factors were developed. Factors were categorized as school belonging if they specifically measured youth's perceptions of feelings of

connection/belongingness. Supportive school climate was composed of broader measurements such as the inclusion of policies and resources specific to LGBTQ youth. Unsupportive school climates were comprised of factors indicating that their institution did not incorporate inclusive policies and resources.

Self-esteem was not modified as all of the effect sizes measured the construct directly. The same is true for self-harm.

Sexual risk is an aggregate of a variety of measures which can be conceptualized as risky behavior. Examples include reporting several sexual encounters, not using contraception or safe practices, and engaging in sexual behavior while under the influences of drugs or alcohol. Many measures of sexual risk broadly include all of these items, but some of the synthesized effect sizes were composed of only one item.

Sexual victimization was composed of sexual assault, rape, and sexual abuse. Measures did not examine perpetrators and therefore it was unclear if these factors would be theoretically different. Similar to drug use, their association with STB tends to be congruent.

All of the other extracted effect sizes that could not be aggregated fell within the purview of the systemic review since there were not enough data to complete a meta-analysis.

Meta-Analytic Statistical Procedures

For each correlation synthesis, we estimated a random-effects meta-analysis that accounted for the dependent effect sizes using robust variance estimation via the R package *robumeta* (Fisher & Tipton, 2015; Polanin, Hennessy, & Tanner-Smith, 2017). This advanced meta-analytic practice enables the inclusion and synthesis of all estimated effect sizes (Tanner-Smith,

Tipton, & Polanin, 2016). The robust estimation approach models all of the effects sizes, which eliminates the constraint of averaging or using only one effect size per study. If only two effect sizes were available, then an aggregation of the effects (i.e., average of effect sizes) was completed because the package requires at least three effect sizes for estimation.

Effect size heterogeneity was also estimated. I^2 was calculated as an estimate which enumerates the heterogeneity beyond sample differences (Higgins & Thompson, 2003). Values between 50–70% suggest enough heterogeneity to warrant moderation analyses. In an effort to control for erroneous findings while explaining heterogeneity, three moderating variables of interest were chosen a priori and based on available data—the measurement of suicide (i.e., behavior, ideation, or both), gender (i.e., male, female, combined, or transgender), and sexuality (i.e., lesbian or gay, bisexual, combined, or questioning). These factors were chosen since the extant literature on gender and sexuality tends to be mixed and suicide theory suggests that ideation and behavior are distinct.

Publication bias was another part of our analysis. Unfortunately, there is no approach to analyzing bias that can handle the robust nested effect sizes. Therefore, the average effects sizes within each study were calculated such that there is a study-level effect size. Because there is no clearly superior method to exploring publication bias, two methods were employed. The Duval and Tweedie (2000) trim and fill analysis was utilized, which indicates the potential number of missing studies given the asymmetry of a funnel plot. Next, effect sizes that include the potentially missing data are imputed. Possible publication bias is indicated by a large number of missing studies and/or a large disparity

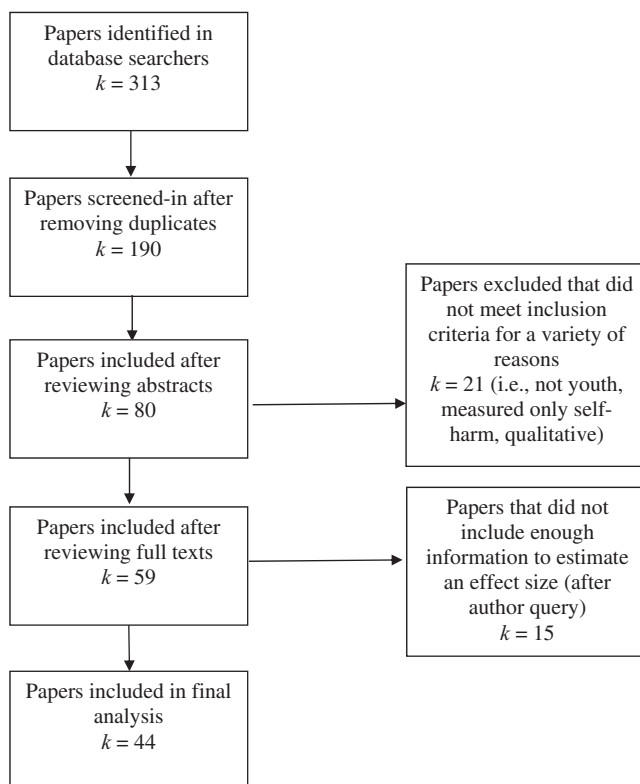


FIGURE 1. PRISMA diagram illustrating the selection of studies for the present meta-analysis.

between estimated and imputed effect sizes. Egger's regression test was also used (Egger, Smith, Schneider, & Minder, 1997). This method regresses standardized effect sizes on study precision. Publication bias is found if the intercept is significant. The R package metafor was utilized to complete these analyses (Viechtbauer, 2010).

RESULTS

Descriptive and Predictor Analysis

The search procedures yielded 313 potentially eligible articles, but screening for eligibility by the first author resulted in 44 unique and included studies (Figure 1).

The aggregation of the samples resulted in the synthesis of 671,943 participants. Table 1 delineates the 44 reports and includes authors, sample characteristics, sampling strategies, methodology, and effect sizes. Publication years ranged from 1991–2017 (Figure 2). Sample sizes varied greatly, from 68 to 122,180 ($M = 14,149$, $Mdn = 2,949$, $SD = 25,969$), and were often only partially composed of LGBTQ youth (only LGBTQ youth $k = 20$). Two-hundred and thirty-four correlation coefficient effect sizes were calculated and categorized. A total of 24 meta-analyses were completed.

Given the number of factors and effect sizes modeled, a general overview is offered. See Table 2 for initial models and

TABLE 1. Summary of Studies Included in the Meta-Analyses

Authors	Sample characteristics	Sampling strategy, methodology	Correlate, STB effect size <i>r</i>
Almeida et al., 2009	<i>N</i> = 1,032; age = 13–19; 10% LGB	District-wide survey to 18 schools in Boston, cross-sectional	Stigma/discrimination, <i>r</i> = .29
Baams et al., 2015	<i>N</i> = 876; age = 15–21; 100% LGB	Community-based survey in three cities across the U.S., cross-sectional	Coming out distress, <i>r</i> = .15 Depression, <i>r</i> = .62 LGB victimization, <i>r</i> = .16 Outness/openness, <i>r</i> = –.11 Perceived burdensomeness, <i>r</i> = .57 Thwarted belongingness, <i>r</i> = .34 Family conflict, <i>r</i> = .21 Intimate partner violence, <i>r</i> = .14 Peer victimization, <i>r</i> = .18 Stigma/discrimination, <i>r</i> = .08 Sexual victimization, <i>r</i> = .12 Ethnicity (POC), <i>r</i> = .16 Gender (female), <i>r</i> = .13
Blosnich & Bossarte, 2012	<i>N</i> = 11,046; age = 18–24; 39% LGB	Purposive sampling from the survey of 157 universities, cross-sectional	Supportive parents, <i>r</i> = –.23 Supportive school staff, <i>r</i> = –.09
Bostwick et al., 2014	<i>N</i> = 72,691; age = 18–24; 9% LGB	Purposive sampling: Wave 2005 and wave 2007 of the Youth Risk Behavior Surveys within 14 jurisdictions, cross-sectional	Anxiety, <i>r</i> = .19 Depression, <i>r</i> = .26 Gender (female), <i>r</i> = .12 Interpersonal sensitivity, <i>r</i> = .18 ODD/CD, <i>r</i> = .21 Obsessive compulsiveness, <i>r</i> = .15 Paranoid ideation, <i>r</i> = .21
Coulter et al., 2017	<i>N</i> = 22,843; Grade = 9–12; 8% LGB	Purposive sampling: The MetroWest Adolescent Health Survey within 26 high schools in Boston, cross-sectional	
D’Augelli, 2002	<i>N</i> = 542; age = 14–21; 100% LGB	Community-based survey across the U.S., cross-sectional	

(Continued)

TABLE 1. (Continued).

Authors	Sample characteristics	Sampling strategy, methodology	Correlate, STB effect size <i>r</i>
D'Augelli & Hershberger, 1993	<i>N</i> = 194; age = 15–21; 100% LGB	Community-based survey across the U.S., cross-sectional	Psychoticism, <i>r</i> = .23 Somatization, <i>r</i> = .16 Drug use, <i>r</i> = .33 Anxiety, <i>r</i> = .42 Depression, <i>r</i> = .56 General distress, <i>r</i> = .34 Outness/openness, <i>r</i> = −.24 Intimate partner conflict, <i>r</i> = .26 Self-esteem, <i>r</i> = −.45 Depression, <i>r</i> = .64 Supportive school climate, <i>r</i> = −.08
Denny et al., 2016	<i>N</i> = 9,056; age = 15–16; 4% LGB	Two-stage cluster design utilized for a nationally representative sample of New Zealand, cross-sectional	
Duong & Bradshaw, 2014	<i>N</i> = 951; Grade = 9–12; 100% LGB	Stratified, two-stage cluster: The 2009 New York City Youth Risk Behavior Survey, cross-sectional	Peer victimization, <i>r</i> = .41
Eisenberg et al., 2016	<i>N</i> = 122,180; Grade = 9–12; 9% LGB	Purposive sampling: The Minnesota Student Survey from 505 public schools, cross-sectional	Peer victimization, <i>r</i> = .27
Gibbs & Goldbach, 2015	<i>N</i> = 2,949 age = 18–24; 100% LGBT	Purposive sampling: The 2000 U.S. national data set OutProud, cross-sectional	Parental Rejection, <i>r</i> = .19 Internalizing homophobia, <i>r</i> = .07 Religious upbringing with conflict, <i>r</i> = .11
Goodenow et al., 2006	<i>N</i> = 3,637; age = 14–18; 6% LGB	Purposive sampling: The 1999 Massachusetts Youth Risk Behavior Survey from 52 schools, cross-sectional	Supportive school climate, <i>r</i> = −.32 Supportive school staff, <i>r</i> = −.29 Peer victimization, <i>r</i> = .38
Harchel et al., 2019	<i>N</i> = 934; age = 14–18; 100% LGB	Purposive sampling: The 2015 Dane County Youth Survey, cross-sectional	Homelessness, <i>r</i> = .31 School belonging, <i>r</i> = −.27

				Self-compassion, $r = -.33$ Supportive parents, $r = -.17$ Peer victimization, $r = .29$ Unsupportive school climate, $r = .35$
Hatzenbuehler et al., 2014	$N = 55,958$; age = 13–18; 8% LGB	Probability sampling: The 2005 and 2007 Youth Risk Behavior Surveillance Survey from 8 U.S. states, cross-sectional		
Hatzenbuehler & Keyes, 2013	$N = 31,852$; Grade = 8–11; 4% LGB	Purposive sampling: The Oregon Healthy Teens Survey in 30% of Oregon public schools, cross-sectional		
Hershberger et al., 1997	$N = 194$; age = 15–21; 100% LGB	Community-based survey across the U.S., cross-sectional	Age (older), $r = -.21$ Drug use, $r = .28$ Depression, $r = .32$ Outness/openness, $r = .04$ Peer victimization, $r = .22$ Self-esteem, $r = -.30$ Sexual risk, $r = .25$	
Hershberger & D’Augelli, 1995	$N = 194$; age = 15–21; 100% LGB	Community-based survey across the U.S., cross-sectional	General distress, $r = .27$ Peer victimization, $r = .26$ Self-esteem, $r = -.37$	Supportive parents, $r = -.08$ LGB Victimization, $r = .12$
Hightow-Weidman et al., 2011	$N = 351$; age = 13–24; 100% LGB	Community-based survey across the U.S., cross-sectional		
Lea et al., 2014	$N = 572$; age = 18–25; 100% LGB	Convenience, cross-sectional		Internalizing homophobia, $r = .13$ LGB Victimization, $r = .30$ Stigma/discrimination, $r = .21$

(Continued)

TABLE 1. (Continued).

Authors	Sample characteristics	Sampling strategy, methodology	Correlate, STB effect size <i>r</i>
Liu & Mustanski, 2012	<i>N</i> = 246; age = 16–20; 100% LGBT	Venue and snowball sampling, longitudinal	Gender nonconformity, <i>r</i> = .11
			Impulsivity, <i>r</i> = .16
Livingston et al., 2015	<i>N</i> = 412; age = 18–25; 100% LGB	Convenience, cross-sectional	LGBT victimization, <i>r</i> = .14
			Gender (female), <i>r</i> = .01
			Suicide attempt history, <i>r</i> = .13
			Adaptive personality, <i>r</i> = −.13
			Age (older), <i>r</i> = −.12
Lytle et al., 2014	<i>N</i> = 89,199; age = 18–24; 5% LGB	Purposive sampling: The 2008 and 2009 National College Health Assessment–II, cross-sectional	Peer victimization, <i>r</i> = .18
			Outness/openness, <i>r</i> = −.15
			Age (older), <i>r</i> = −.04
			Depression, <i>r</i> = .38
			Ethnicity (POC), <i>r</i> = .02
Marraccini & Brier, 2017	<i>N</i> = 53,618; Grades = 6–12; 5% LGB	Meta-analysis and systematic review	Gender (female), <i>r</i> = .07
			School belonging, <i>r</i> = −.14
			Age (older), <i>r</i> = −.16
			Depression, <i>r</i> = .33
			Hopelessness, <i>r</i> = .29
Mustanski & Liu, 2013	<i>N</i> = 237; age (<i>M</i> = 18.8); 100% LGBT	Venue and snowball sampling, cross-sectional	Impulsivity, <i>r</i> = .17
			LGBT Victimization, <i>r</i> = .29
			ODD/CD Symptoms, <i>r</i> = .14
			Supportive parents, <i>r</i> = −.14
			Supportive peers, <i>r</i> = −.12
Mustanski et al., 2014	<i>N</i> = 16,977; age = 13–18; 7.2% LGB	Purposive sampling: Wave 2005 and Wave 2007 of the Youth Risk Behavior Surveys within 11 jurisdictions, cross-sectional	Drug use, <i>r</i> = .48
			Depression, <i>r</i> = .55
			Drug use, <i>r</i> = .69
			Intimate partner violence, <i>r</i> = .69
			Peer victimization, <i>r</i> = .73

Mustanski et al., 2010	<i>N</i> = 246; age = 16–20; 100% LGBT	Community-based survey in Chicago, cross-sectional	Sexual risk, <i>r</i> = .63 Sexual victimization, <i>r</i> = .74 Bisexuality, <i>r</i> = −.02 Ethnicity (POC), <i>r</i> = .11 Gender (female), <i>r</i> = .14 Supportive parents, <i>r</i> = −.04
Needham & Austin, 2010	<i>N</i> = 11,153 age (<i>M</i> = 21.8); 3% LGB	Purposive sampling: Wave 3 of the National Longitudinal Study of Adolescent Health, cross-sectional	
Poon & Saewyc, 2009	<i>N</i> = 6,905; age (<i>M</i> = 15.7); 2.4% LGB	Purposive sampling: Population-based sample from the British Columbia Adolescent Health Survey of 2003, cross-sectional	Location (rural), <i>r</i> = .17
Poteat et al., 2013	<i>N</i> = 15,965; age = 10–18; 5.8% LGB	Purposive sampling: The 2009 Dane County Youth Survey, cross-sectional	Drug use, <i>r</i> = .21 LGB victimization, <i>r</i> = .22 ODD/CD Symptoms, <i>r</i> = .17 Peer victimization, <i>r</i> = .23 School belonging, <i>r</i> = −.20 Sexual risk, <i>r</i> = .21
Reisner et al., 2014	<i>N</i> = 3,131; Grade = 9–12; 7% LGB	Purposive sampling: The 2007 Massachusetts Youth Risk Behavior Survey from 59 schools, cross-sectional	Drug use, <i>r</i> = .23 Gender (female), <i>r</i> = .16 General distress, <i>r</i> = .56 Peer victimization, <i>r</i> = .25 Self-harm, <i>r</i> = .64 Supportive parents, <i>r</i> = −.37 Supportive school climate, <i>r</i> = −.14
Remafedi et al., 1991	<i>N</i> = 137; a ge = 14–21; 100% LGB	Community-based survey across the U.S., cross-sectional	Drug use, <i>r</i> = .34 Gender nonconformity, <i>r</i> = .29 ODD/CD Symptoms, <i>r</i> = .17 Sexual victimization, <i>r</i> = .22

(Continued)

TABLE 1. (Continued).

Authors	Sample characteristics	Sampling strategy, methodology	Correlate, STB effect size <i>r</i>
Robinson & Espelage, 2011	<i>N</i> = 13,213 age (<i>M</i> = 14.5); 5.4% LGBTQ	Purposive sampling: The 2008 and 2009 Dane County Youth Survey, cross-sectional	ODD/CD Symptoms, <i>r</i> = .09 Peer victimization, <i>r</i> = .22
Russell et al., 2011	<i>N</i> = 245; age = 21–25; 100% LGB	Convenience, retrospective	LGBT victimization, <i>r</i> = .43
Ryan et al., 2009	<i>N</i> = 224; age = 21–25; 100% LGB	Convenience, retrospective	Parental rejection, <i>r</i> = .30
Shadick et al., 2015	<i>N</i> = 4,345; age (<i>M</i> = 18); 14% LGB	Convenience, cross-sectional	Ethnicity (POC), <i>r</i> = .17
Shields et al., 2012	<i>N</i> = 2,154; Grade = 9–12; n/a % LGB	Purposive sampling: Wave 2009 of the SFUSD Youth Risk Behavior Survey, cross-sectional	Peer victimization, <i>r</i> = .29
Silenzio et al., 2007	<i>N</i> = 14,322; age = 18–26; 3% LGB	Purposive sampling: Wave 3 of the National Longitudinal Study of Adolescent Health, cross-sectional	Depression, <i>r</i> = .07 Drug use, <i>r</i> = .15
Smith et al., 2016	<i>N</i> = 68; age = 16–24; 100% LGB	Convenience, cross-sectional	Depression, <i>r</i> = .40 Drug use, <i>r</i> = .31 PTSD symptoms, <i>r</i> = .38 Depression, <i>r</i> = .35 Perceived stigma, <i>r</i> = .13 Sexual victimization, <i>r</i> = .19 Self-harm, <i>r</i> = .43
Thoma & Huebner, 2013	<i>N</i> = 276; age = 14–19; 100% LGB	Community-based survey across the U.S., cross-sectional	
Tsypes et al., 2016	<i>N</i> = 12,422; age (<i>M</i> = 21); 22% LGBQ	Convenience, cross-sectional	LGB Victimization, <i>r</i> = .19 Parental rejection, <i>r</i> = .16
van Bergen et al., 2013	<i>N</i> = 274; age (<i>M</i> = 16.7); 100% LGB	Community-based survey across the Netherlands, cross-sectional	

Van Heeringen & Vincke, 2000	$N = 404$; age ($M = 20.4$); 54% LGB	Convenience, cross-sectional	Depression, $r = .07$ Exposure to suicide, $r = .37$ Gender (female), $r = .23$
Whitaker et al., 2016	$N = 2,154$; Grade = 9–11; 7% LGB	Purposive sampling: Wave 2011 of the SFUSD California Healthy Kids Survey, cross-sectional	Depression, $r = .37$ Drug use, $r = .03$ Gender (female), $r = .21$ LGB victimization, $r = .15$ Peer victimization, $r = .08$ School belonging, $r = -.10$ Unsupportive school climate, $r = .05$
Ybarra et al., 2015	$N = 5,542$; age = 13–18; 39% LGBQ	Purposive sampling: The Teen Health and Technology survey, cross-sectional	Depression, $r = .06$ Peer victimization, $r = .43$ Self-esteem, $r = -.64$

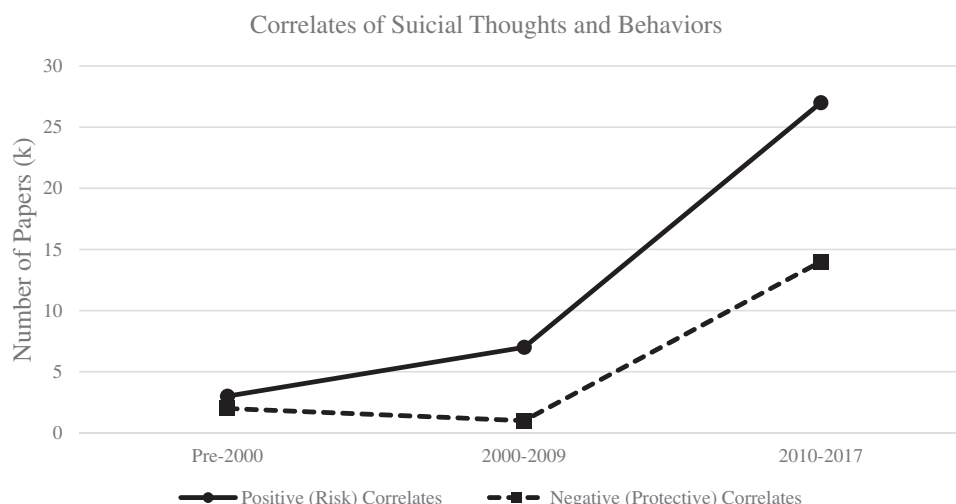


FIGURE 2. Number of articles across each era of STB research with LGBTQ youth that met inclusion criteria.

Table 3 for syntheses of other effect sizes (i.e., when fewer than 3 effect sizes were available). Table 4 offers a ranking of the top positive and negative correlates of STB among LGBTQ youth. Positive correlates varied substantially in their effect sizes. Perceived burdensomeness, self-harm, and sexual risk emerged as having moderate-strong magnitude. With regard to negative correlates, self-compassion and self-esteem also had moderate-strong effect sizes. However, the correlates also varied considerably in the number of effect sizes available to calculate a meta-analytic mean.

Moderator Analyses

Given the high degree of heterogeneity found among some correlates, follow-up meta-regression analyses were conducted if the random effects parameters were estimated by at least ten effect sizes. The a priori variables of interest were included in different models due to the number of available effect sizes. For the factors that

demonstrated heterogeneity, gender was not available to test as a moderator. Table 5 illustrates the various models.

LGBTQ Victimization

LGBTQ victimization random effects were estimated from 11 effect sizes and there appeared to be a significant amount of heterogeneity ($I^2 = 67\%$). The meta-regression suggested that there were no significant differences between suicidal ideation and behavior ($b = .01$, $SE = .03$, $t = 0.37$, $p = ns$). However, mean differences were present between suicidal ideation ($M = .18$, $SE = .02$, $t = 9.59$, $p < .05$) and suicidal behavior ($M = .20$, $SE = .03$, $t = 7.08$, $p < .01$). Similar results were found for the measurement of sexuality, such that there was no significant relationship between lesbian/gay and bisexual youth ($b = -.07$, $SE = .04$, $t = -1.48$, $p = ns$) and between lesbian/gay and a combined measurement ($b = -.05$, $SE = .05$, $t = -1.11$, $p = ns$). Mean

TABLE 2. Meta-Analytic Findings of Risk and Protective Correlates

Predictor	<i>k</i> (<i>ES</i>)	Average effect (<i>SE</i>)	95% CI	<i>I</i> ² , <i>τ</i> ²
Depression	14 (19)	.32 (.05)	.21, .44	.99, .05
Drug use	10 (19)	.30 (.04)	.22, .44	.99, .07
Family conflict	1 (4)	.16 (.02)	.08, .25	.23, .01
Gender (female)	8 (12)	.12 (.03)	.04, .19	.85, .01
General distress	3 (4)	.33 (.09)	.05, .62	.91, .04
Internalized Homophobia	2 (4)	.07 (.03)	−.07, .19	.64, .01
Intimate partner violence	3 (7)	.32 (.10)	.07, .57	.98, .07
LGBT peer victimization	9 (11)	.19 (.02)	.16, .23	.65, .01
ODD/CD	5 (6)	.15 (.01)	.10, .20	.60, .01
Age (older)	4 (5)	−.08 (.02)	−.17, .01	.66, .01
Outness/openness	4 (5)	−.13 (.05)	−.27, .02	.92, .01
Parental rejection	3 (6)	.20 (.03)	.12, .29	.38, .01
Peer victimization	16 (27)	.27 (.03)	.22, .33	.97, .02
Stigma and discrimination	5 (8)	.08 (.04)	−.02, .18	.69, .01
Ethnicity (POC)	4 (7)	.09 (.03)	.01, .17	.72, .01
Location (rural)	1 (4)	.07 (.05)	−.08, .22	.82, .01
Sexual risk	3 (5)	.40 (.09)	.13, .67	.99, .03
Sexual victimization	3 (7)	.33 (.15)	.06, .71	.98, .05
Supportive parents	7 (14)	−.15 (.03)	−.20, −.09	.86, .01
Supportive school climate	5 (13)	−.11 (.03)	−.17, −.05	.56, .01
Unsupportive school climate	2 (3)	.07 (.04)	−.12, .25	.45, .01

Note. *k*: number of studies; *ES*: number of effect sizes; *SE*: standard error; CI: confidence interval; *τ*²: Tau-squared; ODD/CD: oppositional defiant disorder/conduct disorder symptoms; POC: person of color.

differences were present among lesbian/gay ($M = .23$, $SE = .04$, $t = 5.88$, $p = \text{ns}$), bisexual ($M = .17$, $SE = .02$, $t = 10.03$, $p < .05$), and combined ($M = .18$, $SE = .03$, $t = 7.52$, $p < .01$).

Supportive School Climate

Supportive School Climate random effects were estimated from 13 effect sizes and a significant amount of heterogeneity was indicated ($I^2 = 56\%$). The analyses indicated that there were not significant differences between suicidal ideation and behavior ($b = .08$, $SE = .05$, $t = 1.47$, $p = \text{ns}$). Mean differences emerged between suicidal ideation ($M = -.12$,

$SE = .03$, $t = -3.70$, $p < .01$) and suicidal behavior ($M = -.05$, $SE = .04$, $t = -1.16$, $p = \text{ns}$). There were no significant differences between lesbian/gay and a combined measurement of sexuality ($b = .04$, $SE = .03$, $t = 1.29$, $p = \text{ns}$). There were mean differences between lesbian/gay ($M = -.14$, $SE = .01$, $t = -\text{NA}$, $p = \text{ns}$) and combined ($M = -.11$, $SE = .03$, $t = -3.52$, $p < .01$). There were no data available to examine differences between lesbian/gay and bisexual.

Publication Bias

Publication bias analyses were completed for all meta-analyses that included

TABLE 3. Meta-Analytic Synthesis of Risk and Protective Correlates

Predictor	<i>k</i> (<i>ES</i>)	Met-analytic average or <i>r</i> (<i>SE</i>)	95% CI
Adaptive personality Profile	1 (1)	−.13 (.06)	−.25, −.01
Anxiety	2 (2)	.31 (.05)	.07, .51
Sexuality (bisexual)	1 (2)	−.02 (.04)	−.24, .20
Coming-out distress	1 (1)	.15 (.01)	.08, .21
Exposure to suicide	1 (1)	.36 (.11)	.14, .55
Gender nonconformity	2 (2)	.17 (.08)	−.01, .33
Homelessness	1 (2)	.28 (.03)	.22, .34
Hopelessness	1 (1)	.29 (.06)	.17, .40
Impulsivity	2 (2)	.16 (.06)	.08, .25
Interpersonal sensitivity	1 (1)	.18 (.04)	.10, .26
Obsessive-compulsiveness	1 (1)	.15 (.04)	.07, .23
Paranoid ideation	1 (1)	.21 (.04)	.13, .29
Perceived burdensomeness	1 (1)	.57 (.03)	.52, .61
Psychosis	1 (1)	.23 (.04)	.15, .31
PTSD symptoms	1 (2)	.30 (.08)	.11, .47
Religious upbringing	1 (2)	.11 (.10)	−.06, .26
Self-compassion	1 (2)	−.46 (.03)	−.51, −.40
Somatization	1 (1)	.16 (.04)	.08, .24
Suicide attempt History	1 (1)	.13 (.06)	.01, .25
Thwarted Belongingness	1 (1)	.34 (.03)	.28, .40

Note. *k*: number of studies; *ES*: number of effect sizes; *SE*: standard error; CI: confidence interval; PTSD: post-traumatic stress disorder.

TABLE 4. Top Risk and Protective Correlates of STB among LGBTQ Youth

Rank	Correlate	<i>ES</i> (<i>SE</i>)	Number of <i>ES</i>
Positive (risk) correlates			
1	Perceived burdensomeness	.57 (.03)	1
2	Self-harm	.51 (.09)	3
3	Sexual risk	.40 (.09)	5
4	Exposure to suicide	.36 (.11)	1
5	Thwarted belongingness	.34 (.03)	1
6	Depression	.32 (.05)	19
7	Intimate partner violence	.32 (.10)	7
Negative (protective) correlates			
1	Self-compassion	−.46 (.03)	1
2	Self-esteem	−.42 (.06)	5
3	School belonging	−.17 (.03)	6
4	Supportive parents	−.15 (.03)	14
5	Outness/openness	−.13 (.05)	5

Note. *ES*: effect size; *SE*: standard error.

TABLE 5. Meta-Analytic Moderator Analyses

	LGBT peer victimization		Supportive school climate	
	Coefficient (SE)	t-value	Coefficient (SE)	t-value
Intercept	.19 (.02)*	9.59	-.13(.03)**	-3.70
Suicidality: Behavior	.01(.03)	0.73	.08(.05)	1.47
Sexuality: bisexual	-.06(.04)	-1.48	NA	NA
Sexuality: combined	-.05(.05)	-1.11	.04(.03)	1.29

Note. Reference groups: Suicidality = Ideation, Sexuality = Lesbian/Gay; * $p < .05$, ** $p < .01$; SE = standard error.

TABLE 6. Publication Bias Analyses

Predictor	k	Duval & Tweedie's Trim & Fill			Egger's Test	
		Number of missing studies	Original ES (SE)	Imputed ES (SE)	Intercept, p-value	Degree of Bias
Depression	14	7	.32 (.07)	.13 (.08)	$B = 1.76, p = .08$	Moderate
Drug use	10	0	.26 (.08)	.26 (.08)	$B = .05, p = .96$	Low
Gender (female)	8	3	.10 (.07)	.07 (.07)	$B = .94, p = .34$	Low
General distress	3	2	.42 (.13)	.56 (.11)	$B = 1.14, p = .26$	Low
Intimate partner violence	3	2	.45 (.15)	.69 (.19)	$B = 2.26, p = .02$	Low
LGBT peer victimization	9	1	.20 (.06)	.19 (.06)	$B = .13, p = .90$	Low
ODD/CD	5	0	.15 (.07)	.15 (.07)	$B = .01, p = .99$	Low
Age (older)	4	2	-.09 (.09)	-.07 (.08)	$B = .61, p = .08$	Moderate
Outness/openness	4	2	-.04 (.08)	.01 (.07)	$B = 1.22, p = .22$	Low
Parental rejection	3	2	.20 (.14)	.25 (.11)	$B = .35, p = .73$	Low
Peer victimization	16	3	.27 (.05)	.30 (.05)	$B = .02, p = .99$	Low
Stigma and discrimination	5	3	.28 (.12)	.43 (.11)	$B = 1.74, p = .08$	Moderate
Ethnicity (POC)	4	2	.11 (.10)	.13 (.09)	$B = .16, p = .87$	Low
School belonging	4	0	-.15 (.07)	-.15 (.07)	$B = .04, p = .97$	Low
Self-esteem	4	1	-.27 (.17)	-.18 (.17)	$B = .78, p = .44$	Low
Sexual risk	3	0	.38 (.12)	.38 (.12)	$B = .05, p = .96$	Low
Sexual victimization	3	2	.43 (.20)	.74 (.23)	$B = 2.46, p = .01$	Moderate
Supportive parents	7	4	-.12 (.07)	-.05 (.06)	$B = 1.11, p = .27$	Low
Supportive school climate	5	0	-.12 (.11)	-.12 (.11)	$B = .50, p = .62$	Low

Note. k: number of studies; ES: effect size; SE: standard error.

more than two studies (Table 6). There was considerable variability of publication bias as a function of predictor. As per the trim and fill method, studies missing

ranged from 0 (e.g., drug use, oppositional defiant disorder (ODD), school belonging, sexual risk, supportive school climate) to 7 (e.g., depression) (Table 6).

The meta-regression method suggested that there may be publication bias present in the study of sexual violence and intimate partner violence.

DISCUSSION

STB continue to be a major public health issue for adults and adolescents, but especially for LGBTQ youth. Given the grave consequences and potential for prevention, there is a clear need for additional research. Mental health professionals have limited resources available that can inform interventions and prevention of suicide among specific populations like LGBTQ youth (Franklin et al., 2017). The current synthesis examined the extant empirical literature on positive (risk) and negative (protective) correlates of STB among LGBTQ youth. Goals included identifying strengths and weaknesses of the existing literature as well as offering a robust empirical foundation for future applied work. Findings demonstrated that factors varied considerably in the magnitude of their associations with STB and that there were substantial shortcomings in the extant literature.

POSITIVE CORRELATES OF STB

Self-harm, perceived burdensomeness, and sexual risk were among the strongest positive correlates of STB among LGBTQ youth. Factors like exposure to suicide, thwarted belongingness, depression, and intimate partner violence were all moderate in their effect size. However, some correlates with the strongest magnitude were composed of only one or a few effect sizes. There was only one report that inspected exposure to suicide, which was surprising given the notions of social-learning theory

and suicide contagion (Gould, Jamieson, & Romer, 2003). It is understandably difficult to quantitatively explore the effect of suicide contagion and co-rumination, but these factors are starkly absent from the LGBTQ literature. Likewise, factors associated with prevailing theories like IPTS (Joiner, 2005) and MST (Meyer, 2003) were also examined by very few studies. IPTS suggests that suicidal ideation is associated with social factors like feeling isolated, unsupported, flawed, or being a burden on important people in their life. MST asserts that the combination of stigma-related stressors and typical daily stressors contribute to well-being disparities between LGBTQ youth and their peers. Only two studies precisely surveyed the association between internalized homophobia and STB and the magnitude of the effect sizes was small.

Victimization, Stigma, and Discrimination

Peer victimization is likely one of the most developed correlates of STB among LGBTQ youth and offered a medium effect size. The idea that peer victimization relates to STB aligns well with MST and IPTS because victimization is another stressor and is associated with feelings of belonging. A number of researchers have made an effort to measure bias-based peer victimization to further substantiate MST and the effect sizes were smaller than general peer victimization. It is possible that when peer victimization is measured broadly, it also captures bias-based victimization, which explains some of the variability. Nevertheless, prevailing theory suggests that stigma-related stressors, like bias-based victimization, would be more deleterious for mental health. It is unclear why the synthesis did not demonstrate this

relationship. Bias-based victimization appeared to be heterogeneous with regards to effect sizes, but the moderator analysis was unable to identify the reason for the variability. Intimate partner violence and sexual victimization also offered medium effect sizes on STB. In sum, the various forms of victimization were relatively similar in their impact on STB among LGBTQ youth. Additional data would offer insight into how and why bias-based victimization may be different in its relationship to STB.

The meta-analytic effect size for stigma/discrimination was relatively weak in magnitude. It is possible that the constructs are too abstract and broad for youth—that is, measures that speak to specific forms of stigma/discrimination like bias-based victimization or school climate are more robust at predicting STB.

Mental Health

With the exception of perceived burdensomeness, most of the mental health issues correlated with STB were remarkably similar in their effect size. Depression, anxiety, general distress, trauma, thwarted belongingness, and hopelessness offered medium effect sizes. Other correlates like impulsivity, paranoia, oppositional defiance, and psychosis were more modest in their magnitude. Overall, it appears that some symptoms are more strongly correlated with STB among LGBTQ youth than others (i.e., internalizing symptoms vs. oppositional defiance). However, they were relatively similar when categorized with other symptoms with comparable effect sizes. Specifically, depression and general distress offered essentially the same effect size. Depression was one of the most studied mental health issues and was

medium in its effect size. These results align well with the broader STB literature, which suggests that our limited understanding of STB can influence how often constructs are studied when the work is not necessarily warranted (Franklin et al., 2017). It is clear that other, more theoretically driven, mental health correlates like perceived burdensomeness should be the focus of future work.

Ecological and Interpersonal Factors

Family conflict, parental rejection, religious upbringing, interpersonal sensitivity, and coming-out distress offered small-medium effect sizes. Although not as pronounced as mental health issues and victimization, it is clear that familial relationships, cultural values, and interpersonal dynamics play a role in STB among LGBTQ youth. Homelessness, perhaps an extreme example of family rejection, offered a medium effect size. Living in a rural community and unsupportive school climates were positively associated with STB, but the magnitudes of effects were modest.

Behavioral Factors

Generally speaking, behavioral indicators tended to be stronger in their effect sizes on STB than factors within other dimensions. Self-harm, sexual risk, and drug use were all moderate-strong in their association with STB. The existing research on adolescents in general has demonstrated that factors like self-harm and drug use are indicative of suicidal behaviors (O'Brien, Becker, Spirito, Simon, & Prinstein, 2014; Vijayakumar, Kumar, & Vijayakumar, 2011). Although there is overlap in risky behaviors which

predict STB, it can be conceptualized that factors predictive of acting on suicidal thoughts are associated with either more intense distress or unique factors such as disinhibition. MST offers a useful paradigm for understanding the relationships between behavioral factors and STB. For example, a meta-analysis on LGBTQ youth drug use indicated that there was a clear link between identity-related distress and drug use (Goldbach, Tanner-Smith, Bagwell, & Dunlap, 2014). Likewise, the stigma associated with being LGBTQ can explain engaging in sexually risk behaviors (Mustanski et al., 2014). The effect size for previous suicide attempts was modest and is counter to broad theoretical and empirical findings which posit that previous suicide attempts may be the best predictor of future attempts (Bostwick et al., 2016). This could be attributable to the lack of available effect sizes and ethical/logistical limitations of STB research. Overall, as the present syntheses examine the various correlates of STB among LGBTQ, the question emerges: How distinct or interrelated are these factors? For example, it is likely that interpersonal difficulties and other mental health issues co-occur and potentially predict engaging in these risky behaviors. Research with temporal designs which include multiple predictors will help demonstrate the directionality among these factors.

Demographic Factors

Demographics were also positively correlated with STB among LGBTQ youth. For example, youth who reported that they were female were modestly more likely to report STB. This is somewhat of a departure from the historical LGBTQ literature, which suggests that males were often more likely to report STB (Haas

et al., 2010). This discrepancy could be explained by variations in reported suicidal ideation and suicidal behavior, as well as unique factors faced by female LGBTQ youth like having multiple marginalized identities. Note, most of the reports measured gender or sex assigned at birth and not gender identity. Gender nonconformity was the strongest demographic correlate of STB (Remafedi et al., 1991). This is no surprise, as other reports have illustrated how gender nonconformity can leave LGBTQ youth at increased risk given the visibility of their potential or assumed identity (Friedman, Koeske, Silvestre, Korr, & Sites, 2006; Toomey, Ryan, Diaz, Card, & Russell, 2010). Race/ethnicity also offered a small but significant effect size such that LGBTQ youth of color were more likely to report STB. This could also be attributable to dealing with additional stigma-related stressors. Intersectionality is a useful and important framework that can be utilized to understand LGBTQ youth well-being but was largely beyond the scope of this report (Bowleg, 2012; Graham et al., 2011). Multiple oppressed or marginalized identities can lead to additive or worse health outcomes, but this is not always the case as some identities can be protective (Bostwick et al., 2014).

NEGATIVE CORRELATES OF STB

Despite the movement to appreciate the remarkable resilience of LGBTQ youth, the existing literature is somewhat lacking within the realm of STB (Herrick, Stall, Goldhammer, Egan, & Mayer, 2014; Mustanski et al., 2011; Reisner et al., 2014; Savin-Williams, 2001; Wexler, DiFluvio, & Burke, 2009). However, factors like self-esteem and self-compassion appear to offer substantial resilience. Being older and open with one's LGBTQ

identity offered small effect sizes. Older youth are likely more adept at navigating stigma-related stressors and therefore able to utilize support and resources. Being open with one's identity could play a similar role in that the youths are more accepting of themselves and also able to find much-needed support. Sexuality was difficult for this study to include due to methodological limitations, but some studies offered sufficient data to compare lesbian and gay youth to their bisexual peers. The existing theoretical literature suggests that being bisexual may be indicative of worse outcomes, generally speaking (Israel, 2018). In contrast, quantitative results from one study suggested that being bisexual was negatively correlated with STB, but modest in its effect size. One possible explanation is that bisexuality can be conceptualized as a risk factor broadly but does not manifest as a risk factor for STB. Nevertheless, the available data are limited and future work needs to focus on this population.

Research continues to demonstrate that factors like anti-bullying policies, a sense of belonging, and social support offer small-moderate effects on STB. A stress-buffering framework does well to explain the protective element a sense of support offers in the face of minority stress (Malecki & Demaray, 2002). Several studies exemplified that support was negatively correlated with STB, whether from school staff (Coulter, Kessel Schneider, Beadnell, & O'Donnell, 2017; Goodenow et al., 2006), peers (Mustanski & Liu, 2013; van Heeringen & Vincke, 2000), or parents (Coulter et al., 2017; Hatchel et al., 2019; Hershberger & D'Augelli, 1995; Mustanski & Liu, 2013; Needham & Austin, 2010; Reisner et al., 2014). Effect sizes appeared to be similar despite the source of support.

Moderator Findings

A few factors were examined as potentially moderating the heterogeneity of effect sizes. The measurement of STB was chosen because theory suggests that thoughts and behaviors are discrete (Klonsky & May, 2014; Taliaferro & Muehlenkamp, 2014). The other factors—gender and sexuality—were chosen because the existing literature is unclear on how they relate to STB. They were also chosen because many of the included studies offered sufficient data. One factor that was not coded or included in the present synthesis is quality of study. Although this can be an important factor for explaining variance of effect sizes, the available studies all offered very similar methodologies (i.e., cross-sectional, only self-report measures, and similar measures).

Only LGBTQ victimization and supportive school climates demonstrated enough heterogeneity of effect sizes to warrant moderator analyses. However, gender-level data was not available for moderator analyses of the studies which examined the aforementioned factors. For LGBTQ victimization, no moderator effects were found. Small mean differences did emerge which demonstrated that bias-based victimization was associated with a higher mean of suicidal behavior than ideation. Similar results were found when comparing lesbian and gay youth to bisexual youth—that is, lesbian and gay youth endorsed more LGBTQ victimization than their bisexual peers. No moderating effects were found for supportive school climate, either. Mean differences suggest that supportive school climates were more indicative of diminished suicidal ideation than behavior. In sum, the lack of moderator effects could be attributable to the narrow range of effect sizes and limited availability of other pertinent moderating factors.

Clinical Implications

Given the complex nature of STB, one of the main goals of this report was to offer insight that could be useful for both identifying and treating LGBTQ youth at risk for STB. This is an important development for the field given the critical nature of this public health issue. Mental health professionals may need to pay particularly close attention to LGBTQ youth who present with perceived burdensomeness and behavioral risk factors like self-harm, drug use, and sexual risk. These are likely good indicators that warrant direct assessment and empirically supported treatment. Gender-nonconforming youth or those that have several of the reported risk factors in the absence of resiliency may also need additional attention. Moreover, safety planning is likely a good strategy even when the youth do not clearly present with STB because it is not clear how the symptoms may oscillate over time. Clinicians and policymakers should aim to cultivate protective factors including the development and implementation of community and school policies (Goodenow et al., 2006; Poteat et al., 2013; Reisner et al., 2014). Programs and policies likely need to be adapted or developed with the unique challenges faced by LGBTQ youth in mind. Providers should encourage parents to be accepting and supportive of their children and may consider encouraging clients to be open with their identities. Self-compassion is another compelling protective factor because this tends to be a quality that can be engendered through intervention and is therefore not as rigid as self-esteem (Neff, 2003).

Many of these empirical and theoretically based suggestions corroborate an LGBTQ-affirming approach to treatment (APA, 2012). For example, supportive

school environments and school belonging may disrupt feelings of thwarted belongingness. Likewise, validation, affirmation, and psychoeducation will facilitate self-acceptance, improved identity valence, and diminished internalized phobia. In sum, interventions aimed at dispelling feelings of burdensomeness and assessing for indicators like self-harm and sexual risk may prove to be especially beneficial for LGBTQ youth at risk.

Limitations

The meta-analyses and systematic review are distinct additions to the existing literature but there were a number of limitations. The age range of inclusion conflates the established different developmental periods of adolescence and emerging adulthood. As such, future research should also attempt to use more precise sampling methodologies. Similarly, there was diversity in how STB were measured and this review often assimilated ideation, history, and behavior in an effort to offer a broad review. This is not ideal given the evidence that these suicidal thoughts and behaviors are distinct phenomena (Klonsky & May, 2014; Taliaferro & Muehlenkamp, 2014). Yet, the present study aimed to examine these potential differences if the extant literature offered sufficient data and effect-size heterogeneity warranted moderator analyses. Another limitation was the potential for publication bias. Efforts were made to recruit unpublished data by contacting researchers in the field but a systematic approach to collect and code unpublished works was not conducted. Third, the approach of examining correlates is not well suited to explore group differences, especially when it comes to matters like intersectionality. Yet other reports have been able to synthesize these factors

fairly well (Marshall et al., 2011). Many of the calculated effect sizes were comprised of few studies and therefore interpretations and generalizations are limited. For example, more robust claims can be made concerning effect sizes that were derived from many studies (i.e., depression, peer victimization) when compared to factors that were simply reiterated from few studies (i.e., exposure to suicide, self-compassion). Finally, this review offers limited insight on correlates of STB among transgender youth.

Future Directions and Conclusions

There are notable theoretical and methodological limitations of the examined literature. Theoretically pertinent constructs that are relevant to our understanding of STB among LGBTQ youth are largely absent. For example, only one study examined the roles of thwarted belongingness and perceived burdensomeness even though IPTS posits them as key factors when considering STB (Joiner, 2005). With regard to MST, victimization and stigma were thoroughly examined but other factors like internalized phobia, identity, and community were underrepresented (Meyer, 2003). Very few studies employed longitudinal designs and therefore there was scant work on individual trajectories of STB over time. It would be helpful to examine whether LGBTQ mental health problems like STB are transient or persistent into emerging adulthood and beyond. Likewise, it is unclear whether the explored correlates of suicide among LGBTQ youth are co-occurring, are additive, are precursors that precipitate STB, or are factors that attenuate risk. Most of the existing literature explored simple group differences or disparities (i.e., males vs. females) and few studies employed approaches like multilevel modeling,

growth modeling, or experimental designs. Transgender youth are largely absent from the existing literature and are often combined with LGBQ youth even though they face unique challenges like transitioning or hormone replacement therapy, among others. Within-group studies that examine variation of STB attributable to gender identity, gender expression, sexuality, and other intersecting identities will be valuable contributions to the field.

Although there has been a clear movement to examine and appreciate resiliency among LGBTQ youth, this report clearly demonstrates that these studies are still lacking in depth and breadth when compared to positive correlates/risk factors. Studies examining how effective prevention or intervention programs are for STB among LGBTQ youth are sorely needed. Finally, many studies were not included given the inconsistencies in reports and the unresponsiveness of researchers. Developing norms within the research community to facilitate syntheses will likely benefit science, interventions, programs, and policies.

All things considered, our findings demonstrate that STB among LGBTQ youth is a complex issue potentially influenced by a myriad of correlates. However, a number of factors emerged as being more strongly related to STB. The present syntheses illustrate strengths and limitations in the extant literature and offer insight for future research, policy, and clinical work with LGBTQ youth.

AUTHOR NOTE

Tyler Hatchel, Department of Psychology, University of Florida, Gainesville, FL 32611, USA.

Joshua R. Polanin, Research & Evaluation, American Institutes for Research, Washington, DC, 20007, USA.

Dorothy L. Espelage, Department of Psychology, University of Florida, Gainesville, FL 32611, USA.

Correspondence concerning this article should be addressed to Tyler Hatchel, Department of Psychology, University of Florida, Gainesville, FL 32611, USA. E-mail: tylerh42@ufl.edu

REFERENCES

Studies included in the meta-analyses are marked with an asterisk

- *Almeida, J., Johnson, R. M., Corliss, H. L., Molnar, B. E., & Azrael, D. (2009). Emotional distress among LGBT youth: The influence of perceived discrimination based on sexual orientation. *Journal of Youth and Adolescence*, 38(7), 1001–1014. doi:[10.1007/s10964-009-9397-9](https://doi.org/10.1007/s10964-009-9397-9)
- American Psychological Association. (2012). Guidelines for psychological practice with lesbian, gay, and bisexual clients. *American Psychologist*, 67(1), 10. doi:[10.1037/a0024659](https://doi.org/10.1037/a0024659)
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469. doi:[10.1037/0003-066X.55.5.469](https://doi.org/10.1037/0003-066X.55.5.469)
- *Baams, L., Grossman, A. H., & Russell, S. T. (2015). Minority stress and mechanisms of risk for depression and suicidal ideation among lesbian, gay, and bisexual youth. *Developmental Psychology*, 51(5), 688. doi:[10.1037/a0038994](https://doi.org/10.1037/a0038994)
- Beck, A. T., Brown, G., & Steer, R. A. (1989). Prediction of eventual suicide in psychiatric inpatients by clinical ratings of hopelessness. *Journal of Consulting and Clinical Psychology*, 57(2), 309–310. doi:[10.1037/0022-006X.57.2.309](https://doi.org/10.1037/0022-006X.57.2.309)
- *Blosnich, J., & Bossarte, R. (2012). Drivers of disparity: Differences in socially based risk factors of self-injurious and suicidal behaviors among sexual minority college students. *Journal of American College Health*, 60(2), 141–149. doi:[10.1080/07448481.2011.623332](https://doi.org/10.1080/07448481.2011.623332)
- *Bostwick, W. B., Meyer, I., Aranda, F., Russell, S., Hughes, T., Birkett, M., & Mustanski, B. (2014). Mental health and suicidality among racially/ethnically diverse sexual minority youths. *American Journal of Public Health*, 104(6), 1129–1136. doi:[10.2105/AJPH.2013.301749](https://doi.org/10.2105/AJPH.2013.301749)
- Bostwick, J. M., Pabbati, C., Geske, J. R., & McKean, A. J. (2016). Suicide attempt as a risk factor for completed suicide: Even more lethal than we knew. *American Journal of Psychiatry*, 173(11), 1094–1100. doi:[10.1176/appi.ajp.2016.15070854](https://doi.org/10.1176/appi.ajp.2016.15070854)
- Bouris, A., Guilamo-Ramos, V., Pickard, A., Shiu, C., Loosier, P. S., Dittus, P., ... Michael Waldmiller, J. (2010). A systematic review of parental influences on the health and well-being of lesbian, gay, and bisexual youth: Time for a new public health research and practice agenda. *The Journal of Primary Prevention*, 31(5-6), 273–309. doi:[10.1007/s10935-010-0229-1](https://doi.org/10.1007/s10935-010-0229-1)
- Bowleg, L. (2012). The problem with the phrase women and minorities: Intersectionality—an important theoretical framework for public health. *American Journal of Public Health*, 102(7), 1267–1273. doi:[10.2105/AJPH.2012.300750](https://doi.org/10.2105/AJPH.2012.300750)
- Brent, D. A., Baugher, M., Bridge, J., Chen, T., & Chiappetta, L. (1999). Age- and sex-related risk factors for adolescent suicide. *Journal of the American Academy of Child & Adolescent Psychiatry*, 38(12), 1497–1505. doi:[10.1097/00004583-199912000-00010](https://doi.org/10.1097/00004583-199912000-00010)
- Bronfenbrenner, U. (1994). Ecological models of human development. *International Encyclopedia of Education*, 3(2), 37–43.
- Brown, G. K., & Jager-Hyman, S. (2014). Evidence-based psychotherapies for suicide prevention: Future directions. *American Journal of Preventive Medicine*, 47(3), S186–S194. doi:[10.1016/j.amepre.2014.06.008](https://doi.org/10.1016/j.amepre.2014.06.008)
- Cash, S. J., & Bridge, J. A. (2009). Epidemiology of youth suicide and suicidal behavior. *Current Opinion in Pediatrics*, 21(5), 613–619. doi:[10.1097/MOP.0b013e32833063e1](https://doi.org/10.1097/MOP.0b013e32833063e1)
- Chronis-Tuscano, A., Molina, B. S. G., Pelham, W. E., Applegate, B., Dahlke, A., Overmyer, M., & Lahey, B. B. (2010). Very early predictors of adolescent depression and suicide attempts in children with attention-deficit/hyperactivity disorder. *Archives of General Psychiatry*, 67(10), 1044–1051. doi:[10.1001/archgenpsychiatry.2010.127](https://doi.org/10.1001/archgenpsychiatry.2010.127)
- Centers for Disease Control and Prevention, National Center for Injury Prevention and

- Control. (2013). *Web-based Injury Statistics Query and Reporting System*. Retrieved from <http://www.cdc.gov/injury/wisqars/>
- *Coulter, R. W., Kessel Schneider, S., Beadnell, B., & O'Donnell, L. (2017). Associations of outside-and within-school adult support on suicidality: Moderating effects of sexual orientation. *American Journal of Orthopsychiatry*, 87(6), 671–679. doi:10.1037/ort0000209
- *D'Augelli, A. R. (2002). Mental health problems among lesbian, gay, and bisexual youths ages 14 to 21. *Clinical Child Psychology and Psychiatry*, 7(3), 433–456. doi:10.1177/1359104502007003010
- *D'Augelli, A. R., & Hersherberger, S. L. (1993). Lesbian, gay, and bisexual youth in community settings: Personal challenges and mental health problems. *American Journal of Community Psychology*, 21(4), 421–448. doi:10.1007/BF00942151
- de Graaf, R., Sandfort, T. G., & ten Have, M. (2006). Suicidality and sexual orientation: Differences between men and women in a general population-based sample from the Netherlands. *Archives of Sexual Behavior*, 35(3), 253–262. doi:10.1007/s10508-006-9020-z
- *Denny, S., Lucassen, M. F., Stuart, J., Fleming, T., Bullen, P., Peiris-John, R., ... Utter, J. (2016). The association between supportive high school environments and depressive symptoms and suicidality among sexual minority students. *Journal of Clinical Child & Adolescent Psychology*, 45(3), 248–261. doi:10.1080/15374416.2014.958842
- *Duong, J., & Bradshaw, C. (2014). Associations between bullying and engaging in aggressive and suicidal behaviors among sexual minority youth: The moderating role of connectedness. *Journal of School Health*, 84(10), 636–645. doi:10.1111/josh.12196
- Duval, S., & Tweedie, R. (2000). Trim and fill: A simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. *Biometrics*, 56(2), 455–463. doi:10.1111/j.0006-341X.2000.00455
- Egger, M., Smith, G. D., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *BMJ*, 315(7109), 629–634. doi:10.1136/bmj.315.7109.629
- *Eisenberg, M. E., McMorris, B. J., Gower, A. L., & Chatterjee, D. (2016). Bullying victimization and emotional distress: Is there strength in numbers for vulnerable youth? *Journal of Psychosomatic Research*, 86, 13–19. doi:10.1016/j.jpsychores.2016.04.007
- Fisher, Z., & Tipton, E. (2015). *Robust variance meta-regression (Version 1.6) [Software]*. Retrieved from <http://cran.r-project.org/web/packages/robumeta/robumeta.pdf>
- Franklin, J. C., Ribeiro, J. D., Fox, K. R., Bentley, K. H., Kleiman, E. M., Huang, X., ... Nock, M. K. (2017). Risk factors for suicidal thoughts and behaviors: A meta-analysis of 50 years of research. *Psychological Bulletin*, 143(2), 187–232. doi:10.1037/bul0000084
- Friedman, M. S., Koeske, G. F., Silvestre, A. J., Korr, W. S., & Sites, E. W. (2006). The impact of gender-role nonconforming behavior, bullying, and social support on suicidality among gay male youth. *Journal of Adolescent Health*, 38(5), 621–623. doi:10.1016/j.jadohealth.2005.04.014
- Garofalo, R., Wolf, R. C., Kessel, S., Palfrey, J., & DuRant, R. H. (1998). The association between health risk behaviors and sexual orientation among a school-based sample of adolescents. *PEDIATRICS*, 101(5), 895–902. doi:10.1542/peds.101.5.895
- *Gibbs, J. J., & Goldbach, J. (2015). Religious conflict, sexual identity, and suicidal behaviors among LGBT young adults. *Archives of Suicide Research*, 19(4), 472–488. doi:10.1080/13811118.2015.1004476
- Glenn, C. R., Franklin, J. C., & Nock, M. K. (2015). Evidence-based psychosocial treatments for self-injurious thoughts and behaviors in youth. *Journal of Clinical Child & Adolescent Psychology*, 44(1), 1–29. doi:10.1080/15374416.2014.945211
- Goldbach, J. T., Tanner-Smith, E. E., Bagwell, M., & Dunlap, S. (2014). Minority stress and substance use in sexual minority adolescents: A meta-analysis. *Prevention Science*, 15(3), 350–363. doi:10.1007/s11121-013-0393-7
- Goldbach, J. T., & Gibbs, J. (2015). Strategies employed by sexual minority adolescents to cope with minority stress. *Psychology of Sexual Orientation and Gender Diversity*, 2(3), 297–306. doi:10.1037/sgd0000124
- *Goodenow, C., Szalacha, L., & Westheimer, K. (2006). School support groups, other school

- factors, and the safety of sexual minority adolescents. *Psychology in the Schools*, 43(5), 573–589. doi:10.1002/pits.20173
- Gould, M., Jamieson, P., & Romer, D. (2003). Media contagion and suicide among the young. *American Behavioral Scientist*, 46(9), 1269–1284. doi:10.1177/0002764202250670
- Graham, R., Berkowitz, B., Blum, R., Bockting, W., Bradford, J., de Vries, B., ... Makadon, H. (2011). *The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding*. Washington, DC: Institute of Medicine.
- Grossman, A. H., Park, J. Y., & Russell, S. T. (2016). Transgender youth and suicidal behaviors: Applying the interpersonal psychological theory of suicide. *Journal of Gay & Lesbian Mental Health*, 20(4), 329–349. doi:10.1080/19359705.2016.1207581
- Haas, A. P., Eliason, M., Mays, V. M., Mathy, R. M., Cochran, S. D., D’Augelli, A. R., ... Clayton, P. J. (2010). Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: Review and recommendations. *Journal of Homosexuality*, 58(1), 10–51. doi:10.1080/00918369.2011.534038
- Hawton, K., Witt, K. G., Salisbury, T. L. T., Arensman, E., Gunnell, D., Townsend, E., ... Hazell, P. (2015). Interventions for self-harm in children and adolescents. *Cochrane Database of Systematic Reviews*, (12), CD012013. doi:10.1002/14651858.CD012013
- *Hatchel, T., Merrin, G. J., & Espelage, D. (2019). Peer victimization and suicidality among LGBTQ youth: The roles of school belonging, self-compassion, and parental support. *Journal of LGBT Youth*, 16(2), 134–156. doi:10.1080/19361653.2018.1543036
- Hatzenbuehler, M. L. (2009). How does sexual minority stigma “get under the skin”? A psychological mediation framework. *Psychological Bulletin*, 135(5), 707–730. doi:10.1037/a0016441
- *Hatzenbuehler, M. L., Birkett, M., Van Wagenen, A., & Meyer, I. H. (2014). Protective school climates and reduced risk for suicide ideation in sexual minority youths. *American Journal of Public Health*, 104(2), 279–286. doi:10.2105/AJPH.2013.301508
- *Hatzenbuehler, M. L., & Keyes, K. M. (2013). Inclusive anti-bullying policies and reduced risk of suicide attempts in lesbian and gay youth. *Journal of Adolescent Health*, 53(1), S21–S26. doi:10.1016/j.jadohealth.2012.08.010
- Herrick, A. L., Stall, R., Goldhammer, H., Egan, J. E., & Mayer, K. H. (2014). Resilience as a research framework and as a cornerstone of prevention research for gay and bisexual men: Theory and evidence. *AIDS and Behavior*, 18(1), 1–9. doi:10.1007/s10461-012-0384-x
- *Hershberger, S. L., & D’Augelli, A. R. (1995). The impact of victimization on the mental health and suicidality of lesbian, gay, and bisexual youths. *Developmental Psychology*, 31(1), 65. doi:10.1037/0012-1649.31.1.65
- *Hershberger, S. L., Pilkington, N. W., & D’Augelli, A. R. (1997). Predictors of suicide attempts among gay, lesbian, and bisexual youth. *Journal of Adolescent Research*, 12(4), 477–497. doi:10.1177/0743554897124004
- *Hightow-Weidman, L. B., Phillips, G., Jones, K. C., Outlaw, A. Y., Fields, S. D., & Smith, J. C., for The YMSM of Color SPNS Initiative Study Group. (2011). Racial and sexual identity-related maltreatment among minority YMSM: Prevalence, perceptions, and the association with emotional distress. *AIDS Patient Care and STDs*, 25(S1), S39–S45. doi:10.1089/apc.2011.9877
- Higgins, J. P. T., & Thompson, S. G. (2003). Quantifying heterogeneity in a meta-analysis. *Statistics in Medicine*, 21(11), 1539–1558. doi:10.1002/sim.86
- Huebner, D. M., Thoma, B. C., & Neilands, T. B. (2015). School victimization and substance use among lesbian, gay, bisexual, and transgender adolescents. *Prevention Science*, 16(5), 734–743. doi:10.1007/s11121-014-0507-x
- Israel, T. (2018). Bisexuality: From margin to center. *Psychology of Sexual Orientation and Gender Diversity*, 5(2), 233. doi:10.1037/sgd0000294
- Joiner, T. E. (2005). *Why people die by suicide*. Cambridge, UK: Harvard University Press.
- Klonsky, E. D., & May, A. M. (2014). Differentiating suicide attempters from suicide ideators: A critical frontier for suicidology research. *Suicide and Life-Threatening Behavior*, 44(1), 1–5. doi:10.1111/sltb.12068
- Kosciw, J. G., Greytak, E. A., Giga, N. M., Villenas, C., & Danischewski, D. (2016). *The 2015 National School Climate Survey: The experiences of lesbian, gay, bisexual, transgender and*

- queer youth in our nation's schools*. New York, NY: Glens.
- Krieger, N. (2001). Theories for social epidemiology in the 21st century: An ecosocial perspective. *International Journal of Epidemiology*, 30(4), 668–677. doi:10.1093/ije/30.4.668
- *Lea, T., de Wit, J., & Reynolds, R. (2014). Minority stress in lesbian, gay, and bisexual young adults in Australia: Associations with psychological distress, suicidality, and substance use. *Archives of Sexual Behavior*, 43(8), 1571–1578. doi:10.1007/s10508-014-0266-6
- Lewis, N. M. (2009). Mental health in sexual minorities: Recent indicators, trends, and their relationships to place in North America and Europe. *Health & Place*, 15(4), 1029–1045. doi:10.1016/j.healthplace.2009.05.003
- Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.
- Liu, R. T., & Mustanski, B. (2012). Suicidal ideation and self-harm in lesbian, gay, bisexual, and transgender youth. *American Journal of Preventive Medicine*, 42(3), 221–228. doi:10.1016/j.amepre.2011.10.023
- *Livingston, N. A., Heck, N. C., Flentje, A., Gleason, H., Oost, K. M., & Cochran, B. N. (2015). Sexual minority stress and suicide risk: Identifying resilience through personality profile analysis. *Psychology of Sexual Orientation and Gender Diversity*, 2(3), 321. doi:10.1037/sgd0000116
- *Lytle, M. C., De Luca, S. M., & Blosnich, J. R. (2014). The influence of intersecting identities on self-harm, suicidal behaviors, and depression among lesbian, gay, and bisexual individuals. *Suicide and Life-Threatening Behavior*, 44(4), 384–391. doi:10.1111/sltb.12083
- Malecki, C. K., & Demaray, M. K. (2002). Measuring perceived social support: Development of the Child and Adolescent Social Support Scale. *Psychology in the Schools*, 39, 1–18. doi:10.1002/pits.10004
- *Marraccini, M. E., & Brier, Z. M. F. (2017). School connectedness and suicidal thoughts and behaviors: A systematic meta-analysis. *School Psychology Quarterly*, 32(1), 5. doi:10.1037/spq0000192
- Marshall, M. P., Dietz, L. J., Friedman, M. S., Stall, R., Smith, H. A., McGinley, J., ... Brent, D. A. (2011). Suicidality and depression disparities between sexual minority and heterosexual youth: A meta-analytic review. *Journal of Adolescent Health*, 49(2), 115–123. doi:10.1016/j.jadohealth.2011.02.005
- Mathy, R. M., Cochran, S. D., Olsen, J., & Mays, V. M. (2011). The association between relationship markers of sexual orientation and suicide: Denmark, 1990–2001. *Social Psychiatry and Psychiatric Epidemiology*, 46(2), 111–117. doi:10.1007/s00127-009-0177-3
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129(5), 674–697. doi:10.1037/0033-2909.129.5.674
- Mustanski, B. (2011). Ethical and regulatory issues with conducting sexuality research with LGBT adolescents: A call to action for a scientifically informed approach. *Archives of Sexual Behavior*, 40(4), 673. doi:10.1007/s10508-011-9745-1
- *Mustanski, B., Andrews, R., Herrick, A., Stall, R., & Schnarrs, P. W. (2014). A syndemic of psychosocial health disparities and associations with risk for attempting suicide among young sexual minority men. *American Journal of Public Health*, 104(2), 287–294. doi:10.2105/AJPH.2013.301744
- *Mustanski, B. S., Garofalo, R., & Emerson, E. M. (2010). Mental health disorders, psychological distress, and suicidality in a diverse sample of lesbian, gay, bisexual, and transgender youths. *American Journal of Public Health*, 100(12), 2426–2432. doi:10.2105/AJPH.2009.178319
- *Mustanski, B., & Liu, R. T. (2013). A longitudinal study of predictors of suicide attempts among lesbian, gay, bisexual, and transgender youth. *Archives of Sexual Behavior*, 42(3), 437–448. doi:10.1007/s10508-012-0013-9
- Mustanski, B., Newcomb, M., & Garofalo, R. (2011). Mental health of lesbian, gay, and bisexual youth: A developmental resiliency perspective. *Journal of Gay & Lesbian Social Services*, 23(2), 204–225. doi:10.1080/10538720.2011.561474
- *Needham, B. L., & Austin, E. L. (2010). Sexual orientation, parental support, and health during the transition to young adulthood. *Journal of Youth and Adolescence*, 39(10), 1189–1198. doi:10.1007/s10964-010-9533-6
- Neff, K. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward

- oneself. *Self and Identity*, 2(2), 85–101. doi:[10.1080/15298860309032](https://doi.org/10.1080/15298860309032)
- O'Brien, K. H. M., Becker, S. J., Spirito, A., Simon, V., & Prinstein, M. J. (2014). Differentiating adolescent suicide attempters from ideators: Examining the interaction between depression severity and alcohol use. *Suicide and Life-Threatening Behavior*, 44(1), 23. doi:[10.1111/sltb.12050](https://doi.org/10.1111/sltb.12050)
- O'Connor, R. C., & Kirtley, O. J. (2018). The integrated motivational-volitional model of suicidal behaviour. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 373(1754), 20170268. doi:[10.1098/rstb.2017.0268](https://doi.org/10.1098/rstb.2017.0268)
- Ougrin, D., Tranah, T., Stahl, D., Moran, P., & Asarnow, J. R. (2015). Therapeutic interventions for suicide attempts and self-harm in adolescents: Systematic review and meta-analysis. *Journal of the American Academy of Child & Adolescent Psychiatry*, 54(2), 97–107. doi:[10.1016/j.jaac.2014.10.009](https://doi.org/10.1016/j.jaac.2014.10.009)
- Paul, J. P., Catania, J., Pollack, L., Moskowitz, J., Canchola, J., Mills, T., ... Stall, R. (2002). Suicide attempts among gay and bisexual men: Lifetime prevalence and antecedents. *American Journal of Public Health*, 92(8), 1338–1345. doi:[10.2105/AJPH.92.8.1338](https://doi.org/10.2105/AJPH.92.8.1338)
- Polanin, J. R., Hennessy, E. A., & Tanner-Smith, E. E. (2017). A review of meta-analysis packages in R. *Journal of Educational and Behavioral Statistics*, 42(2), 206–242. doi:[10.3102/1076998616674315](https://doi.org/10.3102/1076998616674315)
- *Poon, C. S., & Saewyc, E. M. (2009). Out yonder: Sexual-minority adolescents in rural communities in British Columbia. *American Journal of Public Health*, 99(1), 118–124. doi:[10.2105/AJPH.2007.122945](https://doi.org/10.2105/AJPH.2007.122945)
- *Poteat, V. P., Sinclair, K. O., DiGiovanni, C. D., Koenig, B. W., & Russell, S. T. (2013). Gay-straight alliances are associated with student health: A multischool comparison of LGBTQ and heterosexual youth. *Journal of Research on Adolescence*, 23(2), 319–330. doi:[10.1111/j.1532-7795.2012.00832.x](https://doi.org/10.1111/j.1532-7795.2012.00832.x)
- *Reisner, S. L., Biello, K., Perry, N. S., Gamarel, K. E., & Mimiaga, M. J. (2014). A compensatory model of risk and resilience applied to adolescent sexual orientation disparities in nonsuicidal self-injury and suicide attempts. *American Journal of Orthopsychiatry*, 84(5), 545. doi:[10.1037/ort0000008](https://doi.org/10.1037/ort0000008)
- *Remafedi, G., Farrow, J. A., & Deisher, R. W. (1991). Risk factors for attempted suicide in gay and bisexual youth. *Pediatrics*, 87(6), 869–875.
- *Robinson, J. P., & Espelage, D. L. (2011). Inequities in educational and psychological outcomes between LGBTQ and straight students in middle and high school. *Educational Researcher*, 40(7), 315–330. doi:[10.3102/0013189X11422112](https://doi.org/10.3102/0013189X11422112)
- *Russell, S. T., Ryan, C., Toomey, R. B., Diaz, R. M., & Sanchez, J. (2011). Lesbian, gay, bisexual, and transgender adolescent school victimization: Implications for young adult health and adjustment. *Journal of School Health*, 81(5), 223–230. doi:[10.1111/j.1746-1561.2011.00583.x](https://doi.org/10.1111/j.1746-1561.2011.00583.x)
- Russell, S. T., & Toomey, R. B. (2012). Men's sexual orientation and suicide: Evidence for US adolescent-specific risk. *Social Science & Medicine*, 74(4), 523–529. doi:[10.1016/j.socscimed.2010.07.038](https://doi.org/10.1016/j.socscimed.2010.07.038)
- *Ryan, C., Huebner, D., Diaz, R. M., & Sanchez, J. (2009). Family rejection as a predictor of negative health outcomes in white and Latino lesbian, gay, and bisexual young adults. *PEDIATRICS*, 123(1), 346–352. doi:[10.1542/peds.2007-3524](https://doi.org/10.1542/peds.2007-3524)
- Savin-Williams, R. C. (2001). A critique of research on sexual-minority youths. *Journal of Adolescence*, 24(1), 5–13. doi:[10.1006/jado.2000.0369](https://doi.org/10.1006/jado.2000.0369)
- Savin-Williams, R. C., & Ream, G. L. (2003). Suicide attempt among sexual-minority male youth. *Journal of Clinical Child & Adolescent Psychology*, 32(4), 509–522. doi:[10.1207/S15374424JCCP3204_3](https://doi.org/10.1207/S15374424JCCP3204_3)
- *Shadick, R., Dagirmanjian, F. B., & Barbot, B. (2015). Suicide risk among college student: The intersection of sexual orientation and race. *Crisis*, 36(6), 416–423. doi:[10.1027/0227-5910/a000340](https://doi.org/10.1027/0227-5910/a000340)
- *Silenzio, V. M., Pena, J. B., Duberstein, P. R., Cerel, J., & Knox, K. L. (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. doi:[10.2105/AJPH.2006.095943](https://doi.org/10.2105/AJPH.2006.095943)
- Singh, A. A. (2013). Transgender youth of color and resilience: Negotiating oppression and finding support. *Sex Roles*, 68(11–12), 690–702. doi:[10.1007/s11199-012-0149-z](https://doi.org/10.1007/s11199-012-0149-z)

- *Shields, J. P., Whitaker, K., Glassman, J., Franks, H. M., & Howard, K. (2012). Impact of victimization on risk of suicide among lesbian, gay, and bisexual high school students in San Francisco. *Journal of Adolescent Health, 50*(4), 418–420. doi:10.1016/j.jadohealth.2011.07.009
- *Smith, B. C., Armelie, A. P., Boarts, J. M., Brazil, M., & Delahanty, D. L. (2016). PTSD, depression, and substance use in relation to suicidality risk among traumatized minority lesbian, gay, and bisexual youth. *Archives of Suicide Research, 20*(1), 80–93. doi:10.1080/13811118.2015.1004484
- Steinberg, L. (2008). *Adolescence*. New York, NY: McGraw-Hill.
- Taliaferro, L. A., & Muehlenkamp, J. J. (2014). Risk and protective factors that distinguish adolescents who attempt suicide from those who only consider suicide in the past year. *Suicide and Life-Threatening Behavior, 44*(1), 6–22. doi:10.1111/sltb.12046
- Tanner-Smith, E. E., Tipton, E., & Polanin, J. R. (2016). Handling complex meta-analytic data structures using robust variance estimates: A tutorial in R. *Journal of Developmental and Life-Course Criminology, 2*(1), 85–112. doi:10.1007/s40865-016-0026-5
- *Thoma, B. C., & Huebner, D. M. (2013). Health consequences of racist and antigay discrimination for multiple minority adolescents. *Cultural Diversity and Ethnic Minority Psychology, 19*(4), 404. doi:10.1037/a0031739
- Toomey, R. B., & Russell, S. T. (2016). The role of sexual orientation in school-based victimization: A meta-analysis. *Youth & Society, 48*(2), 176–201. doi:10.1177/0044118X13483778
- Toomey, R. B., Ryan, C., Diaz, R. M., Card, N. A., & Russell, S. T. (2010). Gender-nonconforming lesbian, gay, bisexual, and transgender youth: School victimization and young adult psychosocial adjustment. *Developmental Psychology, 46*(6), 1580. doi:10.1037/a0020705
- *Tsypes, A., Lane, R., Paul, E., & Whitlock, J. (2016). Non-suicidal self-injury and suicidal thoughts and behaviors in heterosexual and sexual minority young adults. *Comprehensive Psychiatry, 65*, 32–43. doi:10.1016/j.comppsy.2015.09.012
- *van Bergen, D. D., Bos, H. M., van Lisdonk, J., Keuzenkamp, S., & Sandfort, T. G. (2013). Victimization and suicidality among Dutch lesbian, gay, and bisexual youths. *American Journal of Public Health, 103*(1), 70–72. doi:10.2105/AJPH.2012.300797
- *van Heeringen, C., & Vincke, J. (2000). Suicidal acts and ideation in homosexual and bisexual young people: A study of prevalence and risk factors. *Social Psychiatry and Psychiatric Epidemiology, 35*(11), 494–499. doi:10.1007/s001270050270
- Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner Jr, T. E. (2010). The interpersonal theory of suicide. *Psychological Review, 117*(2), 575. doi:10.1037/a0018697
- Vijayakumar, L., Kumar, M. S., & Vijayakumar, V. (2011). Substance use and suicide. *Current Opinion in Psychiatry, 24*(3), 197–202. doi:10.1097/YCO.0b013e3283459242
- Ward-Ciesielski, E. F., & Linehan, M. M. (2014). Psychological treatment of suicidal behaviors. In M. K. Nock (Ed.), *The Oxford handbook of suicide and self-injury* (pp. 367–384). Oxford, UK: Oxford University Press.
- Wexler, L. M., DiFluvio, G., & Burke, T. K. (2009). Resilience and marginalized youth: Making a case for personal and collective meaning making as part of resilience research in public health. *Social Science & Medicine, 69*, 565–570. doi:10.1016/j.socscimed.2009.06.022
- *Whitaker, K., Shapiro, V. B., & Shields, J. P. (2016). School-based protective factors related to suicide for lesbian, gay, and bisexual adolescents. *Journal of Adolescent Health, 58*(1), 63–68. doi:10.1016/j.jadohealth.2015.09.008
- Veale, J. F., Watson, R. J., Peter, T., & Saewyc, E. M. (2017). Mental health disparities among Canadian transgender youth. *Journal of Adolescent Health, 60*(1), 44–49. doi:10.1016/j.jadohealth.2016.09.014
- Viechtbauer, W. (2010). Conducting meta-analyses in R with the metafor package. *Journal of Statistical Software, 36*(3) doi:10.18637/jss.v036.i03
- *Ybarra, M. L., Mitchell, K. J., Kosciw, J. G., & Korchmaros, J. D. (2015). Understanding linkages between bullying and suicidal ideation in a national sample of LGB and heterosexual youth in the United States. *Prevention Science, 16*(3), 451–462. doi:10.1007/s11121-014-0510-2