Transdiagnostic Approaches to Sexual and Gender Minority Mental Health

Nicholas R. Eaton, Ph.D.

Stony Brook University

Craig Rodriguez-Seijas, Ph.D.

University of Michigan

John E. Pachankis, Ph.D.

Yale University

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Abstract

Sexual and gender minority individuals experience minority stress, which is hypothesized to underlie the mental health disparities affecting these populations. Drawing on advances in mental disorder classification, we argue that *transdiagnostic* approaches hold great promise for understanding and reducing these disparities. In contrast to traditional diagnostic approaches, which have limited construct validity and produced a piecemeal literature, transdiagnostic approaches: (1) are evidence based, (2) account for diffuse patterns of disparities and comorbidity, (3) pinpoint psychological mechanisms linking minority stress to poor mental health, (4) reduce scientific stigma, and (5) serve as efficacious and efficient targets for transdiagnostic minority stress interventions.

keywords: LGBTQ+, sexual orientation, gender identity, transdiagnostic, mental health disparities

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Sexual and gender minority (SGM) individuals, including those who identify as lesbian, gay, bisexual, and transgender, experience elevated prevalence of psychopathology and substance use disorders (SUDs) compared with heterosexual and cisgender individuals (Institute of Medicine, 2011; Herek & Garnets, 2007; Cochran & Mays, 2006). These mental health disparities represent a major public health issue, necessitating scientifically valid efforts to characterize, prevent, and ameliorate these negative outcomes. While a sizable literature exists regarding these disparities, studies have been almost exclusively framed by traditional diagnostic systems (e.g., *DSM-5*), beset by significant limitations. We advocate for the application of *transdiagnostic* conceptualizations to overcome these limitations, more accurately reflect the comorbid nature of the mental health problems disproportionately affecting SGM individuals, identify treatment-modifiable targets, and reduce the stigma that traditional scientific approaches might inadvertently perpetuate.

It is noteworthy that while we focus this paper on SGM populations, the transdiagnostic approach for which we advocate might also apply to advancing understanding of mental health among other marginalized populations (e.g., racial/ethnic minority populations). We specifically focus on SGM populations given (1) our collective expertise in both transdiagnostic approaches to psychopathology and understanding SGM psychosocial wellbeing and (2) that the research related to transdiagnostic psychopathology has advanced particularly rapidly as applied to SGM populations.

Traditional Classification Systems and SGM Mental Health

Official nosologies include numerous distinct, dichotomous diagnoses which are associated with numerous problems, including (a) presumed homogeneity of individuals who do (not) meet largely arbitrary diagnostic thresholds, (b) dimensionality (vs. dichotomy) of presentations in real-world data, and (c) high and heterogeneous comorbidity (co-occurrence) among disorders (Kim & Eaton, 2015). For instance, around 50% of individuals with one diagnosis receive at least one more (Kessler et al., 2005), highlighting the non-independence of *DSM*-defined diagnoses. Thus, current classification systems have fundamental problems. These problems pervade diagnosis-based mental health research, but they present particular concerns for SGM mental health research. By framing investigations around invalid diagnostic constructs, true disparities between SGM and cisgender/heterosexual populations, for whom adverse mental health outcomes frequently co-occur and share common stress-related etiologies, are obscured.

Reconceptualizing Mental Disorder Classification

Over several decades, a reconceptualization of mental disorder classification has emerged. Driven by the limitations of traditional systems, quantitative psychopathology research has identified a fundamental set of evidence-based constructs that appear to underlie numerous mental disorder diagnoses. Beginning with the identification of *internalizing* (the core of the mood and anxiety disorders) and *externalizing* (the core of substance use, impulsivity-, and antisociality-related disorders) factors, this rapidly growing literature now includes other such core “building blocks” of psychopathology, such as detachment and thought disorder (Kotov et al., 2017; Krueger, 1999; Krueger et al., 1998).

These *transdiagnostic* constructs of mental disorder classification cut across traditional diagnostic boundaries and address the shortcomings of current official systems that rely on

discrete, dichotomous diagnoses. Transdiagnostic factor models—like the Hierarchical Taxonomy of Psychopathology (HiTOP; Kotov et al., 2021)—represent underlying core dimensions of psychopathology that saturate traditional categorical diagnostic constructs. Diagnoses are manifestations of these underlying factors; their mutual saturation with similar transdiagnostic factors explains their patterns of comorbidity. Higher scores on the underlying transdiagnostic factor level(s)—such as the internalizing factor—translate to increased symptoms and severity, and increase comorbid presentations—such as increased symptoms of anxiety and depression, as well as potentially meeting criteria for several categorical mood and/or anxiety disorder diagnoses (Rodriguez-Seijas et al., 2015). Based on factor analytic approaches, transdiagnostic factors are arranged into hierarchies from broad (i.e., a general factor of psychopathology that saturates all mental disorders) to more fine-grained (e.g., internalizing sub-factors of distress and fear), describing the nature of mental disorders entirely from observed data and allowing for both general and specific application (Conway et al., 2019).

The flexibility of this hierarchical approach holds benefit for both research and practice. Some research/intervention questions require focus at the broadest level. For instance, time-limited treatment settings might benefit most from adoption of interventions aimed at the broadest level (or “p”, akin to the general *g* factor of intelligence) rather than granular forms of treatment given the need to balance efficaciousness with the wide array of psychopathology that presents within such settings. In other cases, more tailored focus might be required, like when examining how specific behaviors might be differentially related to other factors or sub-factors across specific populations. For example, problematic substance use behavior is conceptualized within the HiTOP model within the disinhibited externalizing domain. However, as a result of the relative commonness of substance use and availability of substances in traditional “safe

spaces” for sexual minority individuals, it might show differential associations with disinhibited externalizing for sexual minority when compared with substance use among heterosexual populations.

Empirical results further demonstrate the advantageous nature of transdiagnostic factor models, when compared with traditional categorical models. Dimensional transdiagnostic factor models fit the observed data better than traditional *DSM*-defined models. Rather than treating comorbidity as problematic, they frame comorbidity (i.e., common variance) of mental disorders as a key phenomenon of interest. Given the current “replication crisis” within psychological science, it is noteworthy that these transdiagnostic constructs have replicated repeatedly across numerous studies globally and have shown invariance across multiple populations (e.g., gender, sexual orientation, age, race/ethnicity; Eaton, 2014; Eaton et al., 2013a; Hicks et al., 2007; Kramer, Krueger, & Hicks, 2008; Rodriguez-Seijas, Eaton, & Pachankis, 2019). Further, research on SGM populations highlights the interrelatedness of psychosocial difficulties experiences by SGM individuals, their mutual associations with minority stressors, and the need for more streamlined focus that bypass the traditional singular disorder-singular focus approach (Pachankis, 2015).

Though a thorough review is beyond the scope of the current manuscript, it is worth mentioning the distinction of transdiagnostic models to which we refer, like the HiTOP, from the National Institute of Mental Health’s Research Domain Criteria (RDoC; Insel et al., 2010). Transdiagnostic models, like the HiTOP, represent a descriptive system of psychopathology, whereas the RDoC system is devoted to examining mechanisms of psychopathology. However, there are notable overlaps between the two systems (Micheline et al., 2021).

Research Benefits of Transdiagnostic Constructs in SGM Research

Reframing Mental Health Disparities

Transdiagnostic approaches provide a valid and parsimonious framing of mental health disparities. Because transdiagnostic approaches take a multivariate approach they bypass the current tendency of documenting disparities one-at-a-time, which potentially paints an inaccurate picture of the nature and scope of the problem. While prevalence differences in individual disorders can be examined, transdiagnostic structures have an important benefit: They allow researchers to ascertain if disparities in observed manifestations of mental disorder (e.g., diagnoses) are reflections of disparities at the level of core transdiagnostic constructs. For instance, previous research has demonstrated an invariant internalizing-externalizing transdiagnostic structure in sexual minority and heterosexual individuals (Eaton, 2014; Rodriguez-Seijas et al., 2019). This means that prevalence elevations observed in multiple mood, anxiety, and SUD diagnoses can be thought of as manifestations of *two core disparities*: SGMs' higher mean levels of internalizing and externalizing liabilities. Indeed, one study found that sexual minority individuals had significantly higher mean levels of internalizing (.55 *SDs* above heterosexuals' mean) and externalizing (.82 *SDs* above heterosexuals' mean) psychopathology, manifesting as major mental health disparities in 13 *DSM-IV* diagnoses (Eaton, 2014). Transdiagnostic structures, therefore, parsimoniously highlight that disparities cut across diagnostic boundaries at a fundamental level, having diffuse impacts on multiple disorder manifestations simultaneously.

Transdiagnostic Factors Link Minority Stress to Mental Disorders

The notion that disparities exist at the transdiagnostic level invites the possibility that minority stress might have a transdiagnostic effect on mental health. While we refer to SGM populations as a superordinate group within this manuscript, it is also important to acknowledge differences in minority stress processes among sexual versus gender minority populations (Tan et al., 2019). Transdiagnostic psychopathology fits neatly into minority stress theory, which specifies that diffuse identity-related stressors elevate universal risk factors for psychopathology to cause a broad impact on mental health (Eaton, 2020; Meyer, 2003; Tan et al. 2019). Minority stress theory additionally specifies that these stressors exist both distally (e.g., structural stigma and disadvantage) and more proximally through stressful cognitive, affective, and behavioral stress processes (e.g., rejection hyper-vigilance, internalized stigma, identity concealment).

Take for example the question of how minority stressors, like discrimination, impact mental health. In a typical study, one might compute a correlation (or regression) between a perceived minority stress variable like discrimination and each of k mental health diagnoses (or symptom scales). This produces k correlations, and the analytic framework suggests a direct association between discrimination and each individual disorder (see Figure 1a). While seemingly tractable, this sort of approach quickly becomes unwieldy when one considers exploring associations between several other minority stressors in tandem. As illustrated in Figure 1b, if one desired to investigate associations between distal stressors like discrimination, more proximal stressors like concealment and rejection sensitivity, and any mental health outcome(s), the number of—assumed independent—associations being computed increases substantially.

In a transdiagnostic framework the k diagnoses are reduced to one, or few, core transdiagnostic construct(s). These transdiagnostic constructs now represent the shared, common

variance that pervades the distinct k diagnoses and can then serve as the variables of interest (see Figure 1c). Instead of an unwieldy matrix of multiple individual correlations (or regressions), this approach reduces analyses to one, or few, associations between minority stressor(s) and that common variance which is responsible for similarities among the multiple correlations.. Similarly, this sort of approach makes the inclusion of multiple minority stress predictors more streamlined (see Figure 1d).

As an illustration of how this framework might be used, researchers can examine how distal minority stressors, like discrimination, might give rise to a higher transdiagnostic internalizing level, which could manifest as elevated prevalence of mood and anxiety disorders (Lehavot & Simoni, 2011). It is also possible to investigate if the stressor has incremental associations with any individual mental disorder manifestation above and beyond this transdiagnostic effect. That is, apart from modeling the common variance above, it is possible to simultaneously explore how discrimination, or any minority stressor, is associated with the residual variance (i.e., the variance that is left behind after accounting for the transdiagnostic variance making it unique to that categorical disorder variable). This approach would permit investigating if discrimination has a negative impact on feelings of panic in particular, above and beyond discrimination's transdiagnostic effect on all mood and anxiety disorders via the internalizing liability, as one example (see Figure 1e).

Figure 1. Conceptual models illustrating traditional disorder-specific approaches versus transdiagnostic approaches to understanding SGM mental health.

A recent study of perceived racial discrimination applied this approach, where two transdiagnostic latent psychopathology factors (internalizing and externalizing) were modeled using 12 diagnoses (Rodriguez-Seijas et al., 2015). Both transdiagnostic factors, and each diagnosis' residual variance, were regressed on discrimination. Discrimination's effect on nearly every mental disorder was primarily through the transdiagnostic core of the disorders—for example, perceived discrimination was linked to major depressive disorder (MDD) primarily because discrimination was associated with higher levels of the shared internalizing core of depression. The other effect (unmediated), directly from discrimination to each diagnosis, accounted for much less variance. For many disorders, including MDD, dysthymia, generalized anxiety, oppositional defiant, attention-deficit/hyperactivity, and social anxiety disorders, more than 80% of the effect of discrimination was transdiagnostic. Indeed, for the latter two disorders, 100% of the effect of discrimination was mediated by the transdiagnostic variables, and there was no direct discrimination-disorder link. Such an approach has also been applied to investigating patterns of risk and resilience among multiply marginalized populations (i.e., those at the intersections of racial/ethnic and sexual minority status; Rodriguez-Seijas et al., 2019), as well as examinations of more proximal stressors like rejection sensitivity (Cohen et al., 2016).

This framing highlights the need for minority stress scholars to consider mental disorders in the context of core transdiagnostic components, rather than solely as discrete diagnostic constructs, and that transdiagnostic constructs can clarify minority stress pathways that lead to multiple negative mental health outcomes simultaneously.

Transdiagnostic Constructs Link Mental Health to SGM-relevant Health Outcomes

In addition to serving as outcomes in minority stress investigations, transdiagnostic factors serve as links between mental health and outcomes critical to SGM wellbeing. For instance, suicide is a key outcome for SGM research, and much research on this construct links disorders such as MDD to suicidal ideation/behavior/completion. Transdiagnostic factors provide a key research focus for these questions, because they parse the variance of disorders like MDD into shared and unique parts—what MDD shares with other internalizing disorders, and what makes MDD unique from other internalizing disorders, respectively—and allow researchers to determine which of these variance sources drive the disorder-outcome (e.g., MDD-suicide) link.

Studies examining these sorts of questions indicate that the transdiagnostic core of disorders, rather than what makes the disorders unique, drives mental disorders' associations with important outcomes. Regarding suicide, for instance, it is largely the shared internalizing core of MDD and other mood and anxiety disorders that links them with suicide (Eaton et al., 2013b; Naragon-Gainey & Watson, 2011); the unique variances of most disorders do not. Stated another way, if one wants to understand how mood and anxiety disorders relate to, and predict, suicidality, one likely needs to study their transdiagnostic internalizing variance (versus parsing this variance into discrete diagnoses). It is what these disorders have in common, not what makes them different, that predicts suicidality. This highlights how critical it is for researchers to consider transdiagnostic variance in their studies of SGM mental health. SGM populations contend with elevated prevalence of suicidal ideation, self-injurious behaviors, and deaths by suicide (Haas et al., 2010). Rendering multiple distinct categorical diagnoses takes not only time and resources, but it also clouds the culprit that appears to be driving a mental health association with suicide: transdiagnostic psychopathology.

Unifying Literatures

The current disorder-by-disorder approach to SGM mental health research produces a large, piecemeal literature that is difficult to interpret, search, and frame theoretically beyond “minority stressors have diffuse effects on nearly all forms of mental disorder.” Transdiagnostic constructs allow for a more integrative approach than this current disorder-by-disorder approach. They present organizing frameworks that can serve as a “meta-structure” for the extant literature, organizing findings in a coherent, principled, and data-driven way. Rather than diffuse disorder-by-disorder associations, patterns of disparities and of disorders’ links with minority stressors can be organized around core transdiagnostic constructs, highlighting common etiological pathways and generating new hypotheses. For instance, hypervigilance toward stigma-related rejection might have a diffuse transdiagnostic effect on all internalizing disorders, but it might have an additional, incremental impact on social anxiety. However, only one study to date has applied such a transdiagnostic approach to examining rejection sensitivity, and found no direct effect between rejection sensitivity and social anxiety symptoms after accounting for the association between rejection sensitivity and transdiagnostic variance (Cohen et al., 2016).

Reducing Scientific Stigma

We also propose a social justice benefit of transdiagnostic approaches. We argue that the scientific literature itself can contribute to minority stress and stigmatization of SGM populations by identifying disparities in numerous, sub-optimally valid, related diagnostic categories (Eaton, 2020). Due to the societal stigma of having a mental disorder diagnosis, a literature indicating that SGM individuals have higher rates of *many* diagnoses might needlessly pathologize SGM individuals. If the diagnostic system were reliable and valid, these accumulated diagnoses in SGM populations would be a critical public health phenomenon. To the extent that diagnoses are invalid parsings of more fundamental transdiagnostic constructs, they can easily accumulate and

suggest a great degree of psychopathology in an oppressed community. The current scientific narrative says that SGM individuals have higher rates of 10, 20, or 30 mental disorders. This is an extremely stigmatizing scientific statement. Those disorders do not actually represent the true manifestations of qualitatively distinct mental disorders in nature, but instead reflect differential manifestations of few underlying transdiagnostic constructs. These numerous artificial diagnoses burden SGM communities with striking amounts of mental ill-health and stigmatize them as severely and diffusely unwell; this can impact treatment of SGM individuals by researchers, clinicians, and the general populace who hold these beliefs (see e.g., Burgess, van Ryn, Dovidio, & Saha, 2007; Metlzer & Roberts, 2014). What if these disparities could be reduced, in a data-driven way, to say that SGM individuals showed higher levels of only a few fundamental stress-sensitive psychopathological constructs? Transdiagnostic constructs allow for reducing this sort of scientific stigma with a focus on key, valid constructs, rather than on myriad diagnoses that result from apportioning these constructs into fine-grained, largely unreliable and invalid, highly comorbid disorders.

Transdiagnostic Interventions to Ameliorate Minority Stress Outcomes

In addition to their research utility, transdiagnostic constructs offer a critical point of intervention for observed disparities. Treatments designed to target transdiagnostic constructs can alleviate multiple diagnostic presentations simultaneously and reduce the need for training in several single-problem/single-treatment approaches. Multiple sources of evidence support this: high rates of comorbidity across mood and anxiety disorders in the general population, generalized treatment response across disorders, shared neural activation patterns, and shared etiological vulnerabilities (Wilamowska, Thompson-Hollands, Fairholme, Ellard, Farchione, & Barlow, 2010). Because SGM populations experience high rates of comorbidity (Hatzenbuehler,

Keyes, & Hasin, 2009), transdiagnostic approaches appear both effective and efficient for ameliorating minority stress-related mental health problems. Indeed, the co-occurrence of diverse problems among SGM individuals has been argued to form a syndemic (i.e., co-occurring epidemic) threat to their health, calling for the urgent identification of efficient transdiagnostic treatment approaches capable of simultaneously alleviating these conditions (Pachankis, 2015).

One particularly promising intervention approach adapts treatments for the general population to target the transdiagnostic constructs linking minority stress to poor mental, sexual, and behavioral health. Drawing on the Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders—a cognitive-behavioral treatment that yields significant improvement across diagnoses in the general treatment-seeking population—Pachankis and colleagues (2015) adapted a transdiagnostic approach to improve comorbid psychosocial health problems among young sexual minority men by improving minority stress coping. The researchers proposed that by addressing the transdiagnostic pathways, such as rumination, unassertiveness, and social isolation, that link minority stress exposure to mental, behavioral, and sexual health problems among sexual minority men, they might be able to simultaneously improve these problems (Pachankis, 2015). They adapted the exercises of the Unified Protocol (e.g., changing emotion-driven behavioral patterns, reworking cognitive biases) to specifically address minority stress coping (e.g., self-affirming assertiveness training, cognitive restructuring for internalized homophobia). Compared to participants on a waitlist, participants who received the adapted treatment experienced significantly greater reductions in depression, alcohol use, sexual compulsivity, and high-risk condomless anal sex.

Thus, data suggest effectiveness and efficiency of intervention approaches that target transdiagnostic constructs (e.g., rumination, unassertiveness, and social isolation), which cut

across diagnoses. These treatments also target minority stress pathways (e.g., rejection hypervigilance, internalized homophobia) that are associated with multiple forms of internalizing and externalizing psychopathology (Pachankis et al., 2015). While preliminary, these results suggest that transdiagnostic approaches to psychotherapy, as well as mental disorder classification, may benefit clinical practice as well as research.

Summary

While SGM mental health research has documented clear disparities using traditional categorical diagnoses, application of recent advances in mental disorder classification provide a compelling future direction. From unifying literatures, investigating minority stress-outcome patterns, reducing scientific stigma, and acting as points of efficacious and efficient intervention, transdiagnostic constructs hold great promise. Pursuing these reliable and valid mental disorder conceptualizations in research and practice represents a crucial step toward improving the mental health of sexual and gender minority populations.

Recommended Readings

1. Kotov, R., Krueger, R. F., Watson, D., Cicero, D. C., Conway, C. C., DeYoung, C. G., ... & Wright, A. G. (2021). The Hierarchical Taxonomy of Psychopathology (HiTOP): A quantitative nosology based on consensus of evidence. *Annual Review of Clinical Psychology, 17*, 83-108. An overview of the HiTOP approach to understanding psychopathology, with updates on research supporting the model.
2. Eaton, N. R. (2020). Measurement and mental health disparities: Psychopathology classification and identity assessment. *Personality and Mental Health, 14*(1), 76-87. An extended discussion of how transdiagnostic approaches may be useful for (psychiatric) disparity research.
3. Rodriguez-Seijas, C., Eaton, N. R., & Pachankis, J. E. (2019). Prevalence of psychiatric disorders at the intersection of race and sexual orientation: Results from the National Epidemiologic Survey of Alcohol and Related Conditions-III. *Journal of Consulting and Clinical Psychology, 87*(4), 321-331. A recent empirical study of psychiatric disparities among individuals at the intersections of sexual and racial/ethnic minority status utilizing both diagnosis-specific and transdiagnostic modeling approaches.
4. Rodriguez-Seijas, C., Eaton, N. R., & Krueger, R. F. (2015). How transdiagnostic factors of personality and psychopathology can inform clinical assessment and intervention. *Journal of Personality Assessment, 97*(5), 425-435. An overview of how transdiagnostic approaches to psychiatric classification can inform assessment and intervention practices.
5. Pachankis, J. E. (2015). A transdiagnostic minority stress treatment approach for gay and bisexual men's syndemic health conditions. *Archives of Sexual Behavior, 44*(7), 1843-1860. A review of the co-occurring nature of psychosocial difficulties experienced among

sexual minority men, further supporting the utility of transdiagnostic approaches to understanding SGM psychosocial health.

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Figure 1. Conceptual models illustrating traditional disorder-specific approaches versus transdiagnostic approaches to understanding SGM mental health.