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A Daily Diary Study of Intrusive PTSD Symptoms and Suicidal Ideation among Transgender and Gender Diverse Adults

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Abstract

Objective: High rates of trauma exposure and related posttraumatic stress disorder symptoms (PTSS) may partly explain increased suicidal ideation (SI) in transgender and gender diverse (TGD) people. This study examined whether intrusive PTSS are proximally associated with SI among TGD people.

Methods: Daily diary surveys ($n = 836$ surveys; 73.3% compliance rate) were collected over thirty days from a sample of 38 TGD people in the Southeastern United States (Mean age: 28.63 years; 84.2% non-Hispanic White; varying gender identities).

Results: The prevalence of SI and probable diagnosis of posttraumatic stress disorder at baseline was 59.5% and 42.1%, respectively. Of those who met criteria for probable PTSD, 87.5% reported SI at baseline. Multilevel modeling revealed that only depressive symptoms were positively associated with same-day SI. A trend showed a positive association between intrusive PTSS and same-day SI. Prior-day SI and baseline depressive symptoms were the sole correlates of next-day SI.

Conclusion: The present study does not support a proximal association between intrusive PTSS and SI beyond depressive symptoms and prior SI among TGD people. These conclusions are preliminary given the small and homogenous sample. Pending additional research, clinicians should assess suicide risk of TGD people with depressive and PTSD symptoms.

Keywords

gender minority; posttraumatic stress disorder; trauma; suicide

Suicidal ideation (SI) is a significant health disparity among transgender and gender diverse (TGD) individuals (Marshall et al., 2016), with TGD people experiencing a much higher prevalence of SI over their lifetime (55%; Adams, Hitomi, & Moody, 2017) compared to the general population (9.2%; Nock et al., 2008). Posttraumatic stress symptoms (PTSS) are well-documented correlates of SI. A systematic review of fifty studies indicated that PTSD was associated with past and current SI, while controlling for psychiatric disorders such as depression (Krysinska & Lester, 2010). This may partly explain increased SI in the TGD

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population. Indeed, trauma, particularly interpersonal traumas (Grant et al., 2011; Griner et al., 2020; Valentine & Shipherd, 2018) and PTSS (Sherman et al., 2020) are prevalent in the TGD population. Furthermore, TGD people experience unique minority stressors, such as discrimination, that may also impact PTSS and recovery (Livingston et al., 2020; Reisner et al., 2016; Shipherd, Berke, & Livingston, 2019). Nonetheless, very little is known about the association of PTSS with SI among TGD people. Indeed, only one study examined the association between PTSS and SI, demonstrating a positive association in TGD veterans (Lehavot et al., 2016).

Furthermore, there are no published studies on the temporal proximity of PTSS and SI among TGD people. Research has shown that SI and its correlates are dynamic, fluctuating within hours (Kleiman et al., 2017). Identifying factors that could acutely impact SI would be beneficial to understanding the fluctuating risk for suicide in this vulnerable population. However, I could find no studies, including those with TGD people, that examined the proximal association between PTSS and SI. This daily diary study examined whether PTSS, as measured by intrusive PTSS, are proximally associated with same-day and next-day SI in TGD people, while controlling for depressive symptoms at the daily level as well as baseline levels of PTSS, SI, depressive symptoms, and other SI risk factors. I hypothesized that intrusive PTSS would be associated with same-day and next-day SI, while controlling for the aforementioned covariates.

Methods

Participants

Individuals 18 years of age or older and who identified as “Transgender, gender-diverse, of trans experience, or hav[ing] transitioned” were recruited from two mid-sized cities in the Southeastern United States for a pilot, daily diary study examining correlates of SI and behavior. Of individuals who were screened for the study ($n = 68$), 60 (89.6%) were eligible and completed baseline questionnaires ($n = 6$ were ineligible and $n = 2$ did not complete the baseline surveys). Of the individuals completing the baseline measures, 38 (63%) completed at least three daily surveys during the daily diary phase of the study (which I required to be included in the multilevel modeling analyses to improve accuracy of the estimate of the Level-1 slopes). Participants’ average age was 28.63 years. They were majority non-Hispanic White (84.2%). They selected, on average, 3.52 non-mutually exclusive gender identities, with 36.8% on transfeminine spectrum, 47.4% on transmasculine spectrum, and 39.5% gender diverse. See Supplemental Table 1 for a summary of the demographics for the final sample.

Procedures

The Institutional Review Boards of the author at her former and current institution granted approval for the study, which recruited a convenience sample of self-identified TGD adults from two mid-sized cities in the Southeastern region of the United States (Site 1: Knoxville, TN and Site 2: Birmingham, AL). Primarily passive recruitment methods were utilized throughout the community and relevant clinics; study flyers were posted throughout two campuses as well as at local HIV treatment centers, local trans-related events, and local

pages for TGD people on Facebook. Participants were asked to inform their networks about the study. Interested individuals contacted the author via e-mail for a link to the Qualtrics screener or used their phone to scan a QR code which took them to the screener. Participants were screened for eligibility (i.e., over the age of 18, identified as transgender or gender-diverse) and provided informed consent via Qualtrics. They completed a one-hour baseline survey and then provided their e-mail address on a separate survey for the daily diary study phase. Starting the following day, for 30 days, they received a survey link via e-mail at 6 A.M. and a reminder at 12 P.M. Participants reported on their prior day's experience, defined as the time they woke up to the time they went to bed. To maintain anonymity, data were linked using a subject-generated identification code that was only known to the participants. Participation was confidential; however, their survey responses were anonymous. As such, individuals who reported SI could not be intervened upon. Any endorsement of SI on the daily surveys triggered a specific message that encouraged participants to contact the investigator or other resources for assistance. Mental health resources were displayed to all participants at the end of the survey, including the author's phone number; however, no participants contacted her. Participants were compensated a \$5.00 Wal-Mart gift card for the baseline survey, with \$0.50 for each daily survey (\$20 total).

Measures

Demographics were collected via a questionnaire developed for the study. SI occurring over the past week was collected at baseline via the Hopelessness Depression Symptom Questionnaire-Suicidality Subscale (Metalsky & Joiner, 1997). This 4-item self-report survey assesses the frequency, planning, controllability, and impulsive nature of SI on a 4-point Likert Scale. This scale has excellent construct validity (Metalsky & Joiner, 1997) and good internal consistency in the present sample ($\alpha = .87$). The total score was used as a baseline (Level-2) predictor of the Level-1 SI intercept. The total score was also dichotomized (0 = no SI, > 0 = SI) to describe the prevalence of SI at baseline. PTSS occurring over the past month were measured at baseline using the PTSD Checklist-5 (PCL-5). The PCL-5 is a 20-item self-report survey that assesses how much PTSS (all symptom clusters) have bothered participants in the past month on a 5-point Likert scale (0 = not at all to 4 = extremely). The PCL-5 has demonstrated strong construct validity and reliability (Blevins et al., 2015). The total score demonstrated good internal consistency in this sample ($\alpha = .96$). This total score was used as a predictor of SI measured at the daily level. The score was also dichotomized at a cutoff score (> 30 ; Blevins et al., 2015; Bovins et al., 2016) to describe the prevalence of the sample with likely PTSD. Baseline past-week depressive symptoms were measured using the 7-item depression subscale of the Depression Anxiety Stress Scale (Antony et al., 1998). The subscale had good internal consistency in the current sample ($\alpha = .91$).

The Paykel Suicide Scale (PSS; Paykel et al., 1974) assessed SI in the daily surveys. This measure was chosen given its ease of modifying the timeframe. Participants endorsed yes (1) or no (0) to each SI item (e.g., did you feel that life was not worth living; did you think of taking your life, even if you would not really do it?), and these were summed to create a total SI score. Internal consistency of this measure in the sample was marginally acceptable ($\alpha = .66$). The 2-item short form version of the PCL assessed how much they were bothered

by PTSS on a 5-point Likert scale (0 = not at all bothered to 4 = extremely bothered; Lang & Stein, 2005; Lang et al., 2012). The two-item version was selected due to the need for brief assessments in the present study. The two items assessed intrusive symptoms (i.e., repeated, disturbing memories, thoughts, or images of a stressful experience from the past and feeling very upset when reminded of a stressful experience from the past). These two items have the highest correlations with the total score of the 17-item PCL based on the Diagnostic and Statistical Manual of Mental Disorder (DSM-IV) criteria for PTSD (Lang et al., 2012). The two items were summed to create a total score ($\alpha = 0.95$). Depressive symptoms at the daily level were assessed using the depression-dejection subscale of the Profile of Mood States-Short Form (Shacham, 1983). Participants indicated how “hopeless,” “worthless,” and “sad” they felt the day prior on a scale of 0 = “Not at all” to 4 = “Extremely” ($\alpha = 0.91$).

Data Analytic Strategy

First, I examined site differences in baseline SI and PTSS using *t*-tests and in demographic variables using Chi Square tests and analyses of variance. Next, the prevalence of SI and probable PTSD diagnosis at baseline were computed, as well as the prevalence of SI among those with probable PTSD. The frequency and prevalence of SI on the daily surveys was also computed. Finally, Hierarchical Linear Modeling (HLM) version 7, was used to test the hypothesis. Separate null models were conducted with SI and PTSS dependent variables to calculate intraclass correlation coefficients (ICC) to determine between and within person variability. Prior analyses for another research question (under review) found that non-White racial identity and residing with others were associated with Level-1 (within-person) SI; therefore, I included these variables as Level-2 (between-person) predictors of the SI intercept in the multilevel model. I ran a multilevel model testing intrusive PTSS as a Level-1 predictor of SI while controlling for time and depressive symptoms at Level-1 and non-White racial identity, residence with others, baseline SI severity, baseline PTSS severity, and baseline depressive symptom severity as Level-2 predictors of the SI intercept. Full maximum likelihood estimation and random intercepts and fixed slopes were used, and each variable was grand-mean centered.

Results

Out of the 1,140 surveys sent, 836 were completed (73.3% compliance; $M_{surveys\ completed} = 22$, $SD = 8.64$; Range: 26). Participants who continued to the daily surveys did not differ from those who stopped at baseline in demographics and baseline SI ($p > .05$). Sites did not differ in the demographics, PTSS at baseline, PTSS at the daily level, SI at baseline, or SI at the daily level ($p > .05$). Of the final daily diary sample ($n = 38$), 59.5% reported SI and 42.1% met cutoff for probable PTSD at baseline. Of those who met criteria for probable PTSD, 87.5% reported SI at baseline. SI at the daily level occurred on 25% of the completed days. Almost three-quarters (71%) of the sample reported SI at least once during the thirty days. The SI variable revealed positive kurtosis (2.65); thus, a log-transformed version of this variable was used in hypothesis-testing. Regarding variability in SI and intrusive symptoms, intraclass correlation coefficients derived from null models revealed 36% of the variance in SI and 50% of the variance in intrusive PTSS was due to between-person differences. For the hypothesis tests, Level-1 intrusive PTSS were not associated with SI

occurring on the same day, while controlling for the covariates; however, a statistical trend emerged ($p = .12$) suggesting a positive association with same-day SI. Depressive symptoms at the daily level and SI at baseline were associated with same-day SI (See Supplemental Table 2). The identical model using next day SI as the outcome variable revealed that baseline depressive symptoms and prior-day SI predicted next-day SI. Intrusive PTSS were not associated with next day SI (See Supplemental Table 2).

Discussion

This study represents the first, albeit preliminary due to the small sample size, test of the proximal association between intrusive PTSS and SI among TGD people. Both SI and intrusive PTSS showed a high proportion of within-person variability over time, supporting that SI and its correlates fluctuate over short time periods (Kleiman et al., 2017). This underscores the need to study short-term predictors of SI to improve our understanding of risk among TGD people.

Echoing past research (Marshall et al., 2016), the present study revealed a high prevalence and frequency of SI. Also similar to past work with TGD people (Sherman et al., 2020), 41.1% of the sample met cut-off criteria for a probable diagnosis of PTSD at baseline. Although a majority of people with probable PTSD endorsed SI at baseline, intrusive PTSS were not associated with SI in the multilevel models. Depressive symptoms and baseline SI were statistically, positively associated with same-day SI, and prior-day SI and baseline depressive symptoms were the sole correlates of next-day SI. This suggests that depressive symptoms may be more relevant to acute SI than PTSS. However, the overlap in depression and PTSS warrants further investigation. For example, the daily depressive symptoms (i.e., feeling sad, hopeless, and worthless) overlap with the alterations in mood and cognition PTSD cluster. Future work should measure each PTSS cluster and their potential interactions with depressive symptoms.

There are number of limitations to this study. This study did not measure the timing of occurrence of SI and PTSS within the same day. Additionally, there may have been limited power to detect a true association between PTSS and SI. The small, demographically homogenous sample also limits the conclusions that can be drawn from this study. Third variables, such as minority stress, may impact the PTSS-SI association. Finally, there were many measurement issues in the current study (failure to assess Criterion A, failure to assess sex assigned at birth at one site; and inadequate and narrow measurement of key demographics; narrow measurement of daily PTSS). Despite these limitations, these findings provide impetus for future research with larger, more diverse samples and more comprehensive measurement of PTSS and depressive symptoms to examine short-term predictors of SI among TGD people.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Clinical Impact Statements

These preliminary data show a high prevalence of posttraumatic stress symptoms (PTSS) and suicidal ideation in transgender and gender diverse people. Depressive symptoms on a given day may be a stronger indicator of acute suicidal ideation than PTSS. Either symptom presentation should warrant suicide risk assessment and management with transgender and gender diverse patients, particularly given the common co-occurrence of PTSS and depressive symptoms.

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