

Sexual violence victimization and suicide: Testing a coping-mental health framework

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Abstract

Sexual violence victimization is a prevalent public health concern. However, little research has investigated the factors linking sexual violence victimization to suicidal thoughts and behaviors (STBs). The current study tested the applicability of the psychological mediation framework, a coping-mental health model, for the prevention of STBs among victims of sexual violence. Furthermore, the current study explored whether sexual orientation moderated the progression from sexual violence victimization to STBs. Data were drawn from an online survey of victimization experiences and health ($N = 2175$). Bootstrap mediation tested whether the association of sexual violence victimization and STBs was mediated by emotion regulation strategies (cognitive reappraisal and expressive suppression) and psychopathology (anxiety, depression, and posttraumatic stress disorder). Multiple-groups analysis tested whether links within the mediation effects varied by sexual orientation. Bivariate findings showed that: (1) sexual minority persons were more likely to report sexual violence victimization and (2) cognitive reappraisal was more meaningfully associated with mental health among sexual minority persons. Sexual violence victimization was associated with STBs via a serial mediation through emotion regulation and psychopathology. The association between psychopathology and STBs was stronger among sexual minority compared with heterosexual respondents. Physical violence victimization was associated with STBs for heterosexual but not sexual minority persons in a follow-up model. Findings support an emotion regulation-mental health framework for the prevention of suicide among victims of sexual violence. Research and training implications are discussed.

KEYWORDS

emotion regulation, mental health, psychological mediation framework, sexual minority, sexual orientation, sexual violence, suicide

1 | INTRODUCTION

Sexual violence, defined as “a sexual act that is committed or attempted by another person without freely given consent of the victim or against someone who is unable to consent or refuse” (Basile et al., 2014, p. 11), is significant public health concern. Sexual

violence includes any attempted or completed instance during which an individual is forced to engage in nonconsensual, physical sexual activity (e.g., rape, touching, and groping) through means including violence and physical force, threat and intimidation, and/or drugs and alcohol (Basile et al., 2014). Sexual violence can also include non-contact sexual experiences, such as sexual harassment, or threats of

sexual violence (Basile et al., 2014). One-third of women and one-quarter of men experience lifetime physical sexual violence, with nearly 21.3% of women experiencing a completed or attempted rape and 7.1% of men being forced (either attempted or completed) to penetrate someone else (Smith et al., 2018). Reported rates of sexual violence in the United States doubled from 2017 to 2018 (Morgan & Oudekerk, 2019). These rates may be underestimates of actual incidence of sexual violence, as it is estimated that only 25% of sexual victimization was reported to law enforcement in 2018 (Morgan & Oudekerk, 2019).

Common mental health consequences of victimization include increased symptoms and disorders of anxiety, depression, and posttraumatic stress (PTS), as well as suicidal thoughts and behaviors (STBs; Chen et al., 2010). For example, individuals with a lifetime history of sexual violence victimization (i.e., rape, threatened sexual violence, or non-contact sexual assault) are between 2.5 and 3 times more likely to be diagnosed with anxiety, depression, and PTSD (Chen et al., 2010). Likewise, sexual violence victimization is associated with an approximately four-fold increase in lifetime history of suicide attempt. Compared with other traumatic experiences (e.g., car accident and unexpected death), victims of sexual violence exhibit more severe symptoms of PTSD (Kelley et al., 2009). Furthermore, PTSD and STBs are the psychopathology outcomes most strongly associated with sexual violence victimization (Dworkin et al., 2017). The harmful association of sexual violence victimization on mental health is perhaps more concerning in light of the fact that sexual violence victimization is often part of a larger, well-documented pattern of poly-victimization (e.g., Finkelhor et al., 2009), and that such multiple victimization experiences can further negatively affect mental health (e.g., Finkelhor et al., 2007).

1.1 | Sexual orientation, victimization, and mental health

Certain groups of individuals are disproportionately affected by sexual violence and its associated negative mental health outcomes. Sexual minority (e.g., lesbian, gay, and bisexual) individuals are at increased risk for sexual violence victimization as compared with their heterosexual counterparts (Cramer et al., 2012; Walters et al., 2013). For instance, 46% of bisexual women report a lifetime history of rape, and 47% of bisexual men and 40% of gay men report a lifetime history of sexual violence excluding rape (Walters et al., 2013). In addition, among individuals seeking medical treatment following a violent crime, sexual minority individuals were over twice as likely to report sexual violence victimization compared to heterosexual individuals (Cramer et al., 2012).

Sexual minority persons are also at increased risk for negative mental health outcomes compared with heterosexual persons (Cochran et al., 2003; Institute of Medicine, 2011). Specifically, sexual minority persons are at 1.5 to 2 times increased risk for diagnoses of anxiety, depression, and PTSD (King et al., 2008; Roberts et al., 2010). Further, sexual minority adults are twice as likely to report lifetime suicidal ideation and attempt (King et al., 2008), with

20% of LGB individuals reporting a lifetime history of suicide attempt (Hottes et al., 2016).

Given the high rates of sexual violence among both heterosexual and sexual minority individuals, as well as associated negative mental health outcomes, understanding the linkage between sexual violence and STBs is imperative to inform intervention among victims of sexual violence and thwart the development of psychopathology and STBs. Furthermore, given the increased risk for sexual minority individuals, there may be value in examining how the sexual violence victimization pathway to STBs may vary by sexual orientation. Doing so may provide insight into differential risk factors and intervention efforts for sexual minority versus heterosexual adults.

1.2 | Psychological mediation framework

Despite its importance, the mechanisms through which sexual violence increases STBs is under studied (e.g., Backhaus et al., 2019; DeCou et al., 2019). One conceptual framework that may help to understand the linkage between sexual violence and STBs is the psychological mediation framework (Hatzenbuehler, 2009). The psychological mediation framework, although typically used to understand the impact of minority stressors (e.g., harassment and discrimination) among sexual minority individuals, offers a strategy for understanding how sexual violence increases STBs through its impact on psychosocial functioning and mental health. The framework postulates that stigma-related experiences—both violent and non-violent—contribute to the development of mental health symptoms among sexual minority persons through poor coping/emotion regulation (e.g., rumination and coping motives), interpersonal difficulties (e.g., social isolation), and negative cognitive processes (e.g., hopelessness; Hatzenbuehler, 2009).

Most applications of the psychological mediation framework have examined mental health outcomes among sexual minority persons, including substance use (Fitzpatrick et al., 2020; Lewis et al., 2016), anxiety and depression (Sarno et al., 2020; Schwartz et al., 2016), disordered eating (Wang & Borders, 2017), and overall mental health (Chan & Mak, 2019). Few studies have extended the psychological mediation framework to STBs as the outcome of interest. Staples et al. (2018) examined the linkage between distal minority stress and suicidal ideation among a sample of transgender adults. Internalized negativity related to one's gender identity mediated the relation between distal minority stress and suicidal ideation. Furthermore, Tucker et al. (2019) found that, among a sample of transgender veterans, past-year minority stress increased feelings of shame related to identity, and, in turn, suicidal ideation. Importantly, sexual violence victimization may or may not be experienced as a stigma-related experience (Gentlewarrior, 2009), warranting investigation of the applicability of the psychological mediation framework more broadly among both heterosexual and sexual minority individuals. While this limited research extending the psychological mediation framework to STBs exists, to our knowledge, no published research has examined the linkage between sexual violence and STBs through coping processes such as emotion regulation skills.

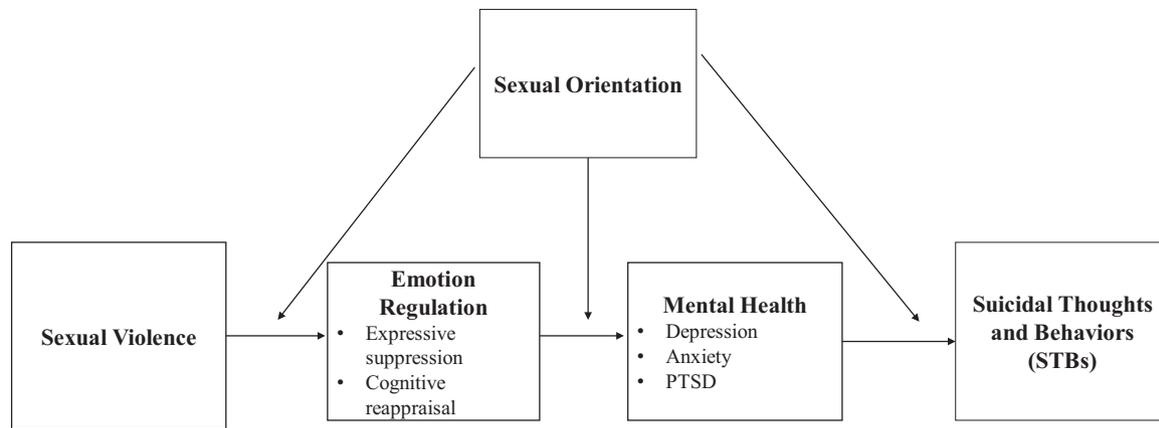


FIGURE 1 Hypothesized coping-mental health framework of sexual violence and suicidal thoughts and behaviors. PTSD, posttraumatic stress disorder

1.3 | Coping as an intermediary between sexual violence victimization and mental health

One potential mechanism within the psychological mediation framework, emotion regulation, may be activated by experiences of sexual victimization and modulate risk for negative mental health outcomes and ultimately, STBs (see Figure 1 for adapted Psychological Mediation Framework for Sexual Violence Victimization tested in the present study). The psychological mediation framework posits that individuals experiencing stigmatizing events may engage in maladaptive emotion regulation strategies such as rumination (i.e., continued focus on distressing experience) and emotional suppression (i.e., not expressing emotions; Hatzenbuehler, 2009). Indeed, sexual minority individuals experiencing stigma-related stressors report higher levels of rumination and emotional suppression and, in turn, greater psychological distress (Hatzenbuehler, 2009).

Similarly, according to Gross's (1998) process model of emotion regulation, following an emotion-provoking event, coping responses including expressive suppression and cognitive reappraisal may be activated. Expressive suppression refers to maladaptive technique to cope with negative feelings by decreasing expressions of emotionality to others. Cognitive reappraisal captures a positive coping technique by re-interpreting the meaning of an emotionally salient event. These emotion regulation strategies are linked with psychopathology and STBs, both broadly and among victims of sexual violence. Expressive suppression tends to exacerbate negative mental health outcomes, whereas cognitive reappraisal is associated with greater well-being and satisfaction with life (Gross & John, 2003). In terms of psychopathology, cognitive reappraisal mitigates the relationship between depression, anxiety, and stress with nonsuicidal self-injury (Richmond et al., 2017). Cognitive reappraisal is also related to reduced STBs (Ong & Thompson, 2019), whereas expressive suppression is related to increased suicidal ideation (Forkmann et al., 2014).

With regard to the current study, as indicated by a systematic review of the literature on coping with sexual violence, both expressive suppression and cognitive reappraisal were coping strategies oft

employed by victims of sexual violence (Walsh et al., 2010). Expressive suppression was associated with poorer mental health outcomes, whereas finding meaning and regaining a sense of control via cognitive reappraisal was associated with better psychological functioning (Walsh et al., 2010). While evidence suggests the utility of emotional regulation strategies in reducing psychopathology and STBs, both broadly and among victims of sexual violence, these specific coping strategies have not been considered in the context of the sexual violence-STBs relation within the psychological mediation framework.

1.4 | The present study

To our knowledge, no published literature has examined sexual violence as a stressor within the psychological mediation framework. Furthermore, few studies have extended the psychological mediation framework to STBs as the outcome of interest (Staples et al., 2018; Tucker et al., 2019). Existing research applying the psychological mediation framework to STBs is among transgender individuals, not sexual minority individuals or, more broadly, heterosexual individuals. A comprehensive model examining mechanisms underlying the linkage between sexual violence victimization and STBs would help identify targets for suicide prevention and serve to address the disproportionate rate of STBs among vulnerable populations (e.g., sexual minority persons, victims of sexual violence, and individuals with mental health disorders). In testing such a model, we surmise that pathways within the model may be stronger or more salient for sexual minority persons (compared to heterosexual counterparts) for three reasons: (1) the psychological-mediation framework was developed with sexual minority persons in mind (Hatzenbuehler, 2009), thereby possibly applying to this group better; (2) sexual violence may be experienced as minority stress (Blondeel et al., 2018); and, therefore (3) if victimization is experienced as minority stress, such stress has been shown to amplify negative coping, symptoms of psychological distress, and STBs (Mongelli et al., 2019; Timmins et al., 2020). We tested such a model through secondary analysis of an existing data set addressing victimization and health among community-dwelling adults and sexually

diverse samples (Cramer et al., 2017). The prior victimization-related assessment generated from these data focused on the intersection of experiences of physical violence victimization with lifetime STBs through latent class analysis. The present study is distinct in its use of the existing victimization and health needs assessment data in that we focus here on sexual violence victimization experience and STBs through application of the psychological mediation framework via serial mediation and multi-groups analysis. The following hypotheses were explored regarding the association of sexual violence victimization and STBs:

H1. *The following significant serial mediation would be observed: (a) sexual violence victimization to emotion regulation strategies (i.e., cognitive reappraisal and expressive suppression); (b) emotion regulation strategies to psychopathology (i.e., symptoms of depression, anxiety, and posttraumatic stress); and (c) psychopathology to STBs (see Figure 1).*

H2. *It is predicted that these linkages will be stronger for sexual minority compared to heterosexual participants.*

2 | METHODS

2.1 | Data and participants

Data were drawn from a large, diverse sample of respondents who participated in an online survey of relational victimization experiences and health. The final analyzable sample in the original study that was used in the present study was 2175 (Cramer et al., 2017)¹. Mean respondent age was 31.17 years ($SD = 13.34$). Nearly two-thirds identified as female (60.5%; $n = 1315$), White (65.6%; $n = 1427$), heterosexual (64.7%; $n = 1407$), and college educated (61.4%; $n = 1462$). Less than half reported an annual household income above \$30,000 (40.7%; $n = 886$). A total of 411 (18.9%) reported lifetime sexual violence victimization and 439 (20.2%) reported lifetime physical violence victimization. The subsample sizes (see procedures section) were as follows: community-dwelling adults ($n = 657$), college student ($n = 702$), and ($n = 816$). Further sample descriptive statistics are reported in detail elsewhere (Cramer et al., 2017).

2.2 | Measures

2.2.1 | Demographics

Participants provided demographic information including age, education, race, and gender. Sexual orientation was assessed using a multiple-choice item (straight, lesbian/gay, bisexual, and other), subsequently collapsed into heterosexual versus sexual minority.

2.2.2 | Sexual and physical violence victimization

Participants self-reported lifetime sexual and physical violence victimization history with a checklist of victimization experiences. Specifically,

respondents self-reported lifetime physical violence victimization history by checking yes to “physical assault” and yes to “sexual assault” from a set of response options answering the following statement: “Have you ever been a victim of any of the following crimes after age 16? (check all that apply).” The use of a sole, binary response option question to query sexual violence or physical victimization status is consistent with previous studies (e.g., Gemberling et al., 2015).

2.2.3 | Emotion regulation

Emotion regulation was measured using the Emotional Regulation Questionnaire (ERQ; Gross & John, 2003), a 10-item self-report questionnaire which examines use of two emotion regulation strategies: cognitive reappraisal and expressive suppression. Cognitive reappraisal (six items) assesses antecedent-focused emotion regulation. Expressive suppression (four items) assesses one's ability to regulate both positive and negative emotions. Items are scored on a 7-point Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”). Subscales scores are generated via summation, with higher scores representing greater use of the emotion regulation strategy. The internal consistency of the cognitive reappraisal ($\alpha = .79$) and expressive suppression ($\alpha = .73$) subscales was acceptable among the current sample.

2.2.4 | Psychopathology

Past week symptoms of depression and anxiety symptoms were assessed using depression (7 items) and anxiety (7 items) subscales of the Depression, Anxiety, Stress Scales-21 (DASS-21; Osman et al., 2012). Items are scored on a 4-point Likert scale ranging from 0 (“does not apply to me at all”) to 3 (“applied to me very much or most of the time”). Subscales scores are generated via summation such that higher scores indicate greater symptoms of depression and anxiety. The internal consistency of the depression ($\alpha = .85$) and anxiety ($\alpha = .81$) subscales was good among the current sample.

Past-month posttraumatic stress disorder symptoms were assessed using the Posttraumatic Stress Disorder Checklist-Civilian for DSM-IV (PCL-C; Weathers et al., 1993), a 17-item self-report questionnaire. The PCL-C assesses symptoms of PTSD, such as disturbing memories or feeling upset, in response to a “stressful experience from the past.” Responses are scored on a 5-point Likert scale ranging from 1 (“not at all”) to 5 (“extremely”). Responses are summed, such that higher scores indicate higher PTSD symptomatology severity. The internal consistency among the current sample was excellent ($\alpha = .94$).

2.2.5 | Suicidal thoughts and behaviors

STBs were assessed using the Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001), a 4-item self-report questionnaire that assess lifetime and past-year suicidal behavior, communication of intent, and likelihood of future suicidal behavior. Items

are scored on a variable Likert scale and summed, such that higher scores indicate greater STBs. Internal consistency among the current sample was acceptable ($\alpha = .76$).

2.3 | Procedures

Respondents were recruited via convenience sampling through three primary streams: (1) a college student psychology department research pool website, (2) Amazon's MTurk sampling of community-dwelling adults, and (3) the National Coalition for Sexual Freedom's (NCSF; a national non-profit devoted to sexual diversity advocacy, education, and legislative action) email listserv and website (Cramer et al., 2017). The study was advertised as an assessment of relational victimization, sexuality, and health. Eligibility was advertised and included respondents being at least 18 years of age and holding a minimum 10th grade education. Persons electing to participate were redirected to the identical SurveyMonkey online questionnaire battery where the first page was an online consent form describing the study purpose, participant rights, risks/benefits, and other standard consent information. Participants affirmed consent by clicking yes to participation. They then encountered the survey in a randomized order as a means to limit systematic missing data. A manipulation check item was included within the survey just after the assessment of emotion regulation; the item instructed respondents to select a specific response option on a Likert scale. Student participants received course research credit and MTurk participants received \$.25 for survey completion. NCSF members completed the survey without an incentive at the preference of the community partner. Data collection was completed between fall 2014 and summer 2015. All procedures were approved by two Institutional Review Boards.

2.4 | Data Analysis

Data missingness for the final sample ($N = 2175$) on scale items of interest was approximately 1.7% or less. Missing data were imputed via person-mean substitution (Hawthorne et al., 2005). Descriptive comparisons of variables of interest were analyzed using t -tests and χ^2 analyses via SPSS v. 26. Cohen's d and Cramer's V effect sizes were reported, respectively (Cohen, 1988). Latent variable modeling via AMOS v.26 was conducted to test the adapted psychological mediation framework. Model fit was determined using guidelines for established fit indices (e.g., Kline, 2016). Bootstrap mediation testing specified whether a mediation effect was present where the 95% Bias Corrected Confidence Interval (95%BC CI) does not include zero (Rucker et al., 2011). We used multiple-groups analysis to test which associations in the mediation model varied by sexual orientation (Byrne, 2004). In light of sexual violence victimization being part of poly-victimization (Finkelhor et al., 2007, 2009), subsequent latent variable modeling was conducted after primary model testing to control for other types of victimization.

3 | RESULTS

3.1 | Descriptive statistics

A total 411 (18.9%) participants reported a sexual violence victimization history and 439 (20.2%) reported lifetime physical violence victimization. Sexual orientation was diverse: heterosexual ($n = 1407$; 64.7%), lesbian/gay (assessed as one response option; $n = 172$; 7.9%), bisexual ($n = 351$; 16.1%), and other sexual minority identities (e.g., pansexual and queer; n range = 2–73; 0.1%–7.3%). Sexual orientation was subsequently dichotomized into heterosexual ($n = 1407$; 64.7%) versus sexual minority ($n = 768$; 35.3%) for primary analyses. Although not ideal, we elected this two-group approach for two reasons. First, severely imbalanced subsamples (e.g., our heterosexual vs. gay/lesbian subsamples) may be under powered and contribute to inappropriate conclusions in invariance testing (Yoon & Lai, 2018). Second, this dichotomization allowed us to answer the basic question whether the mediation pathway applied to both sexual minority (as supported by theory) and heterosexual persons (novel test) equally.

A large significant association was observed between sexual violence victimization and sexual orientation, $\chi^2(1) = 92.39$, $p < .001$, Cramer's $V = .21$. Sexual minority individuals ($n = 230/760$; 30.3%) were more likely to report sexual violence victimization compared with heterosexual individuals ($n = 181/1377$; 13.1%). A large significant association exists between sexual and physical violence victimization reporting in this sample, $\chi^2(1) = 229.62$, $p < .001$, Cramer's $V = .32$. Only a small proportion (245/1519; 13.9%) of those not reporting sexual violence victimization indicated physical violence victimization. On the other hand, a large proportion (194/411; 47.2%) of those who reported sexual violence victimization also reported physical violence victimization.

Table 1 contains a correlation matrix of emotion regulation, psychopathology, and STBs for the whole sample. All associations were significant and in expected directions. Associations between emotion regulation subscales were small, as were emotion regulation associations with psychopathology and STBs. Table 2 contains the same correlation matrix by sexual orientation subgroup. The emotion suppression-cognitive reappraisal association was significant for heterosexual but not the sexual minority subgroup. The cognitive reappraisal associations with

TABLE 1 Full sample emotion regulation, psychopathology, and suicidality correlations

Variable	1	2	3	4	5	6
1. Emotion suppression	–	.11	.22	.17	.23	.10
2. Cognitive reappraisal		–	–.25	–.16	–.10	–.12
3. Depression			–	.63	.61	.49
4. Anxiety				–	.62	.33
5. Posttraumatic stress					–	.47
6. Suicidal thoughts and behaviors						–

Note: **Bold** font denotes $p < .001$.

TABLE 2 Emotion regulation, psychopathology, and suicidality correlations by sexual orientation subgroup

Variable	1	2	3	4	5	6
1. Emotion suppression	-	.19	.20	.17	.19	.09
2. Cognitive reappraisal	-.04	-	-.18	-.10	-.04	-.06
3. Depression	.26	-.37	-	.63	.59	.46
4. Anxiety	.17	-.27	.62	-	.58	.28
5. Posttraumatic stress	.29	-.21	.64	.67	-	.43
6. Suicidal thoughts and behaviors	.14	-.24	.52	.38	-	-

Notes: **Bold** font denotes $p < .001$; **Bold italic** font $p < .05$; Correlations above the diagonal are for the heterosexual subsample; Correlations below the diagonal are for the sexual minority subsample.

psychopathology and STBs were significant and larger for the sexual minority subsample, whereas the associations included nonsignificant findings for the heterosexual subsample (all were smaller than for the sexual minority subsample).

Table 3 contains comparison of emotion regulation, psychopathology and STBs by sexual violence victimization status and sexual orientation. On average, respondents reported subclinical levels of psychopathology and STBs. Compared with nonvictims, sexual violence victims reported higher symptoms of anxiety (small effect), depression (small effect), posttraumatic stress (moderate effect), and STBs (moderate effect). Compared with heterosexual participants, sexual minority participants reported higher symptoms of anxiety (small effect), depression (small effect), posttraumatic stress (small effect), and STBs (moderate effect).

3.2 | Testing the psychological mediation framework with sexual orientation as a moderator

The psychological mediation model displayed adequate fit, $\chi^2(13) = 338.92$, $p < .001$; CFI = .91; RMSEA = 0.10 (95%CI 0.10–0.12); SRMR = 0.05. All emotion regulation (λ range = $-.21$ to $.25$, $p < .001$) and psychopathology (λ range = $.76$ to $.82$, $p < .001$) scores loaded significantly and in expected directions on latent variables. Importantly, the emotion regulation latent factor loaded in such a way that higher scores reflect poor emotion regulation skills. Sexual violence victimization was associated with STBs in the presence of the mediation pathway ($\beta = .16$, $p < .001$). Confirming H1, the pathway from sexual violence victimization to STBs through emotion regulation and psychopathology was significant ($\beta = .10$, $p = .001$, 95% BCCI 0.07–0.13). To account for multiple victimizations, the identical model was rerun with the singular addition of a main effect pathway from physical violence victimization to STBs, thereby controlling for violent victimization history. Model fit decreased with this change, resulting in a model that displayed poor fit, $\chi^2(19) = 61.42$, $p < .001$; CFI = 0.85; RMSEA = 0.12 (95%CI 0.11–0.13); SRMR = 0.09. The main effect of physical violence victimization to STBs was significant ($\beta = .06$, $p < .001$). All other observed effects from the first

TABLE 3 Emotion regulation, psychopathology, and suicidality by sexual violence victimization and sexual orientation

	Overall Sample *M (SD)	SVV**	Non-Vic	t(df)	p value	d	Hetero	SM	t(df)	p value	d
Reappraisal	28.60 (7.93)	28.95 (7.66)	28.51 (7.99)	1.01 (2173)	.31	.05	28.50 (7.95)	28.77 (8.05)	-0.73 (2138)	.46	.03
Emot. Sup.	14.44 (5.44)	14.05 (5.65)	14.53 (5.40)	-1.63 (2173)	.10	-.09	14.47 (5.40)	14.38 (5.58)	0.33 (2151)	.75	-.02
Anxiety	3.62 (3.95)	4.66 (4.46)	3.37 (3.79)	5.99 (2173)	<.001	.31	3.42 (3.77)	3.97 (4.27)	-3.10 (2154)	.002	-.14
Depression	4.72 (4.98)	5.89 (5.59)	4.46 (4.79)	5.28 (2173)	<.001	.27	4.36 (4.65)	5.37 (5.52)	-4.50 (2150)	<.001	-.20
PTS	34.15 (14.82)	41.09 (16.86)	32.53 (13.82)	10.81 (2173)	<.001	.55	32.85 (14.03)	36.51 (15.93)	-5.53 (2165)	<.001	-.24
STBs	6.46 (3.34)	8.23 (3.64)	6.06 (3.13)	12.28 (2173)	<.001	.64	5.69 (2.96)	7.84 (3.66)	-14.60 (2095)	<.001	-.64

Abbreviations: d, Cohen's d; Hetero, heterosexual; Emot. Sup., emotional suppression; M, mean; Non-Vic, non-victim (lifetime); PTS, posttraumatic stress; SD, standard deviation; SM, sexual minority; STBs, suicidal thoughts and behaviors; SVV, sexual violence victim (lifetime).

*N = 2175.

model, including the pathway from sexual violence victimization to STBs through emotion regulation and psychopathology (re-confirming H1), remained significant and in expected directions.

The model was subsequently examined with sexual orientation as a moderator of each of the following links in the psychological mediation pathway: (a) sexual violence victimization to poor emotion regulation strategies; (b) poor emotion regulation strategies to psychopathology; and (c) psychopathology to STBs. The multiple-groups model displayed adequate fit, $\chi^2(26) = 364.85, p < .001$; CFI = 0.91; RMSEA = 0.08 (95%CI 0.07–0.08); SRMR = 0.05. The overall mediation pathway remained significant across sexual orientation subgroups (heterosexual: $\beta = 0.09, p = .001$; sexual minority: $\beta = 0.08, p = .002$). Partially confirming H2, the association between psychopathology and STBs was stronger among sexual minority ($\beta = 0.57, p < .001$) compared with heterosexual respondents ($\beta = .49, p < .001$), $Z = 2.53, p < .001$. Sexual orientation did not moderate other links in the psychological mediation pathway. As with the main model, to account for multiple victimizations, the identical multi-groups model was rerun with the singular addition of a main effect pathway from physical violence victimization to STBs, thereby controlling for violent victimization history. Model fit decreased with this change, resulting in a model that displayed poor-to-marginal fit, $\chi^2(38) = 644.05, p < .001$; CFI = 0.85; RMSEA = 0.09 (95%CI 0.08–0.09); SRMR = 0.07. The main effect of physical violence victimization to STBs was significant for the heterosexual respondents ($\beta = .06, p = .009$), but not for the sexual minority respondents ($\beta = .02, p = .60$). All other observed effects from the first model, including the variation in the psychopathology-STBs link (partially re-confirming H2), remained significant and in expected directions. Figure 2 depicts the final moderated-mediation model.²

4 | DISCUSSION

Sexual violence victimization is a significant public health concern, particularly considering its association with STBs (Chen et al., 2010; Dworkin et al., 2017). However, there is little examination of the mechanisms through which sexual violence victimization exacerbates suicide risk, a necessary step to guide suicide prevention efforts for survivors of sexual violence. To address this gap in the literature, the current study

examined the potential utility of the psychological mediation framework (Hatzenbuehler, 2009) in conceptualizing suicide risk among victims of sexual violence.

Among the current sample, sexual violence victimization was associated with greater STBs through poor emotion regulation and symptoms of psychopathology. These findings suggest that sexual violence victimization may exacerbate risk for STBs due to its impact on emotion regulation and mental health. Indeed, previous research indicates that sexual violence history is related to diminished ability to effectively regulate emotions (Ullman et al., 2014). Past research further indicates that deficits in emotion regulation skills also associated with psychopathology (e.g., Andreotti et al., 2013; Goldsmith et al., 2013). The current study extends this sequelae to STBs via the psychological mediation framework, adding to the growing literature base supporting this framework's applicability to STBs (Staples et al., 2018; Tucker et al., 2019).

The current study sought to extend the psychological mediation framework, designed to examine the impact of minority stress on mental health, to the process of victimization broadly across both heterosexual and sexual minority persons. Per the psychological mediation framework, experiences of discrimination, and victimization related to one's minority identity impact coping and mental health through their impact on internal processes, such as internalized stigma (Hatzenbuehler, 2009). Regarding the linkage between sexual violence victimization and poor emotion regulation, it may be that for victims of sexual violence, internalized shame and stigma related to the victimization experience may negatively impact emotion regulation. Indeed, many victims of sexual violence report shame, guilt, or embarrassment related to sexual violence victimization (Feiring & Taska, 2005; Stoner & Cramer, 2019). Research among victims of childhood sexual assault (CSA) provides further insight into potential mechanisms underlying the trauma-emotional regulation relationship. For example, research among victims of CSA indicates that the linkage between trauma and emotion regulation may have neurobiological underpinnings, as trauma leads to structural and functional neurobiological changes (Cross et al., 2017). Sexual violence may also impact emotional regulation by disrupting attachment patterns, as indicated by research among survivors of CSA (Cloitre et al., 2008; Hébert et al., 2020). Future research further examining factors explaining the adult sexual violence victimization-poor emotion regulation link is warranted.

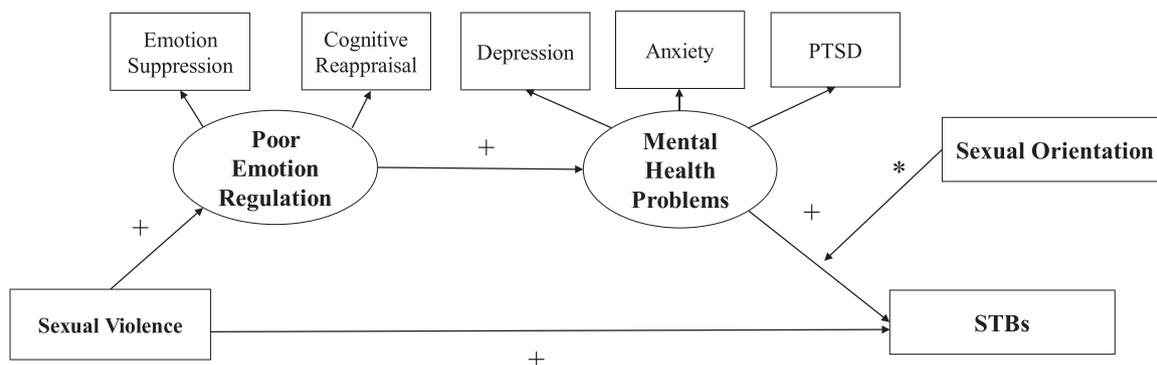


FIGURE 2 Observed moderated-mediation model of sexual violence and suicidal thoughts and behaviors. PTSD, posttraumatic stress disorder; + = significant positive pathway; * = significant moderation effect (pathway stronger for sexual minority individuals)

Furthermore, sexual orientation moderated the linkage between mental health and STBs, such that sexual minority persons demonstrated a stronger association between mental health and STBs. Sexual minority individuals are at increased risk of psychopathology and STBs (IOM, 2011; King et al., 2008). Thus, it is intuitive by extension that the connection between them may be worse for sexual minority persons. Indeed, sexual minority individuals who die by suicide are more likely to have mental health concerns, such as a mental health diagnosis or depressed mood (Lyons et al., 2019). As well, the linkage between psychopathology and STBs may be stronger among sexual minorities due to structural inequalities (e.g., healthcare access, insurance coverage) that can exacerbate risk (Baptiste-Roberts et al., 2017).

Several exploratory findings also emerged worth considering. For instance, the addition of physical violence victimization as a covariate negatively impacted model fit; yet, primary sexual violence victimization-related and sexual orientation multigroups findings held consistent compared with models without violent victimization included. The notion of poly-victimization (Finkelhor et al., 2007, 2009) may provide a future solution to such analytic concerns by assessing victimization subtypes within the same construct. Further testing of the psychological mediation framework may benefit from inclusion of poly-victimization as a driver of coping and mental health.

Additional sexual orientation-based findings were observed. For instance, cognitive reappraisal appeared to possess significant and meaningful bivariate associations with mental health indicators for sexual minority persons compared with heterosexual persons. In the follow-up multigroups analysis, physical violence victimization was associated with STBs for the heterosexual, but not sexual minority, subgroup. Such patterns point to the continued need to move sexual orientation-based research beyond different patterns in mental health disparities toward fuller empirically supported theoretical models of the intersection of victimization, coping skills, and STBs. For example, victimization and sexual orientation may be integrated into existing suicide theories such as the Integrated Motivational-Volitional Model of Suicide (IMV; O'Connor, 2011) as pre-motivational or moderating influences on pathways toward suicidal ideation and behavior.

Findings provide initial empirical evidence supporting an emotion regulation-mental health framework for the prevention of STBs among sexual minority and heterosexual victims of sexual violence. These findings may illuminate future research directions, and areas for competency among individuals providing victimization response services. In terms of research, the current study suggests that the psychological mediation framework may be useful to guide research among both heterosexual and sexual minority samples. Moreover, especially given that sexual violence victimization is one piece of a larger poly-victimization picture for many persons (e.g., Finkelhor et al., 2007, 2009), a next step may be to consider the impact of various forms of victimization on STBs through the psychological mediation pathways. Doing so may utilize tenets of sexual minority mental health models, such as Hatzenbuehler's (2009) complete psychological mediation model, that can be extended to heterosexual samples. Hatzenbuehler's (2009) specific proposed emotion regulation, social (e.g., social norms), and cognitive (e.g., negative self-

schemas) mediation pathways can be examined as explanatory pathways from multiple victimization types of mental health and suicide, with sexual orientation layered on as a moderator. Such designs would provide fuller tests and novel extensions of the psychological mediation framework. In light of the promise of sexual violence victimization fitting within a psychological mediation framework, it may also be worth extending this line of inquiry to clinical intervention development and evaluation. For instance, a psychological mediation perspective on sexual violence victimization may support testing whether bolstering emotion regulation through evidence-based interventions such as Acceptance and Commitment Therapy (ACT; Hayes et al., 2012), Dialectical-Behavior Therapy (DBT; Linehan, 1993), or Emotion Regulation Therapy (ERT; Mennin & Fresco, 2013) may offer clinical utility for victims of sexual violence given their focus on emotion regulation and distress tolerance (e.g., Decker & Naugle, 2008).

Findings from our study, coupled with existing sexual violence victimization, coping, and mental health (e.g., Dworkin et al., 2017; Walsh et al., 2010), also highlight possible competencies for persons working with victims of sexual violence. For instance, individuals providing victimization services, such as emergency room staff, victims' services workers (e.g., rape crisis center staff), and peer support advocates may benefit from education on mental health sequelae associated with sexual violence victimization. In addition, knowledge and application regarding the possible positive impact of emotion regulation on the mental health of sexual violence victims may be helpful for professionals serving sexual violence victims. Incorporating material on positive emotion regulation strategies, such as cognitive reappraisal and emotional expression, as part of training for staff and volunteers may offer a point of intervention to facilitate healthy adaptation for survivors of sexual victimization.

4.1 | Limitations and future directions

Conclusions should be considered in the context of study limitations. Methodological limitations pertain to both design and measurement. The current study used a cross-sectional study design, impeding the examination of temporal sequencing. Therefore, theoretical support of the psychological mediation framework should be understood as tentative. Future longitudinal research is needed to examine the progressive impact of sexual violence victimization, over time, on STBs and the role of emotion regulation and psychopathology on subsequent STBs. Further, data were derived from self-report questionnaires and may be susceptible to recall bias and errors, as well as social desirability (Althubaiti, 2016). Future research should utilize objective measures (e.g., medical records, ecological moment surveying) to strengthen findings. Sexual and physical violence victimization was assessed using a singular question and did not capture cumulative experiences of victimization, or severity of victimization. A number of problems exist with use of single-item responses with binary options and are inconsistent with the strongest survey designs in sexual violence research. For instance, study participants were left to apply their own perceived definition of sexual violence victimization, as this approach does not provide a legally- or behaviorally informed specific definition. Moreover, victimization experiences and

assessment measures (e.g., emotional victimization and psychological harm) are often multi-dimensional in nature; as such, specific sub-components of victimization experiences may be differentially related to emotion regulation, mental health, and STBs. Finally, characteristics of victimization such as frequency and intensity also impact associated health and coping outcomes (e.g., Dworkin et al., 2017). An oversimplified assessment of violent victimization therefore misses important dimensions that may impact the application of the psychological mediation framework in the present study. Future research should measure frequency and severity of sexual violence victimization given their impact on emotion regulation and psychopathology.

In terms of participants, the demographic make-up is restricted. For instance, race and education level were considerably limited to white and higher education. Furthermore, despite a considerable proportion of sexual minority persons, subgroups within the lesbian, gay, bisexual, queer, and other minority community were under-represented with small sample sizes. The small cell counts within certain sexual minority subgroups necessitated collapsing sexual orientation into a binary moderator variable. Such an approach to collapsing sexual orientation identities into two groups contributes to limited assessment of the heterogeneity and multi-dimensional nature of sexual orientation (Beaulieu-Prevost & Fortin, 2015). Future research should diversify sampling and recruitment strategies to construct more representative samples. Moreover, assessments of sexual attraction, fantasy, and behavior would offer multi-dimensional assessment to more fully capture the diversity within the sexual minority community (Beaulieu-Prevost & Fortin, 2015). Finally, future research should extend current findings to vulnerable populations (e.g., transgender individuals and veterans), given differences in sexual violence victimization and STBs across demographic groups (e.g., Adams & Vincent, 2019; Wilson, 2018).

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

PEER REVIEW

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DATA AVAILABILITY STATEMENT

Research data are not shared at the preference of the community partner.

ENDNOTES

¹A total of 2998 persons responded to the survey; however, 823 (8 students, 173 general adults, and 542 NCSF respondents) were dropped either because of complete missing data (i.e., opened the survey link, but did not complete) or failing the manipulation check item.

²Inclusion of significant demographic covariates (i.e., race and education) decreased some indicators model fit, $\chi^2(52) = 611.01, p < .001$; CFI = 0.86; RMSEA = 0.07 (95%CI 0.06–0.07); SRMR = 0.07. All mediation and moderated mediation findings remained consistent with the primary moderated mediation analysis. Therefore, we focus final model interpretation on the one depicted in Figure 2.

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REFERENCES

- Adams, N. J., & Vincent, B. (2019). Suicidal thoughts and behaviors among transgender adults in relation to education, ethnicity, and income: A systematic review. *Transgender Health, 4*(1), 226–246. <https://doi.org/10.1089/trgh.2019.0009>
- Althubaiti, A. (2016). Information bias in health research: Definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare, 9*, 211–217. <https://doi.org/10.2147/JMDH.S104807>
- Andreotti, C., Thigpen, J. E., Dunn, M. J., Watson, K., Potts, J., Reising, M. M., Robinson, K. E., Rodriguez, E. M., Roubinov, D., Luecken, L., & Compas, B. E. (2013). Cognitive reappraisal and secondary control coping: Associations with working memory, positive and negative affect, and symptoms of anxiety/depression. *Anxiety, Stress, and Coping, 26*(1), 20–35. <https://doi.org/10.1080/10615806.2011.631526>
- Backhaus, I., Lipson, S. K., Fisher, L. B., Kawachi, I., & Pedrelli, P. (2019). Sexual assault, sense of belonging, depression and suicidality among LGBQ and heterosexual college students. *Journal of American College Health, 1*–9. <https://doi.org/10.1080/07448481.2019.1679155>
- Baptiste-Roberts, K., Oranuba, E., Werts, N., & Edwards, L. V. (2017). Addressing health care disparities among sexual minorities. *Obstetrics and Gynecology Clinics of North America, 44*(1), 71–80. <https://doi.org/10.1016/j.ogc.2016.11.003>
- Basile, K. C., Smith, S. G., Breiding, M. J., Black, M. C., & Mahendra, R. R. (2014). *Sexual violence surveillance: Uniform definitions and recommended data elements, version 2.0*. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
- Beaulieu-Prevost, D., & Fortin, M. (2015). The measurement of sexual orientation: Historical background and current practices. *Sexologies, 24*, e15–e19. <https://doi.org/10.1016/j.sexol.2014.05.006>
- Blondeel, K., de Vasconcelos, S., García-Moreno, C., Stephenson, R., Temmerman, M., & Toskin, I. (2018). Violence motivated by perception of sexual orientation and gender identity: A systematic review. *Bulletin of the World Health Organization, 96*(1), 29–41L. <https://doi.org/10.2471/BLT.17.197251>
- Byrne, B. M. (2004). Testing for multigroup invariance using AMOS graphics: A road less traveled. *Structural Equation Modeling, 11*, 272–300. https://doi.org/10.1207/s15328007sem1102_8
- Chan, R., & Mak, W. (2019). Cognitive, regulatory, and interpersonal mechanisms of HIV stigma on the mental and social health of men who have sex with men living with HIV. *American Journal of Men's Health, 13*(5), 1557988319873778. <https://doi.org/10.1177/1557988319873778>
- Chen, L. P., Murad, M. H., Paras, M. L., Colbenson, K. M., Sattler, A. L., Goranson, E. N., Elamin, M. B., Seime, R. J., Shinozaki, G., Prokop, L. J., & Zirakzadeh, A. (2010). Sexual abuse and lifetime diagnosis of psychiatric disorders: Systematic review and meta-analysis. *Mayo Clinic Proceedings, 85*(7), 618–629. <https://doi.org/10.4065/mcp.2009.0583>
- Cloitre, M., Stovall-McClough, C., Zorbas, P., & Charuvastra, A. (2008). Attachment organization, emotion regulation, and expectations of support in a clinical sample of women with childhood abuse histories. *Journal of Traumatic Stress, 21*, 282–289. <https://doi.org/10.1002/jts.20339>
- Cochran, S. D., Mays, V. M., & Sullivan, J. G. (2003). Prevalence of mental disorders, psychological distress, and mental health services use among lesbian, gay, and bisexual adults in the United States. *Journal of Consulting and Clinical Psychology, 71*(1), 53–61. <https://doi.org/10.1037//0022-006x.71.1.53>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Routledge Academic.
- Cramer, R. J., Desmarais, S. L., Johnson, K. L., Gemberling, T. M., Nobles, M. R., Holley, S. R., Wright, S., & Van Dorn, R. (2017). The

- intersection of interpersonal and self-directed violence among general adult, college student and sexually diverse samples. *The International Journal of Social Psychiatry*, 63(1), 78–85. <https://doi.org/10.1177/0020764016683728>
- Cramer, R. J., McNiel, D. E., Holley, S. R., Shumway, M., & Boccellari, A. (2012). Mental health in violent crime victims: Does sexual orientation matter? *Law and Human Behavior*, 36(2), 87–95. <https://doi.org/10.1037/h0093954>
- Cross, D., Fani, N., Powers, A., & Bradley, B. (2017). Neurobiological development in the context of childhood trauma. *Clinical Psychology*, 24(2), 111–124. <https://doi.org/10.1111/cpsp.12198>
- Decker, S. E., & Naugle, A. E. (2008). DBT for sexual abuse survivors: Current status and future directions. *The Journal of Behavior Analysis of Offender and Victim Treatment and Prevention*, 1(4), 52–68. <https://doi.org/10.1037/h0100456>
- DeCou, C. R., Kaplan, S. P., Spencer, J., & Lynch, S. M. (2019). Trauma-related shame, sexual assault severity, thwarted belongingness, and perceived burdensomeness among female undergraduate survivors of sexual assault. *Crisis*, 40(2), 134–140. <https://doi.org/10.1027/0227-5910/a000549>
- Dworkin, E. R., Menon, S. V., Bystrynski, J., & Allen, N. E. (2017). Sexual assault victimization and psychopathology: A review and meta-analysis. *Clinical Psychology Review*, 56, 65–81. <https://doi.org/10.1016/j.cpr.2017.06.002>
- Feiring, C., & Taska, L. S. (2005). The persistence of shame following sexual abuse: A longitudinal look at risk and recovery. *Child Maltreatment*, 10(4), 337–349. <https://doi.org/10.1177/1077559505276686>
- Finkelhor, D., Ormond, R. K., & Turner, H. A. (2007). Polyvictimization and trauma in a national longitudinal sample. *Development and Psychopathology*, 19, 149–166. <https://doi.org/10.1017/S0954579407070083>
- Finkelhor, D., Ormond, R. K., & Turner, H. A. (2009). Lifetime assessment of poly victimization in a national sample of children and youth. *Child Abuse & Neglect*, 33, 403–411. <https://doi.org/10.1016/j.chiabu.2008.09.012>
- Fitzpatrick, S., Dworkin, E. R., Zimmerman, L., Javorka, M., & Kaysen, D. (2020). Stressors and drinking in sexual minority women: The mediating role of emotion dysregulation. *Psychology of Sexual Orientation and Gender Diversity*, 7(1), 46–54. <https://doi.org/10.1037/sgd0000351>
- Forkmann, T., Scherer, A., Böcker, M., Pawelzik, M., Guggel, S., & Glaesmer, H. (2014). The relation of cognitive reappraisal and expressive suppression to suicidal ideation and suicidal desire. *Suicide and Life-Threatening Behavior*, 44(5), 524–536. <https://doi.org/10.1111/sltb.12076>
- Gemberling, T. M., Cramer, R. J., Miller, R. S., Stroud, C. H., Noland, R. M., & Graham, J. (2015). Lesbian, gay, and bisexual identity as a moderator of relationship functioning after sexual assault. *Journal of Interpersonal Violence*, 30(20), 3431–3452. <https://doi.org/10.1177/0886260514563834>
- Gentlewarrior, S. (2009). *Culturally competent service provision to lesbian, gay, bisexual and transgender survivors of sexual violence*. VAWnet, a project of the National Resource Center on Domestic Violence. https://vawnet.org/sites/default/files/materials/files/2016-09/AR_LGBTSexualViolence.pdf
- Goldsmith, R. E., Chesney, S. A., Heath, N. M., & Barlow, M. R. (2013). Emotion regulation difficulties mediate associations between betrayal trauma and symptoms of posttraumatic stress, depression, and anxiety. *Journal of Traumatic Stress*, 26(3), 376–384. <https://doi.org/10.1002/jts.21819>
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271–299. <https://doi.org/10.1037/1089-2680.2.3.271>
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348–362. <https://doi.org/10.1037/0022-3514.85.2.348>
- Hatzenbuehler, M. L. (2009). How does sexual minority stigma “get under the skin”? A psychological mediation framework. *Psychological Bulletin*, 135(5), 707–730. <https://doi.org/10.1037/a0016441>
- Hawthorne, G., Hawthorne, G., & Elliott, P. (2005). Imputing cross-sectional missing data: Comparison of common techniques. *Australian & New Zealand Journal of Psychiatry*, 39, 583–590. <https://doi.org/10.1080/j.1440-1614.2005.01630.x>
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2012). *Acceptance and commitment therapy: The process and practice of mindful change* (2nd edition). The Guilford Press.
- Hottes, T. S., Bogaert, L., Rhodes, A. E., Brennan, D. J., & Gesink, D. (2016). Lifetime prevalence of suicide attempts among sexual minority adults by study sampling strategies: A systematic review and meta-analysis. *American Journal of Public Health*, 106(5), e1–e12. <https://doi.org/10.2105/AJPH.2016.303088>
- Hébert, M., Langevin, R., & Charest, F. (2020). Disorganized attachment and emotion dysregulation as mediators of the association between sexual abuse and dissociation in preschoolers. *Journal of Affective Disorders*, 267, 220–228. <https://doi.org/10.1016/j.jad.2020.02.032>
- Institute of Medicine. (2011). *The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding*. The National Academies Press. <https://doi.org/10.17226/13128>
- Kelley, L. P., Weathers, F. W., McDevitt-Murphy, M. E., Eakin, D. E., & Flood, A. M. (2009). A comparison of PTSD symptom patterns in three types of civilian trauma. *Journal of Traumatic Stress*, 22(3), 227–235. <https://doi.org/10.1002/jts.20406>
- King, M., Semlyen, J., Tai, S. S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008). A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatry*, 70(8), 1–17. <https://doi.org/10.1186/1471-244X-8-70>
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.
- Lewis, R. J., Mason, T. B., Winstead, B. A., Gaskins, M., & Irons, L. B. (2016). Pathways to hazardous drinking among racially and socioeconomically diverse lesbian women: Sexual minority stress, rumination, social isolation, and drinking to cope. *Psychology of Women Quarterly*, 40(4), 564–581. <https://doi.org/10.1177/0361684316662603>
- Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford Press.
- Lyons, B. H., Walters, M. L., Jack, S., Petrosky, E., Blair, J. M., & Ivey-Stephenson, A. Z. (2019). Suicides among lesbian and gay male individuals: Findings from the National Violent Death Reporting System. *American Journal of Preventive Medicine*, 56(4), 512–521. <https://doi.org/10.1016/j.amepre.2018.11.012>
- Mennin, D. S., & Fresco, D. M. (2013). Emotion regulation therapy. In J. J. Gross (Ed.), *Handbook of emotion regulation* (Second Edition). Guilford Press.
- Mongelli, F., Perrone, D., Balducci, J., Sacchetti, A., Ferrari, S., Mattei, G., & Galeazzi, G. M. (2019). Minority stress and mental health among LGBT populations: An update on the evidence. *Minerva Psichiatrica*, 60(1), 27–50. <https://doi.org/10.23736/S0391-1772.18.01995-7>
- Morgan, R., & Oudekerk, B. (2019). Criminal Victimization, 2018 (NCJ 253043). U.S. Department of Justice, Bureau of Justice Statistics. <https://www.bjs.gov/content/pub/pdf/cv18.pdf>
- O'Connor, R. C. (2011). The integrated motivational-volitional model of suicidal behavior. *Crisis*, 32, 295–298. <https://doi.org/10.1027/0227-5910/a000120>
- Ong, E., & Thompson, C. (2019). The importance of coping and emotion regulation in the occurrence of suicidal behavior. *Psychological Reports*, 122(4), 1192–1210. <https://doi.org/10.1177/00332941>
- Osman, A., Bagge, C. L., Gutierrez, P. M., Konick, L. C., Kopper, B. A., & Barrios, F. X. (2001). The Suicidal Behaviors Questionnaire-Revised (SBQ-R): Validation with clinical and nonclinical samples. *Assessment*, 8(4), 443–454. <https://doi.org/10.1177/107319110100800409>

- Osman, A., Wong, J. L., Bagge, C. L., Freedenthal, S., Gutierrez, P. M., & Lozano, G. (2012). The Depression Anxiety Stress Scales-21 (DASS-21): Further examination of dimensions, scale reliability, and correlates. *Journal of Clinical Psychology, 68*(12), 1322–1338. <https://doi.org/10.1002/jclp.21908>
- Richmond, S., Hasking, P., & Meaney, R. (2017). Psychological distress and non-suicidal self-injury: The mediating roles of rumination, cognitive reappraisal, and expressive suppression. *Archives of Suicide Research, 21*(1), 62–72. <https://doi.org/10.1080/13811118.2015.1008160>
- Roberts, A. L., Austin, S. B., Corliss, H. L., Vander Morris, A. K., & Koenen, K. C. (2010). Pervasive trauma exposure among US sexual orientation minority adults and risk of posttraumatic stress disorder. *American Journal of Public Health, 100*(12), 2433–2441. <https://doi.org/10.2105/AJPH.2009.168971>
- Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass, 5*(6), 359–371. <https://doi.org/10.1111/j.1751-9004.2011.00355.x>
- Sarno, E. L., Newcomb, M. E., & Mustanski, B. (2020). Rumination longitudinally mediates the association of minority stress and depression in sexual and gender minority individuals. *Journal of Abnormal Psychology, 129*(4), 355–363. <https://doi.org/10.1037/abn0000508>
- Schwartz, D. R., Stratton, N., & Hart, T. A. (2016). Minority stress and mental and sexual health: Examining the psychological mediation framework among gay and bisexual men. *Psychology of Sexual Orientation and Gender Diversity, 3*(3), 313–324. <https://doi.org/10.1037/sgd0000180>
- Smith, S. G., Zhang, X., Basile, K. C., Merrick, M. T., Wang, J., Kresnow, M., & Chen, J. (2018). *The National Intimate Partner and Sexual Violence Survey (NISVS): 2015 data brief— updated release*. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
- Staples, J. M., Neilson, E. C., Bryan, A., & George, W. H. (2018). The role of distal minority stress and internalized transnegativity in suicidal ideation and nonsuicidal self-injury among transgender Adults. *Journal of Sex Research, 55*(4–5), 591–603. <https://doi.org/10.1080/00224499.2017.1393651>
- Stoner, J. E., & Cramer, R. J. (2019). Sexual violence victimization among college females: A systematic review of rates, barriers, and facilitators of health service utilization on campus. *Trauma, Violence & Abuse, 20*(4), 520–533. <https://doi.org/10.1177/1524838017721245>
- Timmins, L., Rimes, K. A., & Rahman, Q. (2020). Minority stressors, rumination, and psychological distress in lesbian, gay, and bisexual individuals. *Archives of Sexual Behavior, 49*(2), 661–680. <https://doi.org/10.1007/s10508-019-01502-2>
- Tucker, R. P., Testa, R. J., Reger, M. A., Simpson, T. L., Shipherd, J. C., & Lehavot, K. (2019). Current and military-specific gender minority stress factors and their relationship with suicide ideation in transgender veterans. *Suicide & Life-Threatening Behavior, 49*(1), 155–166. <https://doi.org/10.1111/sltb.12432>
- Ullman, S. E., Peter-Hagene, L. C., & Relyea, M. (2014). Coping, emotion regulation, and self-blame as mediators of sexual abuse and psychological symptoms in adult sexual assault. *Journal of Child Sexual Abuse, 23*(1), 74–93. <https://doi.org/10.1080/10538712.2014.864747>
- Walsh, K., Fortier, M. A., & Dillillo, D. (2010). Adult coping with childhood sexual abuse: A theoretical and empirical review. *Aggression and Violent Behavior, 15*(1), 1–13. <https://doi.org/10.1016/j.avb.2009.06.009>
- Walters, M. L., Chen, J., & Breiding, M. J. (2013). *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Findings on Victimization by Sexual Orientation*. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
- Wang, S. B., & Borders, A. (2017). Rumination mediates the associations between sexual minority stressors and disordered eating, particularly for men. *Eating and Weight Disorders, 22*(4), 699–706. <https://doi.org/10.1007/s40519-016-0350-0>
- Weathers, F., Litz, B., Herman, D., Huska, J., & Keane, T. (October 1993). The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility. Paper presented at the Annual Convention of the International Society for Traumatic Stress Studies, San Antonio, TX.
- Wilson, L. C. (2018). The prevalence of military sexual trauma: A meta-analysis. *Trauma, Violence & Abuse, 19*(5), 584–597. <https://doi.org/10.1177/1524838016683459>
- Yoon, M., & Lai, M. H. C. (2018). Testing factorial invariance with unbalanced samples. *Structural Equation Modeling, 25*, 201–213. <https://doi.org/10.1080/10705511.2017.1387859>

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