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ADVANCING SCIENCE AND PROMOTING UNDERSTANDING OF TRAUMATIC STRESS

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Racial and Ethnic Disparities in PTSD

Health disparities are defined as those differences in health which are “unnecessary, avoidable, unfair, and unjust” (Whitehead, 1992). In a 2008 report on causes of health disparities worldwide, the World Health Organization (WHO) observed, “Within countries there are dramatic differences in health that are closely linked with degrees of social disadvantage” (WHO Commission on Social Determinants of Health & World Health Organization, 2008). These avoidable health inequities exist “because of the circumstances in which people grow, live, work, and age, and the systems put in place to deal with illness” (WHO Commission on Social Determinants of Health & World Health Organization, 2008). That is, differences in the social determinants affecting everyday aspects of life contribute to disparities in health within and across populations. Given more recent advances in genomic medicine, the National Institute of Minority Health and Disparities (NIMHD) incorporated into their definition biologic factors that may contribute to disparities in health (e.g., epigenomics), reframing the social determinants of health model to that of “health determinants” (Alvidrez et al., 2019). NIMHD operationalizes health disparities as a pattern of differences among people in a demographically-defined group in health outcomes relative to the majority of the population (i.e., in rates of disease incidence or prevalence, disease progression, severity, functioning, premature or excess mortality) (Alvidrez et al., 2019).

In the WHO model of population health, availability of high quality health care is one of the social determinants in one’s circumstances of living that contribute to health disparities across populations (WHO Commission on Social Determinants of Health & World Health Organization, 2008). In 2003,

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the Institute of Medicine (IOM; now National Academy of Medicine), published their highly influential report, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. The IOM defined racial/ethnic disparities in health care as those differences in the quality of health care not due to differences in clinical need or patient preferences (Smedley et al., 2003). According to the IOM report, health care disparities arise from factors in multiple levels of health care organizations: regulatory or operational processes that selectively disadvantage one or more racial/ethnic groups (i.e., structural racism) and discrimination present in patient-provider interactions (i.e., through provider conscious or unconscious biases and stereotypes about race affecting medical decisions). The role of health care systems in health disparities has since been contextualized within broader societal trends and structures. Accordingly, NIMHD has a more expansive view of health care disparities that includes, among other things, insurance coverage, ability to access appropriate care, and even patient preferences as potential disparity drivers (Alvidrez et al., 2019).

In this issue of *PTSD Research Quarterly*, we provide a guide to some of the key topics in racial and ethnic disparities in PTSD and PTSD treatment, focusing on a few well-conducted studies within each content area. Although many studies have examined racial or ethnic differences in PTSD incidentally or by combining minority groups into a non-white comparator, there have been relatively few studies specifically designed to examine these issues. We primarily highlight studies designed to evaluate differences or disparities across racial/ethnic groups or between one underrepresented

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racial/ethnic minority group and a White group comparator. Research to assess and evaluate potential racial and ethnic disparities requires specific sampling, assessment, covariate selection, and statistical modeling approaches and we provide some references for those interested in learning more.

Disparities in PTSD Prevalence

In the National Vietnam Veterans Readjustment Study (NVVRS; Kulka, 1990), Black and Hispanic Veterans were found to have elevated rates of PTSD. As summarized by Dohrenwend et al. (2008), uncertainty about potential cause(s) of these rate differences (or even their veracity), led to a great deal of speculation: symptom over-reporting, recall bias, greater trauma exposure, and differences in pre- or post-war vulnerabilities (Dohrenwend et al., 2008). To determine if differences in PTSD prevalence reflected genuine disparities, Dohrenwend (2008) evaluated incident and current PTSD using a subset of the original NVVRS sample with more detailed diagnostic information and augmented by individual military records and historic accounts. With these more detailed sources, Black Vietnam Veterans were found to have greater rates of incident PTSD and Hispanic Veterans of current PTSD than White Veterans (Dohrenwend et al., 2008). The greater severity among Black and Hispanic Veterans was later found to be a persistent effect (Steenkamp et al., 2017).

There were two extensions of the NVVRS: the American Indian Vietnam Veterans Project (AIVVP) and the Hawaii Vietnam Veterans Project (HVVP) (Beals et al., 2002; Friedman et al., 2004). In the AIVVP, Native American Veterans were found to have rates of current PTSD comparable to those that had been observed among Hispanic Vietnam Veterans and also elevated rates of lifetime PTSD (Beals et al., 2002). The HVVP examined prevalence estimates among two Hawaiian Veteran groups -- Native Hawaiian Veterans and Veterans of Japanese ancestry (Friedman et al., 2004). Although small sample sizes limited power to detect group differences in the HVVP, Native Hawaiian Veterans had rates of lifetime PTSD comparable to Black Veterans and rates of current PTSD equal to that of Whites; rates of both lifetime and current PTSD among Veterans of Japanese ancestry were lower than among all other groups (Friedman et al., 2004; Tsai & Kong, 2012). This pattern of differential rates of PTSD across racial/ethnic groups has likely continued into the present era as suggested by findings from two studies: a large PTSD screening study of recently separated Veterans ($n = 9,420$) and from the National Survey of Veterans (McClendon et al., 2019; Tsai et al., 2014).

Three studies examined PTSD prevalence rates in the general U.S. population using large national samples weighted back to the population. Using data from Wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC-II), Roberts and colleagues (2011) examined racial/ethnic variations in population rates of trauma exposures, lifetime prevalence and conditional risk of PTSD among Black, Hispanic, Asian/Pacific Islander, and White Americans (Roberts et al., 2011). Both lifetime PTSD prevalence and conditional risk for PTSD were higher among Black/African Americans, lower among Asian/Pacific Islanders, and comparable for Latinx Americans relative to Whites (Roberts et al., 2011).

Although a systematic review by Alcántara and colleagues (2013) concluded Latinx Americans had greater conditional risk of PTSD

relative to White Americans and attributed differences in prevalence estimates across studies to variations in sampling and assessment methods (Alcántara et al., 2013), two studies using the integrated Collaborative Psychiatric Epidemiology Surveys (CPES) found patterns in PTSD prevalence rates across racial/ethnic groups similar to those reported by Roberts and colleagues (Alegria et al., 2013; McLaughlin et al., 2019; Roberts et al., 2011). Rates for lifetime PTSD were higher among White, African American, and Afro-Caribbeans Americans, lower among Latinx Americans, and lowest among those who were Asian compared to all other groups (Alegria et al., 2013; McLaughlin et al., 2019). The pattern of 12-month PTSD was similar (Alegria et al., 2013). Both studies reported greater conditional risk of PTSD among Black and White Americans and lower conditional risk among Asian Americans (Alegria et al., 2013; McLaughlin et al., 2019). Conditional risk of PTSD was comparable to that of Whites among Native Americans despite higher rates of lifetime PTSD (Bassett et al., 2014; Beals et al., 2013).

PTSD prevalence rates across racial/ethnic groups in the military cohorts mirrored rates of trauma exposure – higher exposures among Native American, Hispanic and Black Veterans relative to White Veterans and lower exposure rates among Asian Veterans of Japanese ancestry (Beals et al., 2002; Dohrenwend et al., 2008; Friedman et al., 2004). In community samples, the amount of trauma exposure did not track with PTSD prevalence estimates, but the types of trauma experienced were considerably more variable. For example, Asian/Pacific Islanders were more likely to have traumatic experiences associated with non-combat war-related events (e.g., those associated with being a civilian in a war zone or a refugee) (Roberts et al., 2011). White Americans reported the greatest rates of trauma, but were more likely to experience traumas that were non-interpersonal/non-intentional (e.g., serious accidents); Native American, Hispanic and Black Americans, in contrast, experienced types of trauma more likely to lead to PTSD, such as significant child maltreatment and, among Black and Native Americans, assaultive violence (Bassett et al., 2014; Beals et al., 2013; Liu et al., 2017; Roberts et al., 2011).

Disparities in the Health Care System

Mental health care is an interpersonal enterprise and, as such, is vulnerable to the same biases and stereotypes operating throughout society. There are numerous institutional and provider decision points in health care pathways that are vulnerable to the effects of bias; relatively few have been systematically studied. Mental health care at its best may help to mitigate some of the adverse effects of discrimination; at its worst, it can exacerbate disparities in PTSD prevalence rates and illness severity (Alcántara et al., 2013; Alegria et al., 2016; Roberts et al., 2011).

The delivery of mental health care is predicated on the ability of individuals to be aware of their need for treatment, ability to access it, and to afford any attendant costs. Delays in treatment seeking may reflect the impact of structural racism on any or all of these processes. In a 15-year follow-up of mental health treatment seeking among a registry of individuals exposed to the World Trade Center terrorist attack ($n = 71,426$), fewer people who were Black or Asian received mental health care as compared to White, Hispanic, or people of other racial/ethnic groups (Jacobson et al., 2019). Of the Asian Americans who sought treatment, delays in treatment initiation were common and significantly longer than

those observed among people of other racial/ethnic groups. Additionally, treatment-seeking Asian Americans were more likely to see non-mental health specialists and Black individuals were more likely to see non-doctoral level providers (e.g., nurses) or spiritual mentors (Jacobson et al., 2019) suggesting possible differential access to mental health providers.

Because treatment delays may lead to worse clinical outcomes and some racial/ethnic minorities are more likely to delay seeking treatment for PTSD, Goldberg (2020) used NESARC-III data to compare delays in treatment seeking by Veteran status (as an indicator of access to VA health care) across racial/ethnic groups with PTSD, depression, and/or alcohol misuse (Goldberg et al., 2020). Among those with lifetime PTSD, community dwelling non-Veteran racial/ethnic minorities had the longest delay in seeking mental health treatment of the four groups. Non-Veteran Whites and both Veteran groups (White and racial/ethnic minority Veterans) had equivalent delays, suggesting that having access to a safety net health care system like VA mitigated disparities in accessing mental health care (Goldberg et al., 2020).

Many Veterans accessing VA health care for PTSD also apply for disability benefits (i.e., service connection, SC). Two large studies reported that Black Veterans with PTSD are less likely to be awarded SC for PTSD than White Veterans (Murdoch et al., 2003; Redd et al., 2020). Marx and colleagues studied Black and White Veterans ($n = 764$) who were part of a national longitudinal registry of recently deployed OIF/OEF Veterans who had a military-related trauma and had also applied for VA SC for PTSD (Marx et al., 2017). All participants were evaluated for current and lifetime PTSD with a Structured Clinical Interview for the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; SCID)*. They compared SCID-based PTSD diagnoses with disability examiner diagnoses and with eventual awarding of PTSD SC benefits. Black Veterans with SCID-diagnosed PTSD were less likely to receive a PTSD diagnosis from a disability examiner (greater false negatives); White Veterans who did not meet SCID PTSD criteria were more likely than Black Veterans to get a PTSD diagnosis from a disability examiner (more false positives) (Marx et al., 2017). Differences in examiner diagnoses resulted in more Black Veterans with PTSD being denied VA disability benefits regardless of SCID-based diagnoses and more Whites being awarded disability benefits even if they did not meet full criteria. Importantly, these race disparities in examiner diagnoses occurred only when the evaluation was done less formally — without psychometric testing (Marx et al., 2017), suggesting that disparities in examiner decision-making were likely influenced by race-based heuristics.

Racial/ethnic differences in mental health treatment engagement, quality, and receipt of a minimally adequate trial of care for PTSD have been examined in a number of studies. Although several well-designed studies have identified racial/ethnic disparities, inconsistencies across studies in clinical contexts and methodological issues (e.g., small sample sizes, variable sampling periods, model adjustments for correlates of race/ethnicity prior to comparisons- see below.), have complicated cross-study comparisons. Larger, multisite or national studies have more often found disparities between Latinx and White Veterans in receipt of psychotherapy, individual psychotherapy, and evidence-based psychotherapy (EBP) (Doran et al., 2017; Hale et al., 2019; Rosen et al., 2019; Spont et al., 2017). There is also some evidence that

minimal trials of psychotherapy or pharmacotherapy are also relatively less common among racial/ethnic minorities (Doran et al., 2017; Hale et al., 2019; Spont et al., 2015). One very large study using natural language processing to identify EBP appointments in the medical records among all OIF/OEF Veterans with PTSD from 2001-2015 seen in VA, found that within 3 years, Black Veterans who started an EBP were more likely than White Veterans to persist for eight sessions; however, improvement rates among Black Veterans who initiated an EBP were lower than the improvement rates seen among White Veterans (Maguen et al., 2019, 2020). Outcome disparities have been infrequently assessed, but disparities in outcomes among Black Veterans have been observed in other studies using different assessment methods and samples (Sripada et al., 2017, 2019). That single site studies and RCTs are less likely to observe disparities (Lester et al., 2010), suggests that the impact of treatment disparities on outcomes is likely due to variations in treatment delivery rather than differential responses to treatment among different racial/ethnic groups.

Some Underlying Causes of Racial/Ethnic Disparities

According to Williams and colleagues, racial/ethnic disparities in health and health care are driven by institutionalized discriminatory practices and structures that favor the dominant group (i.e., structural racism), discriminatory behavior by individuals, and racism embedded in American culture (e.g., race-based stereotypes) which creates an environment permissive to institutional and individual forms of discrimination (Williams et al., 2019). One of the ways that discrimination impacts health is through differential trauma exposures — such as greater rates of exposure among military Veterans, more exposure to types of trauma that have lasting impact on mental health (e.g., interpersonal violence), and greater cumulative trauma exposure (Beals et al., 2013; Dohrenwend et al., 2008; McLaughlin et al., 2019; Roberts et al., 2011). Racism also adversely impacts mental health in ways that can compromise trauma recovery (Williams et al., 2019). For example, a longitudinal study by Sibrava and colleagues (2019), found that frequency of discrimination experiences predicted lower rates of recovery from PTSD among Hispanic and Black adults 5 years later (Sibrava et al., 2019). Similarly, a study by Brooks Holliday and colleagues (2018) found that, within a predominantly African American female sample, experiences of discrimination were cross-sectionally associated with higher PTSD symptoms, even after controlling for psychological distress, perceived safety and neighborhood crime (Brooks Holliday et al., 2018). Differential access to key resources, such as specialty mental health care (Williams, 2018), and how those resources are allocated and delivered (Doran et al., 2017; Marx et al., 2017) are also examples of structural racism. The next issue of *PTSD Research Quarterly* will provide a more in-depth focus on the traumatic impact of racism on mental health.

Research Methods in Disparities

Although examining racial and ethnic group differences in secondary analyses can hint at potential disparities to be explored in subsequent studies, readers interested in conducting or evaluating research on racial and ethnic disparities should become familiar with recommended sampling and model designs and analytic methods to address the unique questions and issues in this area. For example, special considerations need to be made for subject selection, recruitment processes, and classification of subject race and

ethnicity (see Klein et al., 2019; Wey et al., 2018 for approaches). Health disparity populations (e.g., minority race or ethnicity) often differ in numerous ways from the majority population and these differences may or may not underly the health disparity in question. That is, not all differences are relevant. Factors presumed to contribute to disparities are often intercorrelated or interrelated in complex ways, making covariate selection and management challenging (Dye et al., 2019; Jeffries et al., 2019). Too often, disparities are obscured by adjustment for covariates associated with race/ethnicity. To investigate causality of disparities, use of complex modeling approaches and adjustment techniques are highly recommended since mediators and moderators may interact in complex ways at different levels in a theorized causal pathways, (Diez Roux, 2012; Jeffries et al., 2019). As discussed in a NIMHD paper on modeling causation in disparities research, analyses that ignore these complexities and the multilevel nature of disparity drivers risk creating biased estimates and misleading inferences (Jeffries et al., 2019). Use of qualitative and mixed-methods are also recommended to complement and expand findings from quantitative studies (i.e., to identify new avenues of investigation, identify previously unknown drivers of disparities, understand the health and treatment-related experiences of minority groups of interest, explore unique perspectives of those who have intersectional identities, to contextualize quantitatively identified drivers into a broader causal pathway) (Abrams et al., 2020).

FEATURED ARTICLES

Alcántara, C., Casement, M. D., & Lewis-Fernández, R. (2013). **Conditional risk for PTSD among Latinos: A systematic review of racial/ethnic differences and sociocultural explanations.** *Clinical Psychology Review*, 33(1), 107–119. doi:10.1016/j.cpr.2012.10.005

Conditional risk for Posttraumatic Stress Disorder (PTSD)—defined as prevalence, onset, persistence, or severity of PTSD after traumatic exposure—appears to be higher among Latinos relative to non-Latinos after accounting for sociodemographic factors. This systematic review focuses on differences in conditional risk for PTSD between Latinos and non-Latinos (White, Black, or combined) and across Latino subgroups in studies that adjust for trauma exposure. We discuss methodological characteristics of existing articles and sociocultural explanatory factors. Electronic bibliographic searches were conducted for English-language articles published in peer-reviewed journals between 1991 and 2012. We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Twenty-eight articles met inclusion criteria. Consistent support was found for elevated rates of PTSD onset and PTSD severity among Latinos relative to non-Latino Whites. The evidence on racial/ethnic differences in conditional risk for PTSD prevalence and PTSD persistence is mixed. Twenty-four articles evaluated sociocultural explanations, with the strongest support found for racial/ethnic variation in peri-traumatic responses and structure of PTSD. There were also consistent main effects for social disadvantage in studies that simultaneously adjusted for effects of race/ethnicity. Future research should use theoretically-driven models to formally test for interactions between sociocultural factors, race/ethnicity, and PTSD probability.

Alegría, M., Fortuna, L. R., Lin, J. Y., Norris, F. H., Gao, S., Takeuchi, D. T., Jackson, J. S., Shrout, P. E., & Valentine, A. (2013). **Prevalence, risk, and correlates of posttraumatic stress**

disorder across ethnic and racial minority groups in the United States. *Medical Care*, 51(12), 1114–1123. doi:10.1097/MLR.0000000000000007

Objectives: We assess whether posttraumatic stress disorder (PTSD) varies in prevalence, diagnostic criteria endorsement, and type and frequency of traumatic events (PTEs) among a nationally representative U.S. sample of 5071 non-Latino whites, 3264 Latinos, 2178 Asians, 4249 African Americans, and 1476 Afro-Caribbeans. **Methods:** PTSD and other psychiatric disorders were evaluated using the World Mental Health-Composite International Diagnostic Interview (WMH-CIDI) in a national household sample that oversampled ethnic/racial minorities ($n=16,238$) but was weighted to produce results representative of the general population. **Results:** Asians have lower prevalence rates of probable lifetime PTSD while African Americans have higher rates as compared to non-Latino whites, even after adjusting for type and number of exposures to traumatic events, and for sociodemographic, clinical and social support factors. Afro-Caribbeans and Latinos seem to demonstrate similar risk to non-Latino whites, adjusting for these same covariates. Higher rates of probable PTSD exhibited by African Americans and lower rates for Asians, as compared to non-Latino whites, do not appear related to differential symptom endorsement, differences in risk or protective factors or differences in types and frequencies of PTEs across groups. **Conclusions:** There appears to be marked differences in conditional risk of probable PTSD across ethnic/racial groups. Questions remain about what explains risk of probable PTSD. Several factors that might account for these differences are discussed as well as the clinical implications of our findings. Uncertainty of the PTSD diagnostic assessment for Latinos and Asians requires further evaluation.

Alvidrez, J., Castille, D., Laude-Sharp, M., Rosario, A., & Tabor, D. (2019). **The National Institute on minority health and health disparities research framework.** *American Journal of Public Health*, 109(S1), S16–S20. doi:10.2105/AJPH.2018.304883

We introduce the National Institute on Minority Health and Health Disparities (NIMHD) research framework, a product that emerged from the NIMHD science visioning process. The NIMHD research framework is a multilevel, multidomain model that depicts a wide array of health determinants relevant to understanding and addressing minority health and health disparities and promoting health equity. We describe the conceptual underpinnings of the framework and define its components. We also describe how the framework can be used to assess minority health and health disparities research as well as priorities for the future. Finally, we describe how fiscal year 2015 research project grants funded by NIMHD map onto the framework, and we identify gaps and opportunities for future minority health and health disparities research.

Bassett, D., Buchwald, D., & Manson, S. (2014). **Posttraumatic stress disorder and symptoms among American Indians and Alaska Natives: A review of the literature.** *Social Psychiatry and Psychiatric Epidemiology*, 49(3), 417–433. doi:10.1007/s00127-013-0759-y

Purpose: American Indians and Alaska Natives (AI/ANs) experience high rates of trauma and posttraumatic stress disorder (PTSD). We reviewed existing literature to address three interrelated questions: (1) What is the prevalence of PTSD and PTSD symptoms among AI/ANs? (2) What are the inciting events, risk factors, and co-morbidities in AI/ANs, and do they differ from those in the general U.S. population? (3) Are studies available to inform clinicians about the course and

treatment of PTSD in this population? *Methods:* We searched the PubMed and Web of Science databases and a database on AI/AN health, capturing an initial sample of 77 original English-language articles published 1992–2010. After applying exclusion criteria, we retained 37 articles on prevalence of PTSD and related symptoms among AI/AN adults. We abstracted key information and organized it in tabular format. *Results:* AI/ANs experience a substantially greater burden of PTSD and related symptoms than U.S. Whites. Combat experience and interpersonal violence were consistently cited as leading causes of PTSD and related symptoms. PTSD was associated with bodily pain, lung disorders, general health problems, substance abuse, and pathological gambling. In general, inciting events, risk factors, and co-morbidities appear similar to those in the general U.S. population. *Conclusions:* Substantial research indicates a strikingly high incidence of PTSD in AI/AN populations. However, inciting events, risk factors, and co-morbidities in AI/ANs, and how they may differ from those in the general population, are poorly understood. Very few studies are available on the clinical course and treatment of PTSD in this vulnerable population.

Beals, J., Belcourt-Dittloff, A., Garrouette, E. M., Croy, C., Jervis, L. L., Whitesell, N. R., Mitchell, C. M., Manson, S. M., & The AI-SUPERPF Team. (2013). **Trauma and conditional risk of posttraumatic stress disorder in two American Indian reservation communities.** *Social Psychiatry and Psychiatric Epidemiology*, 48(6), 895–905. doi:10.1007/s00127-012-0615-5

Purpose: To determine conditional risk of posttraumatic stress disorder (PTSD) in two culturally distinct American Indian reservation communities. *Method:* Data derived from the American Indian Service Utilization, Psychiatric Epidemiology, Risk and Protective Factors Project, a cross-sectional population-based survey that was completed between 1997 and 2000. This study focused on 1,967 participants meeting the DSM-IV criteria for trauma exposure. Traumas were grouped into interpersonal, non-interpersonal, witnessed, and "trauma to close others" categories. Analyses examined distribution of worst traumas, conditional rates of PTSD following exposure, and distributions of PTSD cases deriving from these events. Bivariate and multivariate logistic regressions estimated associations of lifetime PTSD with trauma type. *Results:* Overall, 15.9 % of those exposed to DSM-IV trauma qualified for lifetime PTSD, a rate comparable to similar US studies. Women were more likely to develop PTSD than were men. The majority (60 %) of cases of PTSD among women derived from interpersonal trauma exposure (in particular, sexual and physical abuse); among men, cases were more evenly distributed across trauma categories. *Conclusions:* Previous research has demonstrated higher rates of both trauma exposure and PTSD in American Indian samples compared to other Americans. This study shows that conditional rates of PTSD are similar to those reported elsewhere, suggesting that the elevated prevalence of this disorder in American Indian populations is largely due to higher rates of trauma exposure.

Beals, J., Manson, S. M., Shore, J. H., Friedman, M., Ashcraft, M., Fairbank, J. A., & Schlenger, W. E. (2002). The prevalence of posttraumatic stress disorder among American Indian Vietnam veterans: Disparities and context. *Journal of Traumatic Stress*, 15(2), 89–97. doi:10.1023/A:1014894506325 This study employed data from two Congressionally mandated efforts (the American Indian

Vietnam Veterans Project and the National Vietnam Veterans Readjustment Study) to examine differential prevalence of posttraumatic stress disorder (PTSD) among 5 ethnically defined samples of male Vietnam theater veterans. Lay interviews assessed individual experiences before, during, and after the war from 1,798 male Vietnam theater veterans. Clinical reinterviews using the SCID were conducted with subsamples ($N = 487$). The prevalence of both 1-month and lifetime PTSD was higher for the 2 American Indian samples than for Whites. Once logistic regressions controlled for differential exposure to war-zone stress, ethnicity was no longer a significant predictor of PTSD.

Dohrenwend, B. P., Turner, J. B., Turse, N. A., Lewis-Fernandez, R., & Yager, T. J. (2008). **War-related post-traumatic stress disorder in Black, Hispanic, and majority White Vietnam veterans: The roles of exposure and vulnerability.** *Journal of Traumatic Stress*, 21(2), 133–141. doi:10.1002/jts.20327 Elevated prevalence rates of chronic posttraumatic stress disorder (PTSD) have been reported for Black and Hispanic Vietnam veterans. There has been no comprehensive explanation of these group differences. Moreover, previous research has relied on retrospective reports of war-zone stress and on PTSD assessments that fail to distinguish between prevalence and incidence. These limitations are addressed by use of record-based exposure measures and clinical diagnoses of a subsample of veterans from the National Vietnam Veterans Readjustment Study (NVVRS). Compared with Majority White, the Black elevation is explained by Blacks' greater exposure; the Hispanic elevation, by Hispanics' greater exposure, younger age, lesser education, and lower Armed Forces Qualification Test scores. The PTSD elevation in Hispanics versus Blacks is accounted for mainly by Hispanics' younger age.

Doran, J. M., Pietrzak, R. H., Hoff, R., & Harpaz-Rotem, I. (2017). **Psychotherapy utilization and retention in a national sample of veterans with PTSD: Treatment for veterans with PTSD.** *Journal of Clinical Psychology*, 73(10), 1259–1279. doi:10.1002/jclp.22445 *Objective:* This study examines the demographic, diagnostic, and military variables associated with psychotherapy utilization and retention in a national Veteran sample. *Method:* A large administrative VA dataset (142,620 Veterans) was utilized. Logistic regression was used to determine predictors of psychotherapy utilization and retention. *Results:* Female gender was associated with increased psychotherapy utilization and retention. Geriatric age was associated with less retention in individual psychotherapy. Being a racial minority was associated with decreased utilization, but increased retention in group therapy. The majority of comorbid diagnoses were associated with longer retention in treatment. Depression was associated with decreased utilization but longer treatment duration. Dimensional symptom assessment demonstrated relationships with the dependent variables. Avoidance symptoms did not emerge as a barrier to treatment. *Conclusion:* Differences in psychotherapy utilization and retention emerged across demographic, diagnostic and military variables, suggesting that these variables should inform outreach and treatment retention efforts for Veterans with PTSD.

Dye, B. A., Duran, D. G., Murray, D. M., Creswell, J. W., Richard, P., Farhat, T., Breen, N., & Engelgau, M. M. (2019). **The importance of evaluating health disparities research.** *American Journal of Public*

Health, 109(S1), S34–S40. doi:10.2105/AJPH.2018.304808 Health disparity populations are socially disadvantaged, and the multiple levels of discrimination they often experience mean that their characteristics and attributes differ from those of the mainstream. Programs and policies targeted at reducing health disparities or improving minority health must consider these differences. Despite the importance of evaluating health disparities research to produce high-quality data that can guide decision-making, it is not yet a customary practice. Although health disparities evaluations incorporate the same scientific methods as all evaluations, they have unique components such as population characteristics, sociocultural context, and the lack of health disparity common indicators and metrics that must be considered in every phase of the research. This article describes evaluation strategies grouped into 3 components: formative (needs assessments and process), design and methodology (multilevel designs used in real-world settings), and summative (outcomes, impacts, and cost). Each section will describe the standards for each component, discuss the unique health disparity aspects, and provide strategies from the National Institute on Minority Health and Health Disparities Metrics and Measures Visioning Workshop (April 2016) to advance the evaluation of health disparities research.

Friedman, M. J., Schnurr, P. P., Sengupta, A., Holmes, T., & Ashcraft, M. (2004). **The Hawaii Vietnam Veterans Project: Is minority status a risk factor for posttraumatic stress disorder?** *The Journal of Nervous and Mental Disease*, 192(1), 42–50. doi:10.1097/01.nmd.0000105999.57129.ee The Hawaii Vietnam Veterans Project (HVVP) was congressionally mandated as a follow-up to the National Vietnam Veterans Readjustment Study (NVVRS) to assess current and lifetime prevalence of posttraumatic stress disorder (PTSD). The Hawaii Vietnam Veterans Project used the original two-stage NVVRS design in which a lay interview, conducted with a large sample, was followed by a clinical interview with a smaller subsample. Reported results are from the clinical subsample consisting of 100 Native Hawaiian and 102 American of Japanese ancestry veterans compared with white veterans from the NVVRS cohort. The major finding is that veterans of Japanese ancestry exhibited significantly lower prevalence of current full, current partial, and lifetime full PTSD than white veterans. Adjustment for age and war zone exposure did not eliminate most of these differences. These results indicate that minority status per se is not a risk factor for PTSD.

Goldberg, S. B., Fortney, J. C., Chen, J. A., Young, B. A., Lehavot, K., & Simpson, T. L. (2020). **Military service and military health care coverage are associated with reduced racial disparities in time to mental health treatment initiation.** *Administration and Policy in Mental Health and Mental Health Services Research*, 47(4), 555–568. doi:10.1007/s10488-020-01017-2 We aimed to evaluate whether military service and access to veteran health care coverage attenuates racial/ethnic disparities in time to mental health treatment initiation for posttraumatic stress disorder (PTSD), major depressive disorder, and/or alcohol-use disorder. Results are based on 13,528 civilians and 1392 veterans from NESARC-III. Among civilians, racial/ethnic minorities reported longer time to PTSD and depression treatment initiation than non-Hispanic whites. Among veterans, racial/ethnic minorities did not differ from whites in time to PTSD and

depression treatment initiation, and showed shorter time to treatment initiation for alcohol-use disorder treatment. Racial/ethnic minorities with past year veteran health care coverage showed the strongest evidence for attenuated disparities.

Hale, A. C., Bohnert, K. M., Ganoczy, D., & Sripada, R. K. (2019). **Predictors of treatment adequacy during evidence-based psychotherapy for PTSD.** *Psychiatric Services*, 70(5), 367–373. doi:10.1176/appi.ps.201800361 *Objective:* The U.S. Department of Veterans Affairs (VA) has placed increased emphasis on the availability and use of evidence-based psychotherapies (EBPs) for posttraumatic stress disorder (PTSD). However, many individuals do not complete a full course of EBP. The current study aimed to quantify the percentage of veterans receiving adequate EBP in VA hospitals and identify factors related to treatment completion. *Methods:* A national sample of 16,559 VA patients who began cognitive processing therapy (CPT) or prolonged exposure (PE) during fiscal year 2015 was obtained via administrative data. Generalized estimating equations were used to evaluate individual-level predictors of treatment adequacy, defined as eight sessions within 14 weeks. Generalized linear models were used to examine facility-level factors. *Results:* A total of 5,142 (31.1%) veterans completed eight or more sessions of psychotherapy. Older age was associated with greater odds of completing eight or more sessions (odds ratio OR=1.02, 95% confidence interval [CI]=1.01, 1.02, $p<0.001$), and comorbid bipolar or psychotic disorders were associated with reduced odds of completion (OR=0.89, 95% CI=0.80, 0.99, $p=0.03$). The percentage of patients who completed eight or more sessions was higher at facilities with higher percentages of EBP use among all patients with PTSD ($\beta=6.55$, SE=1.97, $p=0.001$) and greater numbers of EBP-certified providers ($\beta=0.004$, SE=0.002, $p=0.038$) and lower at facilities with a higher percentage of patients receiving a PTSD Checklist ($\beta=-1.16$, SE=0.46, $p=0.011$). *Conclusions:* A minority of VA patients with PTSD complete an adequate dose of EBPs for PTSD. Individual and facility-level factors related to treatment adequacy may point to opportunities for intervention.

Jacobson, M. H., Norman, C., Sadler, P., Petrsoric, L. J., & Brackbill, R. M. (2019). **Characterizing mental health treatment utilization among individuals exposed to the 2001 World Trade Center terrorist attacks 14–15 years post-disaster.** *International Journal of Environmental Research and Public Health*, 16(4) 626. doi:10.3390/ijerph16040626 Following the World Trade Center (WTC) attacks in New York City (NYC) on 11 September 2001 (9/11), thousands in NYC experienced significant stress reactions and disorders, presenting an immediate need for counseling and treatment. While other studies documented post-9/11 mental health treatment utilization, none have data more than two years post-disaster. We used data from 35,629 enrollees of the WTC Health Registry, a longitudinal cohort study of those exposed to the WTC attacks, to examine predictors of counseling after 9/11, the types of practitioners seen, and the perceived helpfulness of therapy up to 15 years post-disaster. Among enrollees, 37.7% reported receiving counseling at some time after 9/11. Predictors of seeking counseling included race/ethnicity, age at 9/11, education level, exposure to the WTC attacks, other traumatic experiences, mental health symptomology, and pre-9/11 counseling. Whites and Hispanics,

those who were children on 9/11, and those with high levels of exposure to the WTC attacks sought counseling soonest after 9/11. Among those who sought counseling, Blacks, Asians, and those with lower education and income were less likely to see mental health specialists and more likely to see general practitioners or religious advisors. Finally, among those who sought recent counseling, women, Blacks, those aged ≥ 65 years, and those with very high WTC exposures were more likely to rate their recent counseling as very helpful. This study used data up to 15 years post-disaster to document mental health treatment utilization patterns, trends, and disparities that have implications for future preparedness plans and needs assessments.

Jeffries, N., Zaslavsky, A. M., Diez Roux, A. V., Creswell, J. W., Palmer, R. C., Gregorich, S. E., Reschovsky, J. D., Graubard, B. I., Choi, K., Pfeiffer, R. M., Zhang, X., & Breen, N. (2019).

Methodological approaches to understanding causes of health disparities. *American Journal of Public Health, 109*(S1), S28–S33.

[doi:10.2105/AJPH.2018.304843](https://doi.org/10.2105/AJPH.2018.304843) Understanding health disparity causes is an important first step toward developing policies or interventions to eliminate disparities, but their nature makes identifying and addressing their causes challenging. Potential causal factors are often correlated, making it difficult to distinguish their effects. These factors may exist at different organizational levels (e.g., individual, family, neighborhood), each of which needs to be appropriately conceptualized and measured. The processes that generate health disparities may include complex relationships with feedback loops and dynamic properties that traditional statistical models represent poorly. Because of this complexity, identifying disparities' causes and remedies requires integrating findings from multiple methodologies. We highlight analytic methods and designs, multilevel approaches, complex systems modeling techniques, and qualitative methods that should be more broadly employed and adapted to advance health disparities research and identify approaches to mitigate them.

Liu, H., Petukhova, M. V., Sampson, N. A., Aguilar-Gaxiola, S., Alonso, J., Andrade, L. H., Bromet, E. J., de Girolamo, G., Haro, J. M., Hinkov, H., Kawakami, N., Koenen, K. C., Kovess-Masfety, V., Lee, S., Medina-Mora, M. E., Navarro-Mateu, F., O'Neill, S., Piazza, M., Posada-Villa, J., Scott, K. M., ... Kessler, R. C. (2017).

Association of DSM-IV posttraumatic stress disorder with traumatic experience type and history in the World Health Organization World Mental Health Surveys. *JAMA Psychiatry, 74*(3), 270–281. [doi:10.1001/jamapsychiatry.2016.3783](https://doi.org/10.1001/jamapsychiatry.2016.3783)

Importance: Previous research has documented significant variation in the prevalence of posttraumatic stress disorder (PTSD) depending on the type of traumatic experience (TE) and history of TE exposure, but the relatively small sample sizes in these studies resulted in a number of unresolved basic questions. **Objective:** To examine disaggregated associations of type of TE history with PTSD in a large cross-national community epidemiologic data set. **Design, Setting, and Participants:** The World Health Organization World Mental Health surveys assessed 29 TE types (lifetime exposure, age at first exposure) with DSM-IV PTSD that was associated with 1 randomly selected TE exposure (the random TE) for each respondent. Surveys were administered in 20 countries ($n=34\ 676$ respondents) from 2001 to 2012. Data were analyzed

from October 1, 2015, to September 1, 2016. **Main Outcomes and Measures:** Prevalence of PTSD assessed with the Composite International Diagnostic Interview. **Results:** Among the 34 676 respondents (55.4% [SE, 0.6%] men and 44.6% [SE, 0.6%] women; mean [SE] age, 43.7 [0.2] years), lifetime TE exposure was reported by a weighted 70.3% of respondents (mean [SE] number of exposures, 4.5 [0.04] among respondents with any TE). Weighted (by TE frequency) prevalence of PTSD associated with random TEs was 4.0%. Odds ratios (ORs) of PTSD were elevated for TEs involving sexual violence (2.7; 95% CI, 2.0–3.8) and witnessing atrocities (4.2; 95% CI, 1.0–17.8). Prior exposure to some, but not all, same-type TEs was associated with increased vulnerability (eg, physical assault; OR, 3.2; 95% CI, 1.3–7.9) or resilience (eg, participation in sectarian violence; OR, 0.3; 95% CI, 0.1–0.9) to PTSD after the random TE. The finding of earlier studies that more general history of TE exposure was associated with increased vulnerability to PTSD across the full range of random TE types was replicated, but this generalized vulnerability was limited to prior TEs involving violence, including participation in organized violence (OR, 1.3; 95% CI, 1.0–1.6), experience of physical violence (OR, 1.4; 95% CI, 1.2–1.7), rape (OR, 2.5; 95% CI, 1.7–3.8), and other sexual assault (OR, 1.6; 95% CI, 1.1–2.3). **Conclusion and Relevance:** The World Mental Health survey findings advance understanding of the extent to which PTSD risk varies with the type of TE and history of TE exposure. Previous findings about the elevated PTSD risk associated with TEs involving assaultive violence was refined by showing agreement only for repeated occurrences. Some types of prior TE exposures are associated with increased resilience rather than increased vulnerability, connecting the literature on TE history with the literature on resilience after adversity. These results are valuable in providing an empirical rationale for more focused investigations of these specifications in future studies.

Maguen, S., Holder, N., Li, Y., Madden, E., Neylan, T. C., Seal, K. H., Lujan, C., Patterson, O. V., DuVall, S. L., & Shiner, B. (2020).

Factors associated with PTSD symptom improvement among Iraq and Afghanistan veterans receiving evidence-based psychotherapy. *Journal of Affective Disorders, 273*, 1–7.

[doi:10.1016/j.jad.2020.04.039](https://doi.org/10.1016/j.jad.2020.04.039) **Background:** Despite availability of evidence-based psychotherapies (EBPs) for posttraumatic stress disorder (PTSD), not all veterans who initiate EBPs experience benefit. Better understanding factors associated with clinically significant improvement can help ameliorate care. **Methods:** A cohort of Iraq and Afghanistan War veterans who initiated an EBP was identified ($N = 32,780$) with ≥ 1 post-deployment psychotherapy visit at the Veterans Health Administration from 10/2001–6/2017, a post-deployment PTSD diagnosis, and ≥ 2 PTSD symptom measures. We used random-effects logistic regression to assess whether patient-level, diagnostic, and treatment factors were associated with achieving symptom improvement. **Results:** Increased odds of PTSD symptom improvement were seen in women (OR = 1.19; 95% CI: 1.09–1.29), those who initiated EBP within a year of engaging in mental healthcare compared with the delayed EBP group (OR = 1.20; 95% CI: 1.14–1.28), those who completed at least 8 EBP sessions in 16 weeks (OR = 1.23; 95% CI: 1.11–1.36), those who received PE only (vs. CPT or both; OR = 2.23; 95% CI: 1.86–2.68) or CPT individual therapy only (vs. CPT

group or both; OR = 1.34; 95% CI: 1.22--1.48), and those with a drug dependence diagnosis (OR = 1.24; 95% CI: 1.11--1.39). Decreased odds of improvement were seen in Black veterans (OR=0.75; 95% CI: 0.69--0.81) and those with service-connected disability (OR = 0.61; 95% CI: 0.52--0.71). *Limitations:* Diagnoses were from medical charts and not confirmed with gold standard assessment tools; we only included veterans with at least two PTSD measurements, which may cause bias. *Conclusion:* modifiable factors associated with PTSD improvement (timing, dose, and modality) can be used to improve EBP outcomes.

Marx, B. P., Engel-Rebitzer, E., Bovin, M. J., Parker-Guilbert, K. S., Moshier, S., Barretto, K., Szafranski, D., Gallagher, M. W., Holowka, D. W., Rosen, R. C., & Keane, T. M. (2017). **The influence of veteran race and psychometric testing on veterans affairs posttraumatic stress disorder (PTSD) disability exam outcomes.** *Psychological Assessment, 29*(6), 710–719. doi:10.1037/pas0000378 This study examined the influence of veterans' race and examiners' use of psychometric testing during a Department of Veterans Affairs posttraumatic stress disorder (PTSD) disability examination on diagnostic and service connection status outcomes. Participants were 764 veterans enrolled in a national longitudinal registry. Current and lifetime PTSD diagnostic status was determined with the Structured Clinical Interview for DSM-IV (SCID) and was compared with PTSD diagnosis conferred upon veterans by their compensation and pension (C&P) examiners as well as with ultimate Veterans Affairs (VA) PTSD service connected status. The concordance rate between independent SCID current PTSD diagnosis and PTSD disability examination diagnosis was 70.4%, and between SCID lifetime PTSD diagnosis and PTSD disability examination diagnosis was 77.7%. Among veterans with current SCID diagnosed PTSD, Black veterans were significantly less likely than White veterans to receive a PTSD diagnosis from their C&P examiner (odds ratio [OR] = .39, $p = .003$, confidence interval [CI] = .20–.73). Among veterans without current SCID diagnosed PTSD, White veterans were significantly more likely than Black veterans to receive a PTSD diagnosis from their C&P examiner (OR = 4.07, $p = .005$, CI = 1.51–10.92). Splitting the sample by use of psychometric testing revealed that examinations that did not include psychometric testing demonstrated the same relation between veteran race and diagnostic concordance. However, for examinations in which psychometric testing was used, the racial disparity between SCID PTSD status and disability exam PTSD status was no longer significant. Results suggest that psychometric testing may reduce disparities in VA PTSD disability exam outcomes.

McLaughlin, K. A., Alvarez, K., Fillbrunn, M., Green, J. G., Jackson, J. S., Kessler, R. C., Sadikova, E., Sampson, N. A., Vilsaint, C. L., Williams, D. R., & Alegria, M. (2019). **Racial/ethnic variation in trauma-related psychopathology in the United States: A population-based study.** *Psychological Medicine, 49*(13), 2215–2226. doi:10.1017/S0033291718003082 *Background:* The prevalence of mental disorders among Black, Latino, and Asian adults is lower than among Whites. Factors that explain these differences are largely unknown. We examined whether racial/ethnic differences in exposure to traumatic events

(TEs) or vulnerability to trauma-related psychopathology explained the lower rates of psychopathology among racial/ethnic minorities. *Methods:* We estimated the prevalence of TE exposure and associations with onset of DSM-IV depression, anxiety and substance disorders and with lifetime post-traumatic stress disorder (PTSD) in the Collaborative Psychiatric Epidemiology Surveys, a national sample ($N = 13\,775$) with substantial proportions of Black (35.9%), Latino (18.9%), and Asian Americans (14.9%). *Results:* TE exposure varied across racial/ethnic groups. Asians were most likely to experience organized violence – particularly being a refugee – but had the lowest exposure to all other TEs. Blacks had the greatest exposure to participation in organized violence, sexual violence, and other TEs, Latinos had the highest exposure to physical violence, and Whites were most likely to experience accidents/injuries. Racial/ethnic minorities had lower odds ratios of depression, anxiety, and substance disorder onset relative to Whites. Neither variation in TE exposure nor vulnerability to psychopathology following TEs across racial/ethnic groups explained these differences. Vulnerability to PTSD did vary across groups, however, such that Asians were less likely and Blacks more likely to develop PTSD following TEs than Whites. *Conclusions:* Lower prevalence of mental disorders among racial/ethnic minorities does not appear to reflect reduced vulnerability to TEs, with the exception of PTSD among Asians. This highlights the importance of investigating other potential mechanisms underlying racial/ethnic differences in psychopathology.

Roberts, A. L., Gilman, S. E., Breslau, J., Breslau, N., & Koenen, K. C. (2011). **Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States.** *Psychological Medicine, 41*(1), 71–83. doi:10.1017/S0033291710000401 *Background:* To identify sources of race/ethnic differences related to post-traumatic stress disorder (PTSD), we compared trauma exposure, risk for PTSD among those exposed to trauma, and treatment-seeking among Whites, Blacks, Hispanics and Asians in the US general population. *Method:* Data from structured diagnostic interviews with 34 653 adult respondents to the 2004–2005 wave of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) were analysed. *Results:* The lifetime prevalence of PTSD was highest among Blacks (8.7%), intermediate among Hispanics and Whites (7.0% and 7.4%) and lowest among Asians (4.0%). Differences in risk for trauma varied by type of event. Whites were more likely than the other groups to have any trauma, to learn of a trauma to someone close, and to learn of an unexpected death, but Blacks and Hispanics had higher risk of child maltreatment, chiefly witnessing domestic violence, and Asians, Black men, and Hispanic women had higher risk of war-related events than Whites. Among those exposed to trauma, PTSD risk was slightly higher among Blacks [adjusted odds ratio (aOR) 1.22] and lower among Asians (aOR 0.67) compared with Whites, after adjustment for characteristics of trauma exposure. All minority groups were less likely to seek treatment for PTSD than Whites (aOR range: 0.39–0.61), and fewer than half of minorities with PTSD sought treatment (range: 32.7–42.0%). *Conclusions:* When PTSD affects US race/ethnic

minorities, it is usually untreated. Large disparities in treatment indicate a need for investment in accessible and culturally sensitive treatment options.

Sibrava, N. J., Bjornsson, A. S., Pérez Benítez, A. C. I., Moitra, E., Weisberg, R. B., & Keller, M. B. (2019). **Posttraumatic stress disorder in African American and Latinx adults: Clinical course and the role of racial and ethnic discrimination.** *American Psychologist, 74*(1), 101–116. doi:10.1037/amp0000339 Research has suggested that African American and Latinx adults may develop posttraumatic stress disorder (PTSD) at higher rates than White adults, and that the clinical course of PTSD in these minority groups is poor. Factors that may contribute to higher prevalence and poorer outcome in these groups are sociocultural factors and racial stressors, such as experiences with discrimination. To date, however, no research has explored the relationship between experiences with discrimination and risk for PTSD, and very little research has examined the course of illness for PTSD in African American and Latinx samples. The present study examined these variables in the only longitudinal clinical sample of 139 Latinx and 152 African American adults with anxiety disorders, the Harvard/Brown Anxiety Research Project—Phase II. Over 5 years of follow-up, remission rates for African Americans and Latinx adults with PTSD in this sample were 0.35 and 0.15, respectively, and reported frequency of experiences with discrimination significantly predicted PTSD diagnostic status in this sample, but did not predict any other anxiety or mood disorder. These findings demonstrate the chronic course of PTSD in African American and Latinx adults, and highlight the important role that racial and ethnic discrimination may play in the development of PTSD among these populations. Implications for an increased focus on these sociocultural stressors in the assessment and treatment of PTSD in African American and Latinx individuals are discussed.

Smedley, B. D., Stith, A. Y., Nelson, A. R., & Institute of Medicine (U.S.) Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care.* National Academy Press. doi:10.17226/12875

Spoont, M. R., Sayer, N. A., Kehle-Forbes, S. M., Meis, L. A., & Nelson, D. B. (2017). **A prospective study of racial and ethnic variation in VA psychotherapy services for PTSD.** *Psychiatric Services, 68*(3), 231–237. doi:10.1176/appi.ps.201600086 *Objectives:* To determine whether there are racial or ethnic disparities in receipt of U.S. Department of Veterans Affairs (VA) psychotherapy services for veterans with posttraumatic stress disorder (PTSD), the authors examined the odds of receipt of any psychotherapy and of individual psychotherapy among self-identified racial and ethnic groups for six months after individuals were diagnosed as having PTSD. *Methods:* Data were from a national prospective cohort study of 6,884 veterans with PTSD. Patients with no mental health care in the prior year were surveyed immediately following receipt of a PTSD diagnosis. VA databases were used to determine mental health service use. Analyses controlled for treatment need, access to services, and treatment beliefs. *Results:* Among veterans with PTSD initially seen in VA mental health treatment settings, Latino veterans were less likely

than white veterans to receive any psychotherapy, after the analyses controlled for treatment need, access, and beliefs. Among those initially seen in mental health settings who received some psychotherapy services, Latinos, African Americans, and Asian/Pacific Islanders were less likely than white veterans to receive any individual therapy. These racial-ethnic differences in psychotherapy receipt were due to factors occurring between VA health care networks as well as factors occurring within networks. Drivers of disparities differed across racial and ethnic groups. *Conclusions:* Inequity in psychotherapy services for some veterans from racial and ethnic minority groups with PTSD were due to factors operating both within and between health care networks.

Steenkamp, M. M., Schlenger, W. E., Corry, N., Henn-Haase, C., Qian, M., Li, M., Horesh, D., Karstoft, K.-I., Williams, C., Ho, C.-L., Shalev, A., Kulka, R., & Marmar, C. (2017). **Predictors of PTSD 40 years after combat: Findings from the National Vietnam Veterans longitudinal study.** *Depression and Anxiety, 34*(8), 711–722. doi:10.1002/da.22628 *Background:* Few studies have longitudinally examined predictors of posttraumatic stress disorder (PTSD) in a nationally representative sample of US veterans. We examined predictors of warzone-related PTSD over a 25-year span using data from the National Vietnam Veterans Longitudinal Study (NVVLS). *Methods:* The NVVLS is a follow-up study of Vietnam theater veterans ($N = 699$) previously assessed in the National Vietnam Veterans Readjustment Study (NVVRS), a large national-probability study conducted in the late 1980s. We examined the ability of 22 premilitary, warzone, and postmilitary variables to predict current warzone-related PTSD symptom severity and PTSD symptom change in male theater veterans participating in the NVVLS. Data included a self-report Health Questionnaire survey and a computer-assisted telephone Health Interview Survey. Primary outcomes were self-reported PTSD symptoms assessed by the PTSD Checklist for DSM-5 (PCL 5) and Mississippi PTSD Scale (M-PTSD). *Results:* Predictors of current PTSD symptoms most robust in hierarchical multivariable models were African-American race, lower education level, negative homecoming reception, lower current social support, and greater past-year stress. PTSD symptoms remained largely stable over time, and symptom exacerbation was predicted by African-American race, lower education level, younger age at entry into Vietnam, greater combat exposure, lower current social support, and greater past-year stressors. *Conclusions:* Findings confirm the robustness of a select set of risk factors for warzone-related PTSD, establishing that these factors can predict PTSD symptom severity and symptom change up to 40 years postdeployment.

Tsai, J., & Kong, G. (2012). **Mental health of Asian American and Pacific Islander military veterans: Brief review of an understudied group.** *Military Medicine, 177*(11), 1438–1444. doi:10.7205/MILMED-D-12-00214 The mental health of American military soldiers and veterans is of widespread concern; yet, there has been no prior review of studies on Asian Americans and Pacific Islanders (AAPIs) veterans. This article provides a brief, but comprehensive review of the mental health of AAPI veterans. An exhaustive literature search was conducted using the major medical and mental health literature databases. Of 13 identified articles, nine were empirical studies on either post-traumatic stress disorder among AAPI Vietnam veterans or health functioning of

AAPI veterans based on national veteran surveys. Findings from these studies showed that some AAPI veterans who served during the Vietnam War encountered racism from fellow soldiers and race-related stressors were associated with more severe post-traumatic stress disorder symptoms. As a group, AAPI veterans were found to be physically healthier than other veterans, but reported poorer mental health and were less likely to use mental health services. However, these findings were limited by the paucity of studies on AAPI veterans and suggest a need for more research on this subpopulation.

Tsai, J., Whealin, J. M., & Pietrzak, R. H. (2014). **Asian American and Pacific Islander military veterans in the United States: Health service use and perceived barriers to mental health services.** *American Journal of Public Health, 104*(Suppl 4), S538–S547. doi:10.2105/AJPH.2014.302124 *Objectives:* We (1) compared use of various health services nationally between Asian American and Pacific Islander (AA/PI) veterans and veterans of other racial/ethnic groups and (2) specifically compared perceived barriers and stigma related to mental health services. *Methods:* Using bivariate and multivariable statistics, we analyzed a population-weighted sample of 8315 veterans from the 2010 National Survey of Veterans and a random sample of 567 recent veterans from Hawaii. *Results:* A total of 1.5% of veterans were AA/PI compared with 0.4% a decade ago. Compared with other veterans, AA/PI veterans reported higher socioeconomic status and better mental health, although these findings may be specific to AA veterans. Adjusting for sociodemographic and health differences, we found no differences in health service use or perceived barriers or stigma related to mental health services. *Conclusions:* AA/PIs are a small but fast-growing racial/ethnic group within the veteran population that deserves attention. Although veteran status may be protective against some barriers to mental health care found in the general AA/PI population, efforts to reduce barriers to health care among veterans should be continued.

Wey, A., Davis, J., Juarez, D. T., & Sentell, T. (2018). **Distinguishing between primary and secondary racial identification in analyses of health disparities of a multiracial population in Hawaii.** *Ethnicity & Health, 23*(3), 233–248. doi:10.1080/13557858.2016.1263284 *Objective:* To examine the importance of distinguishing between primary and secondary racial identification in analyzing health disparities in a multiracial population. *Methods:* A cross-sectional analysis of 2012 Hawaii Behavioral Risk Factor Surveillance System (H-BRFSS). As part of the survey, respondents were asked to identify all their races, and then which race they considered to be their primary race. We introduce two analytic approaches to investigate the association between multiracial status and general health: (1) including two separate dichotomous variables for each racial group (primary and secondary race; for example, 'primary Native Hawaiian' and, separately, 'secondary Native Hawaiian'), and (2) including one combined variable for anyone choosing a particular racial group, whether as primary or secondary race ('combined race'; e.g. Native Hawaiian). Linear regression then compares the multiracial health disparities identified by the two approaches, adjusted for age and gender. *Results:* The 2012 H-BRFSS had 7582 respondents. The four most common self-identified primary racial/ethnic groups were White, Japanese, Filipino, and Native

Hawaiian. Native Hawaiians were the largest multiracial group with over 80% self-identifying as multiracial. Health disparities for Native Hawaiians, Portuguese and Puerto Ricans were attenuated by 10% after accounting for multiracial status. Populations that self-identified secondarily as Japanese, Puerto Rican, Mexican, and other PI had significantly poorer self-reported health. *Conclusion:* The analysis illustrates the importance of accounting for multiracial populations in health disparities research and demonstrates the ability of two approaches to identify multiracial health disparities in data sets with limited sample sizes. The 'primary and secondary race' approach might work particularly well for a multicultural population like Hawaii.

WHO Commission on Social Determinants of Health, & World Health Organization (Eds.). (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health: Commission on Social Determinants of Health final report.* World Health Organization, Commission on Social Determinants of Health.

Williams, D. R. (2018). **Stress and the Mental Health of Populations of Color: Advancing Our Understanding of Race-related Stressors.** *Journal of Health and Social Behavior, 59*(4), 466–485. doi:10.1177/0022146518814251 This article provides an overview of research on race-related stressors that can affect the mental health of socially disadvantaged racial and ethnic populations. It begins by reviewing the research on self-reported discrimination and mental health. Although discrimination is the most studied aspect of racism, racism can also affect mental health through structural/institutional mechanisms and racism that is deeply embedded in the larger culture. Key priorities for research include more systematic attention to stress proliferation processes due to institutional racism, the assessment of stressful experiences linked to natural or manmade environmental crises, documenting and understanding the health effects of hostility against immigrants and people of color, cataloguing and quantifying protective resources, and enhancing our understanding of the complex association between physical and mental health.

Williams, D. R., Lawrence, J. A., Davis, B. A., & Vu, C. (2019). **Understanding how discrimination can affect health.** *Health Services Research, 54*(S2), 1374–1388. doi:10.1111/1475-6773.13222 *Background:* To provide an overview of the empirical research linking self-reports of racial discrimination to health status and health service utilization. *Methods:* A review of literature reviews and meta-analyses published from January 2013 to 2019 was conducted using PubMed, PsycINFO, Sociological Abstracts, and Web of Science. Articles were considered for inclusion using the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) framework. *Results:* Twenty-nine studies met the criteria for review. Both domestic and international studies find that experiences of discrimination reported by adults are adversely related to mental health and indicators of physical health, including preclinical indicators of disease, health behaviors, utilization of care, and adherence to medical regimens. Emerging evidence also suggests that discrimination can affect the health of children and adolescents and that at least some of its adverse effects may be ameliorated by the presence of psychosocial resources. *Conclusions:* Increasing evidence indicates that racial discrimination is an emerging risk factor for disease and a contributor to racial

disparities in health. Attention is needed to strengthen research gaps and to advance our understanding of the optimal interventions that can reduce the negative effects of discrimination.

Additional Citations

Abrams, J. A., Tabac, A., Jung, S., & Else-Quest, N. M. (2020). **Considerations for employing intersectionality in qualitative health research.** *Social Science & Medicine*, 258, 113138. doi:10.1016/j.socscimed.2020.113138 This article provides an overview of qualitative methods and their application to exploring intersectionalities and the application of intersectionality theory to qualitative methods.

Alegria, M., Alvarez, K., Ishikawa, R. Z., DiMarzio, K., & McPeck, S. (2016). **Removing obstacles to eliminating racial and ethnic disparities in behavioral health care.** *Health Affairs*, 35(6), 991–999. doi:10.1377/hlthaff.2016.0029 This policy paper includes a discussion of the limited effectiveness of prior efforts to address disparities in mental health care, examines assumptions underlying those efforts, and provides clinical and policy recommendations to mitigate disparities.

Brooks Holliday, S., Dubowitz, T., Haas, A., Ghosh-Dastidar, B., DeSantis, A., & Troxel, W. M. (2020). **The association between discrimination and PTSD in African Americans: Exploring the role of gender.** *Ethnicity & Health*, 25(5), 717–731. doi:10.1080/13557858.2018.1444150 This study examined the association between discrimination and PTSD, controlling for other psychosocial stressors, within a sample of predominantly African American women. Experiences of discrimination were significantly associated with PTSD symptoms, controlling for psychological distress, perceived safety, and neighborhood crime.

Diez Roux, A. V. (2012). **Conceptual approaches to the study of health disparities.** *Annual Review of Public Health*, 33, 41–58. doi:10.1146/annurev-publhealth-031811-124534 This article reviews common conceptual approaches to health disparities. Strengths and limitations of these approaches are highlighted. The article concludes by outlining key elements and implications of an integrative systems-based conceptual model.

Klein, D. J., Elliott, M. N., Haviland, A. M., Morrison, P. A., Orr, N., Gaillot, S., & Weech-Maldonado, R. (2019). **A comparison of methods for classifying and modeling respondents who endorse multiple racial/ethnic categories: A health care experience application.** *Medical Care*, 57(6), e34. doi:10.1097/MLR.0000000000001012 This paper uses data from 259,763 Medicare beneficiaries age 65+ who responded to the 2017 Medicare Consumer Assessments of Healthcare Providers and Systems Survey and reported race/ethnicity. The study compared the predictive power of three methods for classifying race/ethnicity to model patient experience outcomes.

Lester, K., Resick, P. A., Young-Xu, Y., & Artz, C. (2010). **Impact of race on early treatment termination and outcomes in posttraumatic stress disorder treatment.** *Journal of Consulting and Clinical Psychology*, 78(4), 480–489. doi:10.1037/a0019551 This was an RCT of cognitive processing therapy for PTSD among

women. Intent to treat analyses suggested that there were non-significant Black-White differences in PTSD symptom reduction following CPT, though Black women were more likely to drop out of treatment early.

Maguen, S., Li, Y., Madden, E., Seal, K. H., Neylan, T. C., Patterson, O. V., DuVall, S. L., Lujan, C., & Shiner, B. (2019). **Factors associated with completing evidence-based psychotherapy for PTSD among veterans in a national healthcare system.** *Psychiatry Research*, 274, 112–128. doi:10.1016/j.psychres.2019.02.027 This paper reports on a retrospective cohort study of all Iraq and Afghanistan War Veterans who received a post-deployment PTSD diagnosis from 2001–2015 at a VA facility and had at least one coded post-deployment psychotherapy visit. Using natural language processing, they examined utilization of PE and CPT during any 24-week period and examined correlates of treatment completion.

McClendon, J., Perkins, D., Copeland, L. A., Finley, E. P., & Vogt, D. (2019). **Patterns and correlates of racial/ethnic disparities in posttraumatic stress disorder screening among recently separated veterans.** *Journal of Anxiety Disorders*, 68, 102145. doi:10.1016/j.janxdis.2019.102145 Report of racial and ethnic differences in PTSD screening rates in a diverse sample of 9,420 recently separated military Veterans. Findings indicate significantly greater likelihood of positive PTSD screening among Black/African American, Hispanic/Latinx and multiracial Veterans compared with White Veterans. Correlates of these disparities include income, education, trauma exposure, life stress and social support.

Murdoch, M., Hodges, J., Cowper, D., Fortier, L., & van Ryn, M. (2003). **Racial disparities in VA service connection for posttraumatic stress disorder disability.** *Medical Care*, 41(4), 536–549. doi:10.1097/01.MLR.0000053232.67079.A5 This study was the first study to evaluate whether there are racial/ethnic disparities in the receipt of VA disability award status for PTSD. The authors combined survey data of PTSD symptoms, functioning, and trauma exposure with VA disability status (i.e., service connection) from administrative data. Analyses evaluated whether award differences by race were due to differences in symptoms, functioning, trauma exposure, education, age, gender, or medical comorbidities.

Redd, A. M., Gundlapalli, A. V., Suo, Y., Pettey, W. B. P., Brignone, E., Chin, D. L., Walker, L. E., Poltavskiy, E. A., Janak, J. C., Howard, J. T., Sosnov, J. A., & Stewart, I. J. (2020). **Exploring disparities in awarding VA service-connected disability for post-traumatic stress disorder for active duty military service members from recent conflicts in Iraq and Afghanistan.** *Military Medicine*, 185(Supplement_1), 296–302. doi:10.1093/milmed/usz208 This study used Department of Defense data on service members who separated from October 1, 2001 to May 2017 and linked those files to VA administrative data (n=1,558,449). They then modeled the odds of receiving VA disability benefits for PTSD conditional on a VA diagnosis of PTSD. Although the odds of being diagnosed were comparable for Black as for White Veterans, Black and Women Veterans were less likely to be awarded VA disability benefits.

Rosen, C. S., Bernardy, N. C., Chard, K. M., Clothier, B., Cook, J. M., Crowley, J., Eftekhari, A., Kehle-Forbes, S. M., Mohr, D. C., Noorbaloochi, S., Orazem, R. J., Ruzek, J. I., Schnurr, P. P., Smith, B. N., & Sayer, N. A. (2019). **Which patients initiate cognitive processing therapy and prolonged exposure in department of veterans affairs PTSD clinics?** *Journal of Anxiety Disorders, 62*, 53–60. [doi:10.1016/j.janxdis.2018.11.003](https://doi.org/10.1016/j.janxdis.2018.11.003) This observational study examined correlates of evidence based psychotherapy receipt among Veterans receiving any psychotherapy for PTSD in one of nine VA PTSD specialty clinics over a one year period (n=6,251). Veterans were Latinx were 10% less likely to have received an evidence based psychotherapy vs. some other type of therapy.

Spoont, M., Nelson, D. B., Murdoch, M., Sayer, N. A., Nugent, S., Rector, T., & Westermeyer, J. (2015). **Are there racial/ethnic disparities in VA PTSD treatment retention?** *Depression and Anxiety, 32*(6), 415–425. [doi:10.1002/da.22295](https://doi.org/10.1002/da.22295) This paper reports on a prospective national cohort study (n=6,788) that examined racial/ethnic disparities in VA mental health treatment retention among Veterans with PTSD over a six-month period. The study combined surveys administered at the beginning of the treatment episode with administrative service utilization data. African American and Latinx Veterans were more likely than White Veterans to discontinue pharmacotherapy.

Sripada, R. K., Blow, F. C., Rauch, S. A. M., Ganoczy, D., Hoff, R., Harpaz-Rotem, I., & Bohnert, K. M. (2019). **Examining the nonresponse phenomenon: Factors associated with treatment response in a national sample of veterans undergoing residential PTSD treatment.** *Journal of Anxiety Disorders, 63*, 18–25. [doi:10.1016/j.janxdis.2019.02.001](https://doi.org/10.1016/j.janxdis.2019.02.001) This study examined predictors of treatment response among a national sample of Veterans engaged in VA residential PTSD treatment from 2012 to 2013 (n = 2,715). Black and Asian/Pacific Islander Veterans had less PTSD symptom reduction than White Veterans and fewer Black Veterans experienced symptom reduction associated with clinically significant improvement.

Sripada, R. K., Pfeiffer, P. N., Rampton, J., Ganoczy, D., Rauch, S. A. M., Polusny, M. A., & Bohnert, K. M. (2017). **Predictors of PTSD symptom change among outpatients in the U.S. Department of Veterans Affairs Health Care system: Predictors of PTSD symptom change.** *Journal of Traumatic Stress, 30*(1), 45–53. [doi:10.1002/jts.22156](https://doi.org/10.1002/jts.22156) This retrospective cohort study used latent trajectory analysis to model symptom trajectories among Veterans with PTSD who had at least 4 PCLs in a 12-week period in their medical records. They then examined associations between demographic characteristics and comorbidities with the 3 symptom trajectories (mild-improving; moderate-improving, severe-stable). Veterans of non-White race and those who were Hispanic were more likely to belong to the more severe symptom trajectories.

Whitehead, M. (1992). **The Concepts and Principles of Equity and Health.** *International Journal of Health Services, 22*(3), 429–445. [doi:10.2190/986L-LHQ6-2VTE-YRRN](https://doi.org/10.2190/986L-LHQ6-2VTE-YRRN) An early but comprehensive discussion of the importance of equity in health from a global perspective.