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Trauma, Minority Stress, and Disproportionate Health Burden Among LGBTQ+ People

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Overview and Orientation

People who identify as lesbian, gay, bisexual, transgender or gender diverse, or queer (LGBTQ+) experience higher rates of trauma compared to their heterosexual and cisgender counterparts (people whose gender is concordant with their sex assigned at birth), perpetrated by systems, institutions, and other people (Shipherd et al., 2019; Hatzenbuehler, 2016; 2009; Meyer, 2003; Meyer, 1995; Hendricks & Testa, 2012; Brooks, 1981). Trauma is a common phrase used to describe minority stressors, which include chronic and daily encounters of persecution and subjugation, less frequent or sporadic instances of discrimination, and more textbook examples of Criterion A trauma as defined by the *Diagnostic and Statistical Manual-5-Text Revision* (*DSM-5-TR*; American Psychiatric Association, 2022). Regardless of their source or severity, trauma and minority stressors all fall within the broader and exogenous "exposome" (Center for Disease Control and Prevention, 2022)—the totality of individuals' environment which exerts top-down influences that manifest psychologically and physiologically. In this *Research Quarterly*, I point to some seminal works that have shaped the course of LGBTQ+ health research over the past several decades. These works include original articulations of minority stress theory, mechanisms of risk that give rise to disproportionate adverse health burden among LGBTQ+ people, as well as more recent developments that signal important areas for future research and applied clinical practice.

Models and Mechanisms of LGBTQ+ Health Disparities

Virginia Brooks (1981) first documented minority stress and its impacts on lesbian women, including the types and outcomes of insidious traumas and their cumulative negative impacts on their felt sense of safety, security, trust, and self-worth, as well as their general economic standing. In what should have been a landmark publication but was unfortunately overlooked until it was recently rediscovered (see Rich, et al., 2020), Dr. Brooks described minority stress as a "state intervening between sequential antecedent stressors of culturally sanctioned, categorically ascribed inferior status, resultant prejudice and discrimination, the impact of these forces on the cognitive structure of the individuals, and consequent readjustment or adaptational failure." (Brooks, 1981; p. 84). In this work, Dr. Brooks proposed a hierarchical and ecological framework to conceptualize minority stress, including articulation of the compounding risks from macro cultural influences, lower-level and immediate system-level and social influences, and their cumulative psychological and "biophysical" effects on the individual.

The prevailing and pioneering "minority stress model", published by Ilan Meyer (2003; 1995), is a sociocultural model that he proposed to account for the already well-known (even then) health disparities that disproportionately impact lesbian, gay, and bisexual individuals. Hendricks & Testa

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Continued from cover

(2012) provided critical updates to Meyer's minority stress model by expanding it to be inclusive of risk and resiliency factors germane to transgender and gender-diverse people. It is important to note that across all models of LGBTQ+ health and disparity, the etiology of pathology exists outside the person ("exposome"). The legacy and maintenance of prejudicial attitudes, laws, and policies that condone or fail to adequately prevent violence against LGBTQ+ people are indeed pathological. LGBTQ+ people are not inherently more likely to experience psychiatric or other medical disorders after considering these macro-, systemic-, and interpersonal-level stressors (Meyer, 2003; 1995; Hendricks & Testa, 2012). Extant minority stress models also converge in their shared characterization of trauma and minority stressors under a common "distal stressors" umbrella, which are the distinguishing etiological antecedents of health disparity among LGBTQ+ people beyond the general stressors that are common across all people (e.g., job loss, divorce, non-bias-related trauma).

Hatzenbuehler (2009) was the first to articulate "how stigma gets under the skin" for LGBTQ+ people. In his mediational framework, Hatzenbuehler outlined and provided empirical support for the mechanisms linking trauma and minority stressors to downstream internalizing and externalizing psychopathology (e.g., depression, anxiety, and substance use disorder), via "general" and "group-specific" intermediary psychological processes. **"General" psychological processes** that help explain the effects of trauma on internalizing/externalizing symptoms include coping and emotion regulation (e.g., rumination, substance use coping motives), social and interpersonal mechanisms (e.g., social isolation, drinking norms), and cognitive processes (e.g., learned hopelessness, negative self-schemas, positive alcohol expectancies). **"Group-specific" processes** include the mechanisms that are activated in response to bias-related trauma and minority stressors, including expectations of rejection, shame (internalized heterosexism/homophobia), and identity concealment. In isolation or in tandem, these mechanisms give rise to the range of internalizing and externalizing symptoms reported and at higher levels among LGBTQ+ people compared to their cisgender and heterosexual counterparts. This seminal article dramatically changed the way LGBTQ+ scholars and clinicians in the field approached LGBTQ+ health research and practice, and hastened progress beyond sociocultural models to intrapsychic models of risk and resilience. Hatzenbuehler (2009) also armed psychological science with insights into cognitive, affective, and behavioral targets of intervention.

It is not as much that trauma and minority stressors lead to one or co-occurring adverse outcomes, but for their potential to activate a wide range of mutually exacerbating processes that have manifold adverse impacts on health among LGBTQ+ people. Syndemic theory refers to the inextricable and mutually reinforcing epidemics within a particular group (e.g., substance use, sexual risk-taking; collectively, **"syndemic burden"**) that can be triggered by stressors that are more prevalent in that group, such as trauma or minority stressors (Mustanski et al., 2007). In an application of syndemic theory, Mustanski and colleagues (2014) found that prior trauma exposure was associated with higher syndemic burden among LGBTQ+ youth (i.e., depression, alcohol use, drug use, intimate partner violence, and sexual risk-taking), which was in turn associated with greater risk of suicide attempt requiring medical attention.

Flentje and colleagues (2020) situated minority stress in the realm of biological markers of disparity in a comprehensive review that highlighted ways that stigma not only "gets under the skin" but also into physiology and genes. Their proposed model outlines a path between **(1) minority stress** (trauma and other distal stressors and proximal stress processes, including concealment, shame), **(2) mechanisms** (epigenetic changes, transcriptional regulation, allostatic overload/dysregulated hypothalamic-pituitary-adrenal [HPA] axis), **(3) biological functions** (inflammation, immune suppression, cardiovascular function, metabolic function, endocrine/hormonal function), and **(4) clinical outcomes** (e.g., cancer, heart disease, infections, diabetes). Flentje et al. (2020) identified key studies documenting empirical associations between exposure to minority stressors and poorer physical health (e.g., self-rated health, sleep, pain); gene expression, suppressed immune response, and increased inflammation; poorer cardiac health and cardiac risk; higher body mass index; greater respiratory problems; and elevated cancer risk, to name a few. Naturally, none of these outcomes occur in a vacuum; an effect on one system is liable to cause downstream effects on others, physical or psychological, and ultimately impact quality of life and, ultimately, life expectancy.

Recent Developments and Future Directions

LGBTQ+ Veterans, psychiatric disparity, and premature death. For those who conduct research or work with Veterans, particularly within Veterans Health Administration (VHA), it is worth stating that recent scholarship highlights clear and marked psychiatric and physiological disparities among LGBTQ+ Veterans compared to their heterosexual and cisgender counterparts. Using cohorts of LGBTQ+ Veterans identified in the VHA electronic medical record using structured (e.g., ICD-9/10, CPT, and procedure codes) and unstructured data (identifiers of LGB identity from written medical notes, using natural language processing), researchers have discovered substantially higher prevalence of PTSD, anxiety disorders, major depressive disorder, bipolar disorder, schizophrenia, substance use disorders, and comorbidity among LGBTQ+ versus non-LGBTQ+ Veterans (Livingston et al., 2022; Shipherd et al., 2021). Livingston and colleagues (2023) expanded on these findings by examining risk for alcohol-attributable death. Comparing over 100,000 LGB Veterans to over 5.3 million non-LGB Veterans, their results highlight staggeringly disparate rates of alcohol-attributable death among LGB individuals and variable years of potential life lost that disfavor LGB individuals. Notably, among the top 10 causes of death among LGB people were alcohol-attributable poisonings, suicides, and homicides. With relevance to the effects of minority stressors and interlocking biological markers of risk, Livingston et al. (2023) also found evidence of disproportionate risk of chronic-cause deaths, via alcohol's impacts on LGB Veterans' organs and systems. Top causes of chronic alcohol-attributable death included liver disease and cancers, among others. Even when these outcomes were of similar or the same rank in LGB and non-LGB Veterans' top 10 causes, LGB Veterans died of these physiological causes at substantially younger ages, as measured in years. It is not at all clear from these findings what the precise or (likely) dynamic biopsychosocial causes of these disparities are, but it is clear that future research is imperative.

Trauma and minority stress as transdiagnostic risk factors. Academic discussion surrounding what is versus what is not considered traumatic, in the diagnostic sense, is a topic of ongoing and necessary debate. In the meantime, this distinction is discussed less frequently and may be of lesser consequence among

those affected. Some minority stressors may not align with the definition of Criterion A trauma, but the impacts of these experiences can share as much or more similarity with Criterion A trauma than dissimilarity (Salomaa et al., 2023; Livingston et al., 2020; Livingston et al., 2019). Even microaggressions, including everyday slights that in/advertently demean LGBTQ+ people, can have both immediate and cumulative effects, including depression, anxiety, and substance use (Livingston et al., 2020; Livingston et al., 2017; Hatzenbuehler, 2009), regardless of, but certainly more pronounced among those with, prior violent victimization exposure and greater identity concealment (Livingston et al., 2020).

Relatedly, in a previous qualitative study of 47 trauma-exposed LGBTQ+ Veterans, participants recounted numerous and overlapping exposures to extreme violence (e.g., sexual assault, threatened at gunpoint, homicide), discrimination, microaggressions, and resultant minority stress from within and outside of the military, and perpetrated at the level of policy (e.g., Don't Ask, Don't Tell and forced removal from the military); by and within systems (e.g., military, medical clinics); and by other people. It was with notable frequency in this study that respondents described other experiences, including discrimination, proximal minority stress, and chronic and pervasive microaggression experiences as "traumatic," even when they did not fit the definition in the diagnostic sense, and the apparent overlap in symptoms across the range of trauma and other stressors reported (Livingston et al., 2019).

One consideration for future research is inclusivity of stressors that are typically regarded as Criterion A trauma and minority stressors that are not. The stressors experienced and reported as traumatic within the LGBTQ+ community vary in intensity, frequency, and kind; and the literature on how these types of experiences impact them relative to experiences that are more traditionally counted as Criterion A trauma is very limited. Another suggestion is for researchers to expand their focus to include routine collection of sexual orientation and gender identity information in their demographic surveys, and to assess a fuller range of psychological and physiological effects of trauma and minority stress, at the very least using self-report ratings. Also important to consider are trauma and health correlates among LGBTQ+ people across intersecting racial and ethnic identities, age, and by geography and socioeconomic status.

Implications for treatment delivery and adaptation.

Fortunately, the modal response to trauma is resilience and overcoming (Galatzer-Levy, et al., 2018). Indeed, the works of scholars described above acknowledge that LGBTQ+ peoples' reactions to trauma and minority stressors are proportional to these stressors and reflect adaptations that can confer clear and immediate survival advantage. For example, while the circumstances requiring it are categorically unjust, concealing an LGBTQ+ identity to prevent violent victimization may have a clear advantage. With respect to both research and treatment, this is a necessary consideration to bear in mind to prevent over-pathologizing reasonable and often necessary adaptations to clear and extreme stress, particularly among LGBTQ+ people who remain in active or looming threat situations (Livingston et al., 2020). On the other hand, these often-necessary adaptations can and do have significant negative consequences, including social isolation, shame, vigilance, suspiciousness, and clinically significant depression and anxiety, regardless of their safety functions, and may be or become critical intervention targets in therapy. As an important aside, "concealable stigma" is one thing that distinguishes LGBTQ+ people from other minoritized people (e.g., compared to race, ethnicity), for whom public concealment is not possible. These processes are articulated clearly in the minority stress models described above, as well as by Pachankis' Cognitive-Affective-Behavioral model of identity concealment (Pachankis, 2007).

The invisibility of LGBTQ+ people in published reports from clinical trial outcome studies calls into question the sufficiency or even the appropriateness of existing evidence-based interventions for LGBTQ+ people, including gold-standard trauma-focused treatments. The most efficacious of these treatments place primacy on trauma processing, cognitive-affective reprogramming, and habituation to trauma cues as mechanisms of recovery. However, absent most therapy protocols is appropriate and affirming language to use when working with LGBTQ+ patients, recommendations for understanding and taking into account any of the above-mentioned minority stressors or their impacts, guidance on working with oppressed people in active threat situations (e.g., identifying if/when patients are describing vigilance or hypervigilance, and what to do about either/both), or how to adapt the treatment when these concomitant stressors rightfully and necessarily disrupt adherence to the protocol (Livingston et al., 2020; Livingston et al., 2019; Shipherd et al., 2019).

Concrete and specific areas for future intervention development or adaptation include (1) time-limited and transdiagnostic interventions that are trauma-informed and capable of centering minority stress directly (e.g., expressive writing interventions, currently being adapted by Dr. Kelly Harper, National Center for PTSD); (2) minority stress-tailored adaptations to existing evidence-based protocols, like Cognitive Processing Therapy and Prolonged Exposure; and (3) innovations that expand the reach of evidence-based self-help via technology (e.g., online treatments, apps) to circumvent barriers to healthcare access and quality for LGBTQ+ people. Vitally important to any of these developments is to ensure LGBTQ+ community participation and stakeholder involvement in their co-creation, evaluation, and dissemination.

Thoughtful attention toward balancing exposure and processing with skill building will prove useful as well. For many LGBTQ+ people, overcoming trauma includes developing skills that go beyond the standard set of skills emphasized in trauma-focused therapies. A short but by no means complete list of recommendations include fostering self-empowerment (including psychological, social, and physical self-empowerment—e.g., self-defense training), social and community support building, and emotion-regulation to prevent incidence or worsening of other outcomes in response to minority stress (e.g., substance use, suicide attempt). In the meantime, suggestions for screening/assessment, case conceptualization, and interventions that are LGBTQ+ affirming, patient-centered, and inclusive of trauma and minority stress-related concerns are outlined in Livingston et al. (2020) and Shipherd et al. (2019).

Conclusion

Available evidence on the drivers of disproportionate health burden among LGBTQ+ people, including psychiatric and medical disparity, comorbidity, and premature death, points unequivocally to the deleterious effects of trauma and minority stress. The sources of these stressors span macro- (e.g., laws and policies), systemic- (e.g., schools, healthcare systems), and interpersonal levels. Fortunately, sources of support and resilience also exist across

these domains, which can be leveraged to affirm LGBTQ+ people and prevent risk of adverse health outcomes (Shipherd et al., 2019). Future research is vital to improve the applicability and precision of the minority stress model described in this review, to increase our collective understanding of interlocking minority stressors and their transdiagnostic impacts on health. Continued efforts on these fronts will assuredly accelerate progress toward clearer understanding risk as well as inform the necessary system- and individual-level interventions needed to offset disparity, including the development and adaptation of tailored patient-centered treatments that target trauma and concomitant minority stress.

FEATURED ARTICLES

Brooks V.R. (1981). *Minority Stress and Lesbian Women.* Lexington, MA: Lexington Books.

Flentje, A., Heck, N. C., Brennan, J. M., & Meyer, I. H. (2020). **The relationship between minority stress and biological outcomes: A systematic review.** *Journal of Behavioral Medicine, 43*(5), 673–694. doi:10.1007/s10865-019-00120-6 Sexual minority (non-heterosexual) individuals experience higher rates of physical health problems. Minority stress has been the primary explanatory model to account for this disparity. The purpose of this study was to identify in published research empirically established relationships between minority stress processes and biological outcomes and identify avenues for future research. The PubMed database was queried with search terms relevant to minority stress and a comprehensive list of physical and biological outcomes. To be included in the analysis, studies had to examine the relationship between minority stress and a biological outcome among sexual minority individuals. Those meeting inclusion criteria were coded for key variables including methodology used, positive and null results, participant characteristics, and specific minority stress processes and biological outcomes considered. In total, 26 studies met inclusion criteria. Studies tested relationships between specific minority stress processes including prejudice, expectations of prejudice, concealment of sexual orientation, and internalized stigma and multiple biological outcomes, such as overall physical health, immune response, HIV-specific outcomes, cardiovascular outcomes, metabolic outcomes, cancer-related outcomes, and hormonal outcomes. Studies included both analyses that detected this relationship (42% of analyses) and analyses that did not detect this relationship (58%). There is substantial evidence to support the relationship between minority stress and biological outcomes, yet additional research is needed to identify the measurements and outcomes that have the most rigorous and replicable results.

Galatzer-Levy, I. R., Huang, S. H., & Bonanno, G. A. (2018). **Trajectories of resilience and dysfunction following potential trauma: A review and statistical evaluation.** *Clinical Psychology Review, 63,* 41–55. doi:10.1016/j.cpr.2018.05.008 Given the rapid proliferation of trajectory-based approaches to study clinical consequences to stress and potentially traumatic events (PTEs), there is a need to evaluate emerging findings. This review examined convergence/divergences across 54 studies in the nature and prevalence of response trajectories, and determined potential sources of bias to improve future research. Of the 67 cases that emerged from the 54 studies, the most consistently observed trajectories following PTEs were resilience (observed in: n = 63 cases), recovery (n = 49), chronic (n = 47), and delayed onset (n = 22). The resilience trajectory was the modal response across studies (average of 65.7% across populations, 95% CI [0.616, 0.698]), followed in prevalence by recovery (20.8% [0.162, 0.258]), chronicity (10.6%, [0.086, 0.127]), and delayed onset (8.9% [0.053, 0.133]). Sources of heterogeneity in estimates primarily resulted from substantive population differences rather than bias, which was observed when prospective data is lacking. Overall, prototypical trajectories have been identified across independent studies in relatively consistent proportions, with resilience being the modal response to adversity. Thus, trajectory models robustly identify clinically relevant patterns of response to potential trauma, and are important for studying determinants, consequences, and modifiers of course following potential trauma.

Hatzenbuehler M. L. (2009). **How does sexual minority stigma "get under the skin"? A psychological mediation framework.** *Psychological Bulletin, 135*(5), 707–730. doi:10.1037/a0016441 Sexual minorities are at increased risk for multiple mental health burdens compared with heterosexuals. The field has identified 2 distinct determinants of this risk, including group-specific minority stressors and general psychological processes that are common across sexual orientations. The goal of the present article is to develop a theoretical framework that integrates the important insights from these literatures. The framework postulates that (a) sexual minorities confront increased stress exposure resulting from stigma; (b) this stigma-related stress creates elevations in general emotion dysregulation, social/interpersonal problems, and cognitive processes conferring risk for psychopathology; and (c) these processes in turn mediate the relationship between stigma-related stress and psychopathology. It is argued that this framework can, theoretically, illuminate how stigma adversely affects mental health and, practically, inform clinical interventions. Evidence for the predictive validity of this framework is reviewed, with particular attention paid to illustrative examples from research on depression, anxiety, and alcohol-use disorders.

Hatzenbuehler M. L. (2016). **Structural stigma: Research evidence and implications for psychological science.** *American Psychologist, 71*(8), 742–751. doi:10.1037/amp0000068 Psychological research has provided essential insights into how stigma operates to disadvantage those who are targeted by it. At the same time, stigma research has been criticized for being too focused on the perceptions of stigmatized individuals and on microlevel interactions, rather than attending to structural forms of stigma. This article describes the relatively new field of research on structural stigma, which is defined as societal-level conditions, cultural norms, and institutional policies that constrain the opportunities, resources, and well-being of the stigmatized. I review emerging evidence that structural stigma related to mental illness and sexual orientation (a) exerts direct and synergistic effects on stigma processes that have long been the focus of psychological inquiry (e.g., concealment, rejection sensitivity), (b) serves as a contextual moderator of the efficacy of psychological interventions, and (c) contributes to numerous adverse health outcomes for members of stigmatized groups—ranging from dysregulated physiological stress responses to premature mortality—indicating that structural stigma represents an underrecognized mechanism producing health inequalities. Each of these pieces of evidence suggests that structural stigma is relevant to psychology and therefore

deserves the attention of psychological scientists interested in understanding and ultimately reducing the negative effects of stigma.

Hendricks, M. L., & Testa, R. J. (2012). **A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the Minority Stress Model.** *Professional Psychology: Research and Practice, 43*(5), 460–467. doi:10.1037/a0029597 In the last few years, transgender and gender nonconforming people have become more visible in our society, which has sparked a marked increase in awareness, interest, and attention among psychologists. Questions have emerged about the extent to which psychologists are able to work competently with this population. This article presents a framework for understanding key clinical issues that psychologists who work with transgender and gender-nonconforming individuals will likely encounter in their clinical work. This article does not address the knowledge and skills required to provide services related to gender transition, but rather to provide other psychological services that these clients may need, in light of the high levels of gender-related victimization and discrimination to which they are exposed. An adaptation of the Minority Stress Model (Meyer, 2003) is presented and translated to incorporate the unique experiences encountered by transgender and gender-nonconforming individuals. In particular, we examine adverse experiences that are closely related to gender identity and expression, resulting expectations for future victimization or rejection, and internalized transphobia. The impact of Minority Stress Model factors on suicide attempts is presented as a detailed example. Mechanisms by which transgender and gender-nonconforming persons develop resilience to the negative psychological effects of these adverse experiences are also discussed. Recommendations for clinicians are then made to assist psychologists in developing competence in working with this population.

Livingston, N. A., Gatsby, E., Shipherd, J. C., & Lynch, K. E. (2023). **Causes of alcohol-attributable death and associated years of potential life lost among LGB and non-LGB veteran men and women in Veterans Health Administration.** *Addictive Behaviors, 139,* 107587. doi:10.1016/j.addbeh.2022.107587 *Background:* Alcohol use is a significant concern nationally and research now highlights higher rates of alcohol attributable death (AAD) and years of potential life lost (YPLL) among lesbian, gay, and bisexual (LGB) veterans compared to non-LGB veterans. In this study, we examined specific causes of AAD and associated YPLL between LGB and non-LGB veteran men and women to highlight needed outreach, prevention, and treatment strategies. *Methods:* Using data from the nationwide Veterans Health Administration electronic health record and National Death Index from 2014 to 2018, we examined the top ten ranked causes of AAD among LGB (n = 102,085) and non-LGB veteran (n = 5,300,521) men and women, as well as associated YPLL per AAD. *Results:* We observed higher rates of AAD among men than women, but higher rates among LGB veterans relative to their same-sex non-LGB counterparts. We noted greater YPLL per AAD among LGB men and all women compared to non-LGB men, even when of similar or same rank in cause of death. Acute-cause AAD death (e.g., alcohol-related suicide, poisonings) was ranked higher among LGB men and all women. YPLL was greater for both acute- and chronic-cause AAD (e.g., liver disease) among LGB men and all women compared to non-LGB men. *Conclusions:* Causes of AAD differ between LGB and non-LGB men and women. The differences observed highlight disparities in acute- and chronic-cause AAD between groups help explain the higher number of YPLL per AAD that disfavor LGB men and women veterans, and essential next steps in primary and secondary prevention of hazardous drinking and mortality risk.

Livingston, N.A., Berke, D.S., Ruben, M.A., Matza, A.R., Shipherd, J.C. (2019). **Experiences of trauma, discrimination, microaggressions, and minority stress among trauma-exposed LGBT veterans: Unexpected findings and unresolved service gaps.** *Psychological Trauma: Theory, Research, Practice, and Policy, 11*(7), 695–703. doi:10.1037/tra0000464 *Objective:* LGBT veterans experience high rates of trauma, discrimination, and minority stress. However, guidelines for case conceptualization and treatment remain limited. The aim of the current study was to examine the experiences of trauma and other high-impact experiences among LGBT veterans to inform case conceptualization and treatment. *Method:* We recruited 47 LGBT veterans with a history of exposure to LGBT-related Criterion A trauma and performed semistructured interviews about their experiences in trauma treatment, barriers to engagement, and treatment needs and preferences. We used thematic analysis of qualitative codes guided by inductive and deductive approaches to characterize the variety of trauma and high impact experiences reported. *Results:* LGBT veterans disclosed a range of clinically relevant stressors, including Criterion A traumatic events, minority stress, and microaggression experiences, including interpersonal and institutional discrimination perpetrated by fellow service members/veterans, citizens, therapy group members, and health care providers. *Conclusion:* These data provide a unique account of LGBT veteran's identity-related trauma and concomitant interpersonal and institutional discrimination, microaggression experiences, minority stress, and traumatic stress symptoms. Findings highlight existing service gaps regarding evidence-based treatments for the sequalae of trauma, discrimination, microaggressions, and minority stress. In addition, we noted past and present issues in military and healthcare settings that may lead to or exacerbate trauma-related distress and discourage treatment seeking among LGBT veterans. We provide suggestions for clinical work with LGBT veterans and encourage ongoing research and development to eliminate remaining service gaps.

Livingston, N. A., Lynch, K. E., Hinds, Z., Gatsby, E., DuVall, S. L., & Shipherd, J. C. (2022). **Identifying posttraumatic stress disorder and disparity among transgender veterans using nationwide Veterans Health Administration electronic health record data.** *LGBT Health, 9*(2), 94–102. doi:10.1089/lgbt.2021.0246 *Purpose:* The prevalence of posttraumatic stress disorder (PTSD) and other psychiatric disorders is high among military veterans and even higher among transgender veterans. Prior prevalence estimates have become outdated, and novel methods of estimation have since been developed but not used to estimate PTSD prevalence among transgender veterans. This study provides updated estimates of PTSD prevalence among transgender and cisgender veterans. *Methods:* We examined Veterans Health Administration (VHA) medical record data from October 1, 1999 to April 1, 2021 for 9995 transgender veterans and 29,985 cisgender

veteran comparisons (1:3). We matched on age group at first VHA healthcare visit, sex assigned at birth, and year of first VHA visit. We employed both probabilistic and rule-based algorithms to estimate the prevalence of PTSD for transgender and cisgender veterans. *Results:* The prevalence of PTSD was 1.5-1.8 times higher among transgender veterans. Descriptive data suggest that the prevalence of depression, schizophrenia, bipolar disorder, alcohol and non-alcohol substance use disorders, current/former smoking status, and military sexual trauma was also elevated among transgender veterans. *Conclusion:* The PTSD and overall psychiatric burden observed among transgender veterans was significantly higher than that of their cisgender peers, especially among recent users of VHA care. These PTSD findings are consistent with prior literature and minority stress theory, and they were robust across probabilistic and two rule-based methods employed in this study. As such, enhanced and careful screening, outreach, and evidence-based practices are recommended to help reduce this disparity among transgender veterans.

Livingston, N. A., Flentje, A., Brennan, J., Mereish, E. H., Reed, O., Cochran, B. N. (2020). **Real-time associations between discrimination and anxious and depressed mood among sexual and gender minorities: The moderating effects of lifetime victimization and identity concealment.** *Psychology of Sexual Orientation and Gender Diversity, 7*(2), 132–141. doi:10.1037/sgd0000371 Sexual and gender minorities (SGMs) experience higher rates of depression and anxiety, which are linked to higher rates of discrimination and victimization. SGM individuals may conceal their SGM identities to decrease discrimination and victimization exposure, yet these experiences still occur and concealment itself is often associated with greater anxiety and depression. However, it remains unclear whether lifetime victimization and identity concealment moderate the effect of day-to-day discrimination, which we evaluated in the current study using ecological momentary assessment (EMA). Fifty SGM participants (Mage = 21.82, SD = 4.70; 84% White) completed baseline assessment (e.g., concealment and lifetime victimization) followed by EMA of daily discrimination and anxious and depressed mood for 14 days. As hypothesized, daily discrimination predicted momentary increases in anxious and depressed mood, $b = .34$, $p < .001$. Notably, these effects were more pronounced among individuals who reported higher levels of identity concealment, $b = .25$, $p < .001$, and previous SGM-based victimization experiences (marginally), $b = .18$, $p = .05$. Main effects of cumulative lifetime victimization and identity concealment, measured at baseline, were associated with higher ratings of anxious and depressed mood over the 2-week study. While identity concealment may reduce exposure to discrimination and victimization, we found that concealment and prior victimization predict heightened reactivity to daily discrimination experiences. Additional research is needed to further explicate real-time effects of minority stress exposure, and to develop interventions that may mitigate risk among SGM individuals with prior victimization exposure and higher levels of identity concealment in particular.

Meyer, I. H. (1995). **Minority stress and mental health in gay men.** *Journal of Health and Social Behavior, 36*(1), 38–56. doi:10.2307/2137286 Describes stress as derived from minority status and explores its effect on psychological distress in gay men. The concept of minority stress is based on the premise that gay people in a heterosexist society are subjected to chronic stress related to their stigmatization. Minority stressors were conceptualized as internalized homophobia, stigma, and actual experiences of discrimination and violence. The mental health effects of the 3 minority stressors were tested in a community sample of 741 New York City gay men. The results supported minority stress hypotheses. Each of the stressors had a significant independent association with a variety of mental health measures. Odds ratios suggested that men who had high levels of minority stress were 2–3 times as likely to suffer also from high levels of distress.

Meyer I. H. (2003). **Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence.** *Psychological Bulletin, 129*(5), 674–697. doi:10.1037/0033-2909.129.5.674 In this article the author reviews research evidence on the prevalence of mental disorders in lesbians, gay men, and bisexuals (LGBs) and shows, using meta-analyses, that LGBs have a higher prevalence of mental disorders than heterosexuals. The author offers a conceptual framework for understanding this excess in prevalence of disorder in terms of minority stress--explaining that stigma, prejudice, and discrimination create a hostile and stressful social environment that causes mental health problems. The model describes stress processes, including the experience of prejudice events, expectations of rejection, hiding and concealing, internalized homophobia, and ameliorative coping processes. This conceptual framework is the basis for the review of research evidence, suggestions for future research directions, and exploration of public policy implications.

Mustanski, B., Andrews, R., Herrick, A., Stall, R., & Schnarrs, P. W. (2014). **A syndemic of psychosocial health disparities and associations with risk for attempting suicide among young sexual minority men.** *American Journal of Public Health, 104*(2), 287–294. doi:10.2105/AJPH.2013.301744 *Objectives:* We examined a syndemic of psychosocial health issues among young men who have sex with men (MSM), with men and women (MSMW), and with women (MSW). We examined hypothesized drivers of syndemic production and effects on suicide attempts. *Methods:* Using a pooled data set of 2005 and 2007 Youth Risk Behavior Surveys from 11 jurisdictions, we used structural equation modeling to model a latent syndemic factor of depression symptoms, substance use, risky sex, and intimate partner violence. Multigroup models examined relations between victimization and bullying experiences, syndemic health issues, and serious suicide attempts. *Results:* We found experiences of victimization to increase syndemic burden among all male youths, especially MSMW and MSM compared with MSW (variance explained = 44%, 38%, and 10%, respectively). The syndemic factor was shown to increase the odds of reporting a serious suicide attempt, particularly for MSM (odds ratio [OR] = 5.75; 95% confidence interval [CI] = 1.36, 24.39; $P < .001$) and MSMW (OR = 5.08; 95% CI = 2.14, 12.28; $P < .001$) compared with MSW (OR = 3.47; 95% CI = 2.50, 4.83; $P < .001$). *Conclusions:* Interventions addressing multiple psychosocial health outcomes should be developed and tested to better meet the needs of young MSM and MSMW.

Mustanski, B., Garofalo, R., Herrick, A., & Donenberg, G. (2007). **Psychosocial health problems increase risk for HIV among urban young men who have sex with men: Preliminary evidence of a syndemic in need of attention.** *Annals of Behavioral Medicine, 34*(1), 37–45. doi:10.1007/BF02879919 *Background:* Young men who have sex with men (YMSM) experience disparities in HIV rates and potentially in mental health, substance abuse, and exposure to violence. *Purpose:* We assessed the extent to which these psychosocial health problems had an additive effect on increasing HIV risk among YMSM. *Methods:* An urban sample of 310 ethnically diverse YMSM reported on psychosocial health problems, sexual risk behaviors, and HIV status. A count of psychosocial health problems was calculated to test the additive relationship to HIV risk. *Results:* The prevalence of psychosocial health problems varied from 23% for regular binge drinking to 34% for experiencing partner violence. Rates of sexual risk behaviors were high and 14% of YMSM reported receiving an HIV+ test result. Psychosocial health problems cooccurred, as evidenced by significant bivariate odds ratios (ORs) between 12 of the 15 associations tested. A number of psychosocial health problems significantly increased the odds of having multiple anal sex partners (OR=1.24), unprotected anal sex (OR=1.42), and an HIV-positive status (OR 1.42), after controlling for demographic factors. *Conclusions:* These data suggest the existence of cooccurring epidemics, or "syndemic," of health problems among YMSM. Disparities exist not only in the prevalence of HIV among YMSM but also in research to combat the epidemic within this vulnerable population. Future research is needed to identify risk and resiliency factors across the range of health disparities and develop interventions that address this syndemic.

Pachankis J. E. (2007). **The psychological implications of concealing a stigma: A cognitive-affective-behavioral model.** *Psychological Bulletin, 133*(2), 328–345. doi:10.1037/0033-2909.133.2.328 Many assume that individuals with a hidden stigma escape the difficulties faced by individuals with a visible stigma. However, recent research has shown that individuals with a concealable stigma also face considerable stressors and psychological challenges. The ambiguity of social situations combined with the threat of potential discovery makes possessing a concealable stigma a difficult predicament for many individuals. The increasing amount of research on concealable stigmas necessitates a cohesive model for integrating relevant findings. This article offers a cognitive-affective-behavioral process model for understanding the psychological implications of concealing a stigma. It ends with a discussion of potential points of intervention in the model as well as potential future routes for investigation of the model.

Shipherd, J. C., Lynch, K., Gatsby, E., Hinds, Z., DuVall, S. L., & Livingston, N. A. (2021). **Estimating prevalence of PTSD among veterans with minoritized sexual orientations using electronic health record data.** *Journal of Consulting and Clinical Psychology, 89*(10), 856–868. doi:10.1037/ccp0000691 *Objective:* Questionnaire studies show people with minoritized sexual orientations (MSOs) face increased risk for conditions including posttraumatic stress disorder (PTSD). This study replicated Harrington et al.'s (2019) electronic health record probabilistic algorithm to evaluate lifetime PTSD prevalence in Veterans Health Administration (VHA)-using veterans. *Method:* In 115,853 MSO veterans and a 1:3 matched (on sex assigned at birth, and age at and year of first VHA visit) sample of non-MSO veterans. Each veteran was given a probability of 'likely PTSD' (0.0–1.0) and thresholds (e.g., 0.7) applied to minimize false positive classifications. *Results:* Veterans with MSO were 2.35 times, CI [2.33, 2.38], more likely to have 'likely PTSD' than veterans with non-MSO. The prevalence of 'likely PTSD' using the rule-based International Classification of Diseases (ICD) approach was 40.8% among the MSO group compared to 22.0% among the non-MSO group after excluding those with bipolar or schizophrenia diagnoses and those with limited VHA engagement. Without those exclusions, prevalence was slightly higher in both groups (46.1% vs. 24.3%, respectively; prevalence ratio: 1.90). Despite increased prevalence of exposure to military sexual trauma (MST; MSO = 20.7%; non-MSO = 8.3%) and double 'likely PTSD' among MSO veterans, they were less likely to have a service-connected PTSD disability than their matched non-MSO (MSO = 78.1%; non-MSO = 87.6%) comparators. *Conclusions:* VHA-using veterans with MSO were twice as likely to have 'likely PTSD' and exposure to MST than veterans with non-MSO. Veterans with MSO were less likely to be service-connected for PTSD than non-MSO counterparts.

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