



The Roles of Minority Stress and Thwarted Belongingness in Suicidal Ideation among Cisgender and Transgender/Nonbinary LGBTQ+ Individuals

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ABSTRACT

Rates of suicidal ideation (SI), attempts, and death by suicide are consistently elevated among persons from sexual and gender minority groups relative to the general population. Experiences of minority stress and thwarted belongingness may contribute to elevated risk, and be most pernicious among persons with multiple marginalized identities.

Aim: The present study sought to examine the relation between gender identity (cisgender vs. transgender and nonbinary individuals [TNB]) and recent SI among a convenience sample of lesbian, gay, bisexual, questioning, and queer adults.

Methods: Participants ($N=807$) completed an online survey with measures of minority stress, SI, and thwarted belongingness.

Results: We tested a mediation model in which TNB identity was indirectly associated with SI via minority stress ($\beta=1.94$, $SE=0.30$, Bootstrap 95% CI = [1.39, 2.58]). We also investigated thwarted belongingness as a moderator between minority stress and SI, and found evidence of a two-way interaction ($\beta=0.01$, $SE=0.001$, $p<.001$). The conditional indirect effect of gender identity on SI through minority stress was higher for individuals with higher levels of thwarted belongingness ($\beta=0.07$, $SE=0.02$, Bootstrap 95% CI = [0.04, 0.11]).

Conclusion: Gender identity was indirectly associated with SI through minority stress and elevations in minority stress were associated with more frequent SI. The minority stress and SI association was strongest for participants reporting higher thwarted belongingness. Building and maintaining strong social support networks may be especially important for persons with intersecting gender and sexual minority identities who face minority stress.

KEYWORDS

LGBTQ+; minority stress; suicide

HIGHLIGHTS

- TNB gender identity was indirectly associated with SI via minority stress
- Thwarted belongingness moderated the relation between minority stress and SI
- The minority stress SI relation was strongest at higher thwarted belongingness

A longstanding and robust literature documents that lesbian, gay, bisexual, transgender, questioning, queer, and other sexual and gender minority persons (LGBTQ+) experience multiple health disparities when compared to the general population (Cochran, Mays, & Sullivan, 2003; Institute of Medicine, 2011; King et al., 2008; Meyer, Russell, Hammack, Frost, & Wilson, 2021; Plöderl & Tremblay, 2015). It is particularly troubling that rates of SI, attempts, and death by suicide are consistently elevated among these groups (e.g., Haas et al., 2011; Hottes, Bogaert, Rhodes, Brennan, & Gesink, 2016; King et al., 2008; Mathy, 2002; Yildiz, 2018). Even after controlling for the influence of psychiatric disorders, large-scale population-based research demonstrates that persons belonging to a sexual minority group are two-to-three times more likely to engage in a suicide attempt over their lifespan, compared to heterosexual people (Bolton & Sareen, 2011). Studies conducted with transgender and gender nonconforming individuals report lifetime suicide attempt rates of ~30% to over 40%, depending on the source (Clements-Nolle, Marx, & Katz, 2006; Haas, Rodgers, & Herman, 2014; Marshall et al., 2016; Mustanski, Garofalo, & Emerson, 2010; Nuttbrock et al., 2010; Testa et al., 2012). These troubling figures far outstrip the prevalence estimates of suicide attempts reported in general population surveys (0.4–5% across studies; Borges, Angst, Nock, Ruscio, & Kessler, 2008; Kessler, Borges, & Walters, 1999; Larsson & Sund, 2008; Nock et al., 2008, 2013), and highlight a need to identify specific risk processes for suicide related thoughts and behaviors among sexual and gender minority populations—particularly among transgender and gender nonconforming individuals.

Some researchers propose that the disproportionate burden of suicide-related thoughts and behaviors observed among LGBTQ+ individuals is attributable to *minority stress* (e.g., Baams, Grossman, & Russell, 2015; Hatzenbuehler, Phelan, & Link, 2013; Hendricks & Testa, 2012; Meyer, 2003). According to minority stress theory, societal prejudice, discrimination, and stigma affect the health of sexual and gender minority people through external and internal pathways (Meyer, 2003). Within this framework, expressions of prejudice from external sources (e.g., social rejection, discrimination, harassment, stigmatization by others, lack of access to gender-affirming health care) engender and shape stress processes within marginalized individuals (e.g., internalized homophobia or transphobia, expectations of rejection, and concealment of and shame regarding sexual orientation and gender identity; Hatzenbuehler, 2009; Meyer, 2003). A large and growing body of empirical work has established links between external and internal minority stressors with psychopathology, psychological distress, and suicide-related thoughts and behaviors among sexual and gender minority individuals (see e.g., Baams et al., 2015; Clements-Nolle et al., 2006; Ferlatte, Dulai, Hottes, Trussler, & Marchand, 2015; Hoy-Ellis, 2016; Nuttbrock et al., 2010; Scanlon, Travers, Coleman, Bauer, & Boyce, 2010). Thus, minority stress experiences appear to be an important mechanism increasing suicide risk among LGBTQ+ persons.

One leading model of suicide complements minority stress theory and provides an additional framework for understanding risk elevation among persons belonging to sexual and gender minority groups (Testa et al., 2017). The interpersonal theory of suicide (Joiner, 2005; Van Orden et al., 2010) proposes that *thwarted belongingness* is a proximal mental state that contributes to persons' desire to die by suicide, precedes the development of suicidal ideation (SI), and contributes to its maintenance and severity.

Thwarted belongingness is a painful experience of social disconnection that arises when a person's fundamental need for belonging goes unmet (Baumeister & Leary, 1995; Cacioppo & Patrick, 2008; Joiner, 2005; Ma, Batterham, Calear, & Sunderland, 2019; Van Orden, Cukrowicz, Witte, & Joiner, 2012). This construct has clear ties with minority stressors, which typically involve discrimination, social isolation and rejection, and shame (Meyer, 2003). Empirical work has already demonstrated that thwarted belongingness is associated with self-injurious thoughts and behaviors among LGBTQ+ individuals (Dunlop, Coleman, Hartley, Carter, & Taylor, 2022; Dunlop, Hartley, Oladokun, & Taylor, 2020; Taylor, Dhingra, Dickson, & McDermott, 2020) and that thwarted belongingness mediates the relation between minority stressors and SI in these groups (Baams et al., 2015; Dunlop et al., 2022; Plöderl et al., 2014; Testa et al., 2017). However, extant research has typically examined the relations between minority stress and SI among either gender minority *or* sexual minority individuals, or collapsed sexual and gender minority individuals together. Thus, limited research can speak to the potential effects of minority stress and thwarted belongingness on SI among persons with intersecting gender and sexual minority statuses.

Intersectionality theory is a framework for understanding how characteristics of multiple marginalized identities intersect to create unique and complex profiles of disadvantage (Crenshaw, 1989). Typically, having multiple minority identities generally increases persons' vulnerability prejudice, discrimination, and harm (Crenshaw, 1989). For example, prior research demonstrates that having more than one marker of low socioeconomic status increases odds of suicide attempt in gay and bisexual men (Ferlatte et al., 2018). Likewise, those who identify as transgender *and* a sexual minority (i.e., lesbian, gay, or bisexual), rather than transgender and heterosexual, show elevated risk of engaging in self-injurious thoughts and behaviors (Lytle, Blosnich, & Kamen, 2016). Such findings highlight the need to consider intersecting identities in relation to suicide risk and complement conceptual frameworks that have recently emerged in the literature (e.g., Langwerden, Thompson, & Wagner, 2021; Opara et al., 2020).

The current study used a sample of LGBTQ+ adults to examine the relation between gender identity and recent SI, as mediated by experiences of minority stress. We hypothesized that persons with intersecting gender and sexual minority identities would experience greater minority stress and report higher frequency and severity of SI over the previous month, relative to cisgender persons with sexual minority identities alone. Further, we expected that experiences of minority stress would partially account for the relation between gender identity (cisgender vs. transgender, gender fluid, and gender queer) and SI. We also aimed to examine thwarted belongingness as a potential moderator between minority stress and SI. Specifically, we expected that the strength of the relation between minority stress and SI would increase among participants experiencing higher levels of thwarted belongingness.

MATERIALS AND METHODS

Participants

This study presents secondary data analyses from a broader project conducted with LGBTQ+ adults on outness and SI. The larger project examined a moderated mediation

model in which minority stress was hypothesized to contribute to SI through thwarted interpersonal needs, with outness serving as a moderating variable impacting the association between minority stress and interpersonal needs. Results from the larger project were presented as part of the third author's dissertation, but have not yet been published in a peer-reviewed outlet. A total of 998 individuals were recruited between August 13 and October 6, 2020 via advertisements distributed via social media, online forums, and online affinity spaces (e.g., Facebook groups) and completed the consent to participate in the study. Print flyers were also posted in local settings near Texas Tech University, in which flyers were permissible (e.g., coffee shops). LGBTQ+-focused websites, groups, and email lists were identified as recruitment sources from internet searches, and a recruiting email was sent to moderators and/or managers of those sites for approval and distribution, when allowed. Eligibility criteria were (1) self-identification with LGBTQ+ status, (2) ability to read English, (3) U.S. citizenship and residence, and (4) provision of written informed consent.

With respect to study variables (i.e., gender, thwarted belongingness, SI, and minority stress) and demographic characteristics (i.e., education, race, ethnicity, age, sexual orientation, and relationship status), missing data were missing completely at random, according to Little's MCAR test. Of all consented individuals, 191 were removed from these analyses due to missing data on at least one study variable ($n = 161$), endorsement of heterosexual orientation ($n = 13$), or endorsement of a gender not listed (i.e., "other," $n = 13$), leaving 807 participants for analysis (M age = 27.70, $SD = 9.04$).

Of the examined sample, 548 (67.91%) participants identified as cisgender—the majority of whom were cisgender women ($n = 448$, 81.75%)—and 259 (32.09%) identified as non-cisgender, transgender, gender nonbinary, or gender fluid (TNB). All TNB participants in this sample also identified as a sexual minority. A breakdown of the sample's demographic characteristics can be found in [Table 1](#).

Procedure

Upon interacting with study advertisements, interested persons were directed to a Qualtrics survey displaying the study consent form. Those who provided consent were then directed to a series of surveys and questionnaires. Participants were able to discontinue participation at any time, and were provided a list of online and phone-based mental health resources at the start and end of the study survey. Links to a PDF containing crisis resources and a raffle drawing for participant payment were also included in a footer on each survey page, so entry in the drawing was not contingent on completing the survey. At the end of the survey, or upon clicking the raffle drawing link, participants were presented the option to complete a separate survey in which they could enter their name, email address, and/or phone number to be entered into a drawing for one of several \$50 Amazon gift cards. Gift cards were awarded to 1 out of every 100 participants. Data were kept entirely anonymous and not linked to contact information. Each participant who entered the drawing was assigned a unique identification number, 10 of which (1 per 100 participants or fewer) were randomly chosen using the R "sample" function. These individuals were then contacted by email or phone,

TABLE 1. Demographic characteristics of the sample.

	N (%)
Cisgender	548 (67.91)
TNB gender	259 (32.09)
Nonbinary/GNC	147 (56.76)
Trans woman	28 (10.81)
Trans man	46 (17.76)
Questioning	38 (14.67)
Sexual orientation	
Asexual	59 (7.31)
Bisexual	270 (33.45)
Gay or lesbian	233 (28.87)
Pansexual	74 (9.16)
Queer	127 (15.73)
Questioning	16 (2.00)
Other	28 (3.47)
Race	
Asian	53 (6.66)
Black	29 (3.59)
Hawaiian/PI	4 (0.50)
NA/Alaskan	21 (1.98)
White	712 (88.22)
Other	26 (3.22)
Ethnicity	
Hispanic	100 (12.39)
Non-Hispanic	707 (87.60)
Relationship status	
Single	367 (45.47)
Married	234 (28.99)
Going steady	157 (19.45)
Polyamorous	23 (2.85)
Solo-polyamorous	6 (0.74)
Other	20 (2.47)
Divorced	55 (6.81)
Separated	30 (3.71)
Widowed	3 (0.37)

Note: GNC: gender nonconforming; PI: Pacific Islander; NA: Native American.

depending on their reported preference, to complete a payment form. Their \$50 Amazon gift card was sent via email.

Measures

Demographic data was collected via a measure developed by the fourth author for use in their research lab. Minority stress was assessed via the *LGBT Minority Stress Measure* (Outland, 2016). This 25-item scale measures stress-related components of the minority stress model and includes subscales for: discrimination events (i.e., unfair treatment in various settings such as work or in regard to housing), victimization events (i.e., physical, sexual, and emotional abuse, and violence that an individual receives due to LGBT status), anticipation of rejection (i.e., hypervigilance and persistent worry about being stigmatized for being LGBT), identity concealment (i.e., enacting behaviors to avoid making their LGBT identity apparent to others), internalized anti-LGBT stigma (i.e., negative attitudes people hold toward themselves because of their LGBT identity), everyday discrimination (i.e., microaggressions), and community connectedness (i.e., degree

of connectedness to the LGBT community and its resources). After reverse scoring items on the community connectedness subscale, all items on the scale are summed to create a composite measure of minority stress where higher scores indicate greater minority stress. Cronbach's alpha in the current sample was $\alpha = .89$.

Thwarted belongingness was measured using the *Interpersonal Needs Questionnaire* (INQ; Van Orden et al., 2012). This 15-item scale contains 9 items assessing thwarted belongingness. Items are scored on a 1–7 Likert-type scale (“not at all true of me” to “very true of me”), and summed to create a composite score, where higher scores indicate greater thwarted belongingness. Cronbach's alpha in the current sample was $\alpha = .90$.

Recent SI was assessed via the *Positive and Negative Suicide Ideation Inventory Negative Suicide Ideation subscale* (PANSI-NSI; Osman et al., 1998). The PANSI-NSI includes eight items assessing how participants have felt in the past 2 weeks on a 0–6 Likert-type scale (“none of the time” to “most of the time”). Items are summed to create a composite score with higher scores indicating more frequent SI. Cronbach's alpha in the current sample was $\alpha = .96$.

Analytic plan

For the purposes of this study, participant gender identity was recoded to be dichotomous to reflect cisgender and TNB (i.e., transgender, gender nonconforming, gender fluid, gender queer, or questioning) identities. All analyses were run using IBM SPSS Statistics (Version 27) and descriptive statistics were calculated for all study variables (Tables 1 and 2). We examined correlations between study variables and used independent *t*-tests to determine mean-level differences in minority stress and SI between cisgender and TNB sexual minority participants. We then sequentially tested a mediation model and a moderated mediation model with PROCESS macro (Hayes & Preacher, 2013), using models 4 and 15, respectively. PROCESS uses a bootstrapping approach that maximizes statistical power and is robust to non-normality (Pek, Wong, & Wong, 2018). We used a 95% bias-corrected bootstrap model with 5,000 iterations, yielding confidence intervals that were used to infer significance of model effects (i.e., interval ranges not including

TABLE 2. Clinical characteristics of the sample.

	<i>N</i> (%)			<i>M</i> (<i>SD</i>)		
	Total	Cis	TNB	Total	Cis	TNB
Lifetime SA	199 (24.65)	120 (21.90)	79 (30.50)			
Lifetime SA + Intent	142 (17.59)	83 (15.15)	59 (22.80)			
Lifetime SA (Num)				3.53 (6.62)	2.43 (2.41)	5.75 (10.16)
Lifetime SA (Num) Sex/Gen				1.51 (5.90)	0.50 (0.94)	3.21 (9.06)
Past year SA + intent (Num)				0.16 (0.44)	0.16 (0.44)	0.21 (0.50)
Lifetime NSSI	449 (55.63)	271 (13.89)	178 (68.73)			
Recency, past month NSSI	65 (8.05)	28 (5.11)	37 (14.29)			
Recency, past year NSSI	48 (5.94)	32 (5.84)	16 (6.18)			
Lifetime NSSI (Num)				138.70 (1,247.59)	162.04 (495.76)	

Note: SA: suicide attempt; NSSI: nonsuicidal self-injury. Labels: Lifetime reflects a behavior present at any point in one's life; + intent reflects an intent to die; recency reflects the most recent time participants engaged in each behavior; Sex/Gen reflects a SA that was related to one's sexuality or gender. (Num) denotes the number of times participants engaged in each behavior.

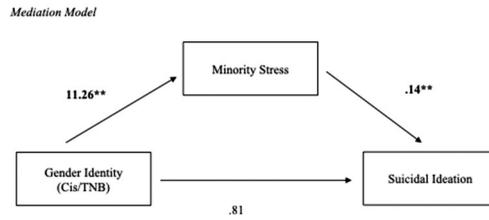


FIGURE 1. Mediation model. Note: Path values represent unstandardized coefficients for the mediation model. ** $p < .001$.

zero are indicative of two-tailed p values $< .05$). We first tested a mediation model in which TNB identity is indirectly associated with SI through minority stress. If significant, we planned to build off our first model to test for moderated mediation, with thwarted belongingness included as a moderator between minority stress and SI (see Figure 1). Direct effects between study variables were also tested within the aforementioned models and are reported as standardized multiple regression coefficients.

RESULTS

Preliminary Analyses

Descriptive statistics and bivariate correlations between study variables are summarized in Table 3. We conducted t -tests to determine if mean minority stress and SI scores differed for cisgender and TNB participants. There was a significant difference in minority stress between cisgender ($M = 52.05$, $SD = 13.32$) and TNB participants ($M = 63.31$, $SD = 15.17$; $t(451.98) = -10.23$, $p < .001$), with the latter group reporting elevated minority stress. SI also significantly differed between cisgender ($M = 12.40$, $SD = 7.04$) and TNB participants ($M = 14.83$, $SD = 8.33$; $t(438.41) = -4.07$, $p < .001$), such that TNB participants reported greater recent SI. The effect size for mean differences for minority stress ($M = -11.26$, $SD = 1.01$, $d = -0.81$) was large, per conventional standards (i.e., $|d| > 0.80$; Cohen, 1988). Although statistically significant, the effect size for mean difference in SI was small ($M = -2.43$, $SD = 0.60$, $d = -0.33$).

Mediation

Results of the examined mediation model indicated positive associations between TNB identity and minority stress (a path: $\beta = 11.26$, $SE = 1.05$, $p < .001$), and between minority stress and SI (b path: $\beta = 0.14$, $SE = 0.02$, $p < .001$). There was no significant direct effect between TNB identity and SI (c' path: $\beta = 0.81$, $SE = 0.58$, $p = .162$); however, we found a significant indirect effect of gender identity on SI through minority stress (c path: $\beta = 1.62$, $SE = 0.28$, Bootstrap 95% CI = [1.10, 2.19]). These results indicate that through experiencing greater minority stress, persons' gender identity was related to elevated SI (see Figure 1).

TABLE 3. Descriptive statistics.

Variable	N	M			SD			Min Total	Max Total
		Total	Cis	TNB	Total	Cis	TNB		
1. MSM	807	55.67	52.05	63.31	14.89	13.32	15.17	25	113
2. PANSI-NSI	807	13.18	12.40	14.83	7.60	7.04	8.33	8	40
3. INQ-TB	807	31.40	30.18	33.96	11.90	11.67	11.98	9	63

Note: MSM: minority stress measure; PANSI NSI: Negative Suicidal Ideation Inventory; INQ-TB: Interpersonal Needs Questionnaire, thwarted belongingness subscale.

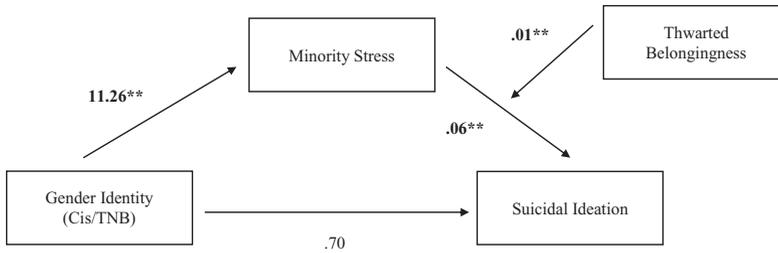
Moderated Mediation Model

FIGURE 2. Moderated mediation model. Note: Path values represent unstandardized coefficients for the moderated mediation model. ** $p < .001$.

Moderated Mediation

After observing indirect effects of minority stress, we tested thwarted belongingness as a potential moderator between minority stress and SI and found evidence of a two-way interaction ($\beta = 0.01$, $SE = 0.001$, $p < .001$). Specifically, the conditional indirect effect of gender identity status on SI through minority stress was significantly higher for individuals with higher levels of thwarted belongingness ($\beta = 0.06$, $SE = 0.02$, Bootstrap 95% CI = [0.03, 0.09]). This model, along with the unstandardized path estimates, is displayed in Figure 2. To further investigate the interaction, we plotted the relation between minority stress and SI across low (i.e., 1 standard deviation below the mean), mean, and high (i.e., 1 standard deviation above the mean) levels of thwarted belongingness (Figure 3). Simple slope tests revealed that minority stress had a significant influence on SI at mean ($\beta = 0.61$, $SE = 0.20$, Bootstrap 95% CI = 0.22, 1.02]) and 1 SD above-the-mean values of thwarted belongingness ($\beta = 1.33$, $SE = 0.33$, Bootstrap 95% CI = [0.69, 1.99]), with stronger effects observed at higher levels. As depicted in Figure 3, this conditional effect disappeared at low (-1 SD mean) levels of thwarted belongingness, indicating that more frequent minority stress is not a significant predictor of SI when persons report low thwarted belongingness.

DISCUSSION

Results of the present study indicate that, in a sample of sexual minority adults, TNB gender identity was indirectly associated with SI through minority stress. As hypothesized, participants reporting both sexual and gender minority status experience greater minority stress as compared to those with sexual minority status alone, and this

Suicidal ideation as a function of minority stress and thwarted belongingness

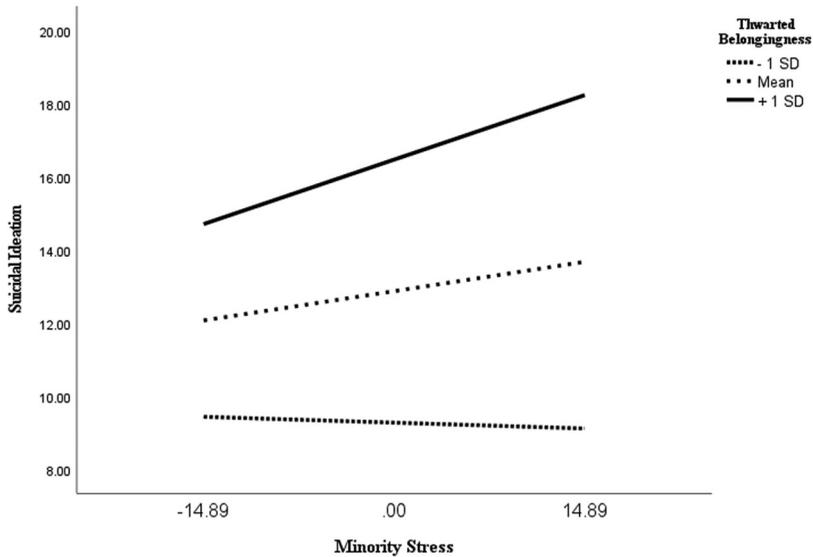


FIGURE 3. Suicidal ideation as a function of minority stress and thwarted belongingness. *Note:* Minority stress and thwarted belongingness variables were mean centered. Values of thwarted belongingness are $-1\ SD = -11.90$, $M = 0.00$, $+1\ SD = 11.90$. The relation between thwarted belongingness and minority stress was statistically significant at all levels of the moderator, with the exception of $1\ SD$ below the mean.

elevation in minority stress was associated with more significant, recent SI. This finding aligns with both minority stress and intersectionality theories, which propose that persons with multiple, intersecting minority identities may experience greater disadvantage (Crenshaw, 1989). In particular, our results extend prior research demonstrating that persons who are transgender and sexual minorities are more likely to engage in self-injurious behaviors than persons who were transgender and heterosexual (Lytle et al., 2016) to the outcome of recent suicidal thinking. Taken together, these findings further highlight the need to examine gender and sexual identity-related stressors as unique, yet potentially compounding indicators of suicide risk.

Consistent with prior research and theory, our results suggest minority stress is associated with elevated suicide risk among transgender, gender queer, gender fluid, and nonbinary persons. Importantly, although associated at a bivariate level, TNB identity status did not significantly predict SI directly when controlling for minority stress. Thus, stressors *accompanying* minoritized gender identities—rather than these identities themselves—are primarily implicated in the relation we observed with suicidality. This fits within the growing literature examining minority stress as a mechanism of suicide risk among LGBTQ+ populations (e.g., Baams et al., 2015; Hatzenbuehler et al., 2013; Hendricks & Testa, 2012; Meyer, 2003).

Also consistent with our hypotheses, we found the relation between minority stress and SI was strongest for participants reporting higher levels of thwarted belongingness. Furthermore, the relation between minority stress and SI was nonsignificant among those reporting relatively low levels of thwarted belongingness. Thus, as persons

increasingly feel a lack of belonging and connection to others, minority stressors appear to become more strongly tied to elevated SI. One interpretation of this data is that LGBTQ+ persons may have more difficulty managing minority stress and be especially vulnerable to experiencing suicidality *when feeling socially disconnected*. Since minority stress shares common elements with thwarted belongingness (e.g., social rejection and/or mistreatment), it is probable that these experiences commonly co-occur and may work in tandem to promote poor outcomes. Although we did not hypothesize that the relation between minority stress and SI would be nonsignificant at low levels of thwarted belongingness, this finding also fits well with prior literature documenting the buffering effects of social support on suicidality (Kleiman and Liu, 2013; Kleiman, Riskind, & Schaefer, 2014). Although low thwarted belongingness does not necessarily indicate strong social support, we can speculate that feeling connected to or supported by others may be somewhat protective against the deleterious effects of minority stress on suicide risk. It is worth noting that the overall moderating effect of thwarted belongingness was statistically significant, yet small (i.e., $\beta = 0.01$). While we observed larger effects at different levels of thwarted belongingness, its *overall* influence on minority stress and SI should be interpreted with some caution. Nevertheless, our results suggest that building and maintaining strong social support networks may be especially important for persons with intersecting gender and sexual minority identities. By examining specific suicide risk processes in minoritized groups, this study builds on prior theoretical work which advocates for integration of minority stress theory into existing models of suicide (Opara et al., 2020).

Of note, our findings contrast with those from a recent study. Rogers, Hom, Janakiraman, and Joiner (2021) conducted an online self-report study focused on sexual minority adults, the majority of whom were cisgender. They found that the relations between (1) greater external minority stressors and greater internalized homophobia, and (2) greater internalized homophobia and greater SI, were each stronger at *higher* levels of LGBT community connectedness (Rogers et al., 2021). The authors also found that general community connectedness as assessed via a measure of thwarted belongingness *did not* moderate the association between greater external minority stressors and greater internalized homophobia, nor did it moderate the association between greater internalized homophobia and more severe SI. The authors hypothesized that their pattern of findings may have been attributable to sexual minority individuals seeking out support from the LGBT community *when* experiencing greater discrimination, harassment, and internalized homophobia (and thus reporting greater community connectedness at those times). In light of this interpretation, it is possible that TNB persons find it more difficult to connect with community supports than sexual minority individuals—either more generally or specifically when feeling discriminated against. This hypothesis, while untested, could explain discrepancies with findings from the current study. Unfortunately, research in this area typically examines LGBTQ+ persons as a homogenous group, with little focus on the unique experiences of TNB individuals (Lewis & Reynolds, 2021). More research is needed to understand the role of social connectedness among specific LGBTQ+ populations.

As with all empirical research, this study suffers a number of notable limitations. First, although the overall sample size was large, it reflects a convenience sample that is not representative of LGBTQ+ persons throughout the United States. For example,

future work targeting youth (under the age of 18), older adult LGBTQ+ people, and racialized persons is sorely needed. Although we examined the intersection of gender and sexual minority status on risk factors for SI, we did not explicitly investigate *how* such experiences interact and influence one another to predict SI. Additionally, we did not consider the potential influence of other important marginalized identities (e.g., racial, ethnic, religious, socioeconomic, disability status), which almost certainly influence minority stress experiences and SI. In keeping with intersectionality theory, future research should examine interactions between additional intersecting minority identities with greater nuance. We were also underpowered to examine combinations of more specific gender and sexual minority identity statuses in relation to study variables (e.g., bisexual identity, gender queer identity, etc.). This is an important area for future study, as minority stress and thwarted belongingness experiences are likely to vary across groups due to differences in cultural/societal acceptability and public understanding. For example, gender identities and sexual orientations that are newer in the public consciousness may be more frequently marginalized, have fewer rights, and a smaller community for support (Lewis et al., 2017).

Our cross-sectional design does not allow us to speak to developmental effects. Although theory and prior empirical work each indicate that minority stress and thwarted belongingness precede and contribute to SI (Joiner, 2005; Rabasco & Andover, 2021; Roeder & Cole, 2019), the direction of effects could not be established in the current sample. Studies using prospective designs would be well-suited to answering questions about whether and under what conditions minority stressors contribute to SI risk and test specific mediational processes influencing this pathway. Another methodological limitation is that all study data were attained via self-report. Although key constructs of interest for this research are most appropriately assessed by the person experiencing them (e.g., SI, minority stress, identity status, thwarted belongingness), method variance may have inflated the observed relations between study variables. Future research that collects informant report and/or behavioral observation data would be helpful for replicating and extending our results. Finally, longitudinal research designs that can prospectively capture suicidal behavior, in addition to SI, will be especially informative, as gender and sexual minority persons may be more likely to transition from thinking about suicide to attempting suicide (Wolford-Clevenger, Frantell, Smith, Flores, & Stuart, 2018).

Limitations notwithstanding, this study also has noteworthy strengths. First, we were able to recruit a large enough sample to meaningfully compare TNB and cisgender sexual minority participants on suicide-related outcomes. Given that most extant research collapses sexual and gender minority persons into a single grouping—and under-samples transgender individuals in particular—this is a relative strength of the current study (e.g., Williams et al., 2021). Further, our measure of SI captured recent (rather than a lifetime history of) suicidal thoughts. As a result, it is plausible that the emergence of minority stress and TB occurred before SI. Finally, our broad recruitment techniques yielded a sample that was geographically diverse and included a wide age span. Thus, our sample is likely more representative than other studies that rely solely on undergraduate participants or recruit within a restricted region.

Findings from the current study align with prior research linking suicide risk to minority stress among sexual and gender minority populations. Our findings also contribute to

this growing body of literature by narrowing in on gender identity status and examining how experiences of thwarted belongingness contribute to SI risk among multiply marginalized groups. This research underscores the need for LGBTQ+ populations to maintain a strong sense of connectedness to others and may ultimately inform prevention efforts to interrupt pathways to suicide for those facing minority stressors.

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DISCLOSURE STATEMENT

The authors report there are no competing interests to declare.

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AUTHOR NOTES

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DATA AVAILABILITY STATEMENT

Raw data are not available to investigators outside of the research team due to conditions specified in the consent form during data collection.

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