

University of Nevada, Reno

PTSD Symptom Clusters Among People of Color

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in
Psychology

by

Monica Zepeda Rojo

William T. O'Donohue, Ph.D., Advisor

Lorraine T. Benuto, Ph.D., Co-Advisor

May, 2024



THE GRADUATE SCHOOL

We recommend that the dissertation
prepared under our supervision by

MONICA ZEPEDA ROJO

entitled

PTSD Symptom Clusters Among People of Color

be accepted in partial fulfillment of the
requirements for the degree of

DOCTOR OF PHILOSOPHY

William O'Donohue, Ph.D.
Advisor

Lorraine Benuto, Ph.D.
Co-advisor

Jane Fisher, Ph.D.
Committee Member

Melanie Duckworth, Ph.D.
Committee Member

Karla Hernandez, Ph.D.
Graduate School Representative

Markus Kemmelmeier, Ph.D., Dean
Graduate School

May, 2024

Abstract

As the U.S. has grown increasingly diverse, with people of color now comprising over 40% of the population, understanding how Post-Traumatic Stress Disorder (PTSD) impacts different ethnic groups is crucial. PTSD is a debilitating condition that emerges after traumatic events, affecting individuals' daily lives and overall well-being. While previous research has examined PTSD prevalence rates across ethnicities and trauma types, there is a significant gap in understanding if and how specific PTSD symptom clusters vary among different ethnic groups. This study aimed to fill this gap. Data was collected via Prolific and the psychology subject pool. Analyzing data from 72 participants with probable PTSD, the study found varying prevalence rates of PTSD across ethnic groups although we were not sufficiently powered to examine differences across ethnic subgroups. Differences in symptom clusters across ethnic groups were not statistically significant. These findings highlight common trauma responses across ethnic groups.

Table of Contents

Chapter 1: Introduction	1
Chapter 2: Review of the Literature	5
Chapter 3: Methodology.....	17
Chapter 4: Results.....	22
Chapter 5: Discussion.....	36
References.....	45

Chapter 1: Introduction

According to the American Psychiatric Association (APA), Post-Traumatic Stress Disorder (PTSD) is a serious mental illness that develops in people when they are exposed to stressful situations (APA, 2013). It is defined by a broad range of symptoms that have the potential to negatively impact people's everyday activities and general state of health. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) classifies these symptoms into four primary clusters. The DSM-5 places particular emphasis on the behavioral symptoms associated with PTSD, such as avoidance, re-experiencing, negative cognitions, mood, and arousal.

The US Census Bureau (2020), indicates that ethnic and racial minorities now make up over 40% of the nation's overall population, reflecting the significant rise in diversity that has occurred in recent years in the US. According to the U.S. Department of Federal Affairs, six percent of people will experience PTSD at some point in their lives. Although African American, Asian, and Latinx ethnic minority groups are the three main categories used to classify minority populations, it's crucial to acknowledge the differences that exists within these groups.

Different ethnic groups may exhibit these symptom clusters differently in terms of presentation and prevalence (Marshall, Schell, & Miles, 2009; Coleman, Ingram, K. M., & Sheerin, C. M., 2019). Nevertheless, there is an apparent gap in the literature on potential ethnic differences across the symptom clusters in PTSD. In fact, the majority of research efforts have been directed towards examining ethnic differences in a specific

symptom cluster among a single ethnic group. Based on what little research is available, some authors have implied that different racial and ethnic communities experience and exhibit PTSD symptoms differently (Hinton et al., 2009). African American individuals, for example, may display intrusive symptoms associated with race-based trauma, which are a reflection of experiences with racial violence and prejudice (Pole & Kulkarni, 2008). When dealing with PTSD symptom clusters, the Latinx community, may tend to avoid reminders of the trauma which may act as a coping mechanism to alleviate their distress (Eisenman et al., 2008). Cultural factors such as strong family ties and collective resilience can affect the prevalence of avoidance symptoms among the Latinx community (Pole et al., 2005; Eisenman et al., 2008). This collectivistic view can also be seen within Asian culture as this group may avoid burdening their families with their emotional distress and as such manifest strong avoidant symptoms. Despite the above hypothesized reasons for why ethnic differences in PTSD symptom clusters may exist, a thorough investigation examining between group differences in symptom clusters of PTSD has not been conducted. Indeed, while the presentation and frequency of these symptom clusters can differ across ethnic groups (Marshall, Schell, & Miles, 2009; Coleman, Ingram, K. M., & Sheerin, C. M., 2019), a holistic examination of PTSD symptomology (i.e., looking at all PTSD symptom clusters) by ethnic group is absent from the extant literature. Instead, authors have primarily examined ethnic differences in singular symptom clusters and/or among a single ethnic group.

In addition to potential ethnic differences in symptom clusters of PTSD, individuals also encounter a wide range of traumatic events that can differ significantly across ethnic groups, on account of cultural, socioeconomic, and environmental factors.

Racial discrimination, microaggressions, and systemic racism are issues that ethnic minorities frequently face, which may exacerbate the trauma they experience.

Additionally, a significant portion of ethnic minorities are immigrants, which is often linked to the trauma associated with the immigration experience (Amiri, 2022; Bustamante, Leclerc & Brietzke, 2018).

While existing research has explored differences in PTSD prevalence rates among ethnic groups and in relation to trauma types, there remains a significant gap in our understanding of the way that specific symptom clusters of PTSD vary across diverse ethnic communities. The primary objective of this study is to bridge this research gap and provide initial insights into potential ethnic differences. Ultimately the results from this study could inform intervention efforts for PTSD in ethnic minority populations. To achieve this goal, the following research questions will direct our inquiry:

1. What is the prevalence rate of PTSD across ethnic groups?
 - a) What is the prevalence of PTSD across the three main ethnic groups (African America, Asian, Latinx)?
 - b) What is the prevalence of PTSD across ethnic subgroups? (e.g., Cuban, Puerto Rican, Chinese, Japanese etc.)?
2. How, if at all, do symptom clusters differ across ethnic groups?
 - a) What is the prevalence of PTSD symptom clusters across the three main ethnic groups (African America, Asian, Latinx)?
 - b) What is the prevalence of PTSD symptom clusters across ethnic subgroups? (e.g., Cuban, Puerto Rican, Chinese, Japanese etc.)

3. Is there a correlation between the extent of discrimination experienced and the severity of PTSD symptoms among the different ethnic groups?

Chapter 2: Review of the Literature

Post-Traumatic Stress Disorder (PTSD) is a debilitating mental health condition that arises in individuals following exposure to traumatic events (American Psychiatric Association [APA], 2013). It is characterized by a range of symptoms that can have a profound impact on a person's daily life and overall well-being. Symptoms of PTSD encompass four main clusters, as defined in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Intrusion symptoms, one of the main symptom clusters, involve recurrent and distressing memories, nightmares, or flashbacks related to the traumatic event. Avoidance symptoms can also be seen in individuals experiencing PTSD. It manifests as efforts to avoid reminders of the trauma, leading to social withdrawal and emotional numbing. Negative alterations in mood and cognition can be seen when a person is having persistent negative beliefs about oneself or the world, emotional detachment, and an inability to experience positive emotions. Finally, arousal and reactivity symptoms, involve a person experiencing irritability, anger, difficulty concentrating, hypervigilance, and an exaggerated startle response (APA, 2013).

Complex PTSD

Complex Post-Traumatic Stress Disorder is a psychological condition that can arise from prolonged exposure to severe and pervasive traumatic events, often involving chronic interpersonal abuse or neglect (Herman, 1992). Individuals with Complex PTSD often experience a broad range of symptoms which include difficulties with emotional regulation, interpersonal relationships, and a distorted sense of self (Maercker et al., 2022). Minorities often face unique challenges that increase their vulnerability to prolonged traumatic experiences. Systemic factors such as discrimination, racism, and socioeconomic disparities can contribute to the higher prevalence of trauma within this the minority groups. These individuals may also

experience complex traumas related to their identity (i.e., racial or ethnic discrimination, cultural displacement, intergenerational trauma; [de Silva et al., 2021; Nickerson et al., 2016]).

PTSD Among Ethnic Minorities

The U.S has become more diverse within the past several years; it is estimated that minorities collectively make up over 40% of the country's total population (United States Census Bureau, 2020). PTSD can affect individuals of all racial and ethnic backgrounds. According to the U.S. Department of Federal Affairs, six percent of individuals will have developed PTSD in their lifetime. The prevalence of lifetime PTSD is substantially lower among Asians, with just 1.9% reporting it, in contrast to higher rates among other racial and ethnic groups; prevalence rates for ethnic groups in the United States are as follows: 7.8% of African Americans, 6.9% of non-Latinx whites, 6.3% of Afro-Caribbeans, and 4.6% of Latinx (Alegria et al., 2013).

The phenomenon of categorizing individuals into societal boxes, also known as social categorization, has been extensively studied in social psychology (Rhodes & Baron, 2019). In society, categorizing individuals into boxes based on their race, gender, or socio-economic status can often lead to the formation of stereotypes and prejudices, which can have profound effects on individuals' experiences and opportunities (Rhodes & Baron 2019). Minoritized people are typically categorized into three broad ethnic minority groups (i.e., African American, Asian, and Latinx) despite significant variation within these three categories. Indeed, it is important to recognize that within these larger ethnic categories, there are a multitude of nuanced differences. According to Alegria et al. (2013), various factors encompassing sociodemographic, clinical, and social support aspects, contribute to differences among racial/ethnic groups that could be linked to the risk of developing PTSD. One example, Latinx, Asians, and Afro-Caribbeans frequently have immigrant backgrounds, while non-Latinx whites are more likely to have incomes

surpassing the poverty threshold (Alegria et al., 2013). Ethnoracial minorities in the US have an increased risk for PTSD due to some of the factors (e.g., previous trauma exposure, socioeconomic, lack of access, social support) they encounter throughout their lives (Alegria et al., 2013; Stephens et al., 2010; Pole, Gone, & Kulkarni, 2008).

PTSD Symptoms

According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), post-traumatic stress disorder (PTSD) is characterized by symptom clusters that include intrusive thoughts, avoidance behaviors, negative alterations in mood and cognition, and heightened arousal and reactivity (American Psychiatric Association, 2013). The presentation and frequency of these symptom clusters can differ across ethnic groups (Marshall, Schell, & Miles, 2009; Coleman, Ingram, K. M., & Sheerin, C. M., 2019) although a holistic examination of PTSD symptomology (i.e., looking at all PTSD symptom clusters) by ethnic group is absent from the extant literature. Instead, authors have primarily examined ethnic differences in singular symptom clusters and/or among a single ethnic group.

Of the literature that does exist, studies have indicated that the experience and manifestation of PTSD symptoms vary among different racial and ethnic communities (Hinton, et al., 2009). Intrusion symptoms are characterized by distressing and unwelcome recollections, flashbacks, and nightmares linked to the traumatic experience. Some studies suggest that intrusion symptoms can manifest differently across ethnic groups. For example, studies have indicated that Latinx individuals may experience culturally specific forms of intrusions, such as "susto" or "nervios," which involve somatic complaints and distress rooted from culturally bound beliefs (Hinton et al., 2009; Marshall, Schell, & Miles, 2009). African American populations

may demonstrate intrusion symptoms associated with race-based trauma, reflecting experiences of racial discrimination and violence (Pole & Kulkarni, 2008).

Cultural differences can also be seen in avoidance symptoms. Avoidance symptoms are efforts to evade reminders of the traumatic event (DSM-5). These can vary across ethnic groups due to cultural, social, and environmental factors. Of course, avoidance is tied to similarities with the stimuli associated with the trauma, and therefore if racial groups experience different kinds of trauma. African American individuals may exhibit avoidance symptoms influenced by race-related experiences and discrimination (Williams et al., 2014). When dealing with the aftermath of a traumatic experience, Latinx individuals often exhibit avoidance symptoms (Eisenman et al., 2008). Avoiding reminders of their trauma or related emotions can manifest as a coping mechanism to alleviate their distress (Eisenman et al., 2008).

The symptom cluster of negative alterations in mood and cognition involves persistent negative emotions, distorted blame, diminished interest in activities, and feelings of detachment or estrangement (American Psychiatric Association, 2013). In regard to ethnic differences, Latinx individuals are hypothesized to cope with these symptoms by relying on strong family and community support networks, while African American individuals may draw on spirituality and religiosity to mitigate negative alterations in mood and cognition (Pole & Kulkarmo, 2008). However, currently there are no empirical studies of this.

Arousal and reactivity symptoms include heightened physiological responses such as increased heart rate and hypervigilance (American Psychiatric Association, 2013). According to Sibrava and colleagues (2019), racial groups, including African American and Latinx, tend to exhibit a heightened prevalence of trauma exposure and hypervigilance. Kim and colleagues (2021) suggested that every day social situations that are considered safe to some (i.e., public

transportation, workplace, and educational setting) may trigger increased hypervigilance in specific racial groups as a result of subtle discrimination and micro-aggressions. The above illustrates PTSD symptom variation across ethnic groups and suggests possible explanations for these variations.

Prevalence Rates of PTSD Symptom Clusters Across Ethnic Groups

While the available literature indicates some differences in PTSD symptom cluster, it is important to acknowledge the limitations of these studies. Samples may not be representative of the whole population since there are various cultures that are clumped together within each ethnic group. There are several studies that examine PTSD symptom cluster among various occupations or illnesses (Fischer et al., 2022; Stanley et al., 2019; Walton et al., 2018; Boffa et al., 2017; Pole et al., 2001) however, little to no research is done comparing the ethnic and/or racial groups regarding the symptoms cluster.

African Americans

The prevalence rates for probable lifetime PTSD are shown to be higher in African American (7.8%), compared to white individuals and the other ethnic groups (Whites 6.9%), even after accounting for different factors such as social support, sociodemographic, and number/type of traumatic events (Alegria et al., 2013; Roberts et al., 2011). Numerous studies have reported higher levels of intrusive symptoms, avoidance, and negative alteration in mood among African American when compared to non-Latinx White individuals (Koo, Hebenstreit, & Maguen, 2016; Ortega & Rosenheck, 2000; Coleman, Ingram, K. M., & Sheerin, C. M., 2019). PTSD is a common diagnosis among the Veteran population; according to the U.S. Department of Veterans Affairs, seven out of 100 veterans will have experienced PTSD in their lifetime.

Coleman and Colleagues (2019) examined racial differences in symptomology in combat veterans; their results indicated that African American combat veterans reported higher reexperiencing symptoms when compared to non-Latinx White veterans.

Latinx

The prevalence rates of PTSD symptom clusters among the Latinx population have not been well documented. There have been several inconsistencies in the existing literature regarding PTSD symptom cluster within the Latinx community (Perilla et al., 2002; Pole et al., Jenkins, 1996). While one study reported lower avoidance symptoms (Jenkins, 1996), others have documented higher rates of avoidance and hyperarousal (Pole et al., 2005; Rothe et al., 2002; Norris, Perilla, and Murphy, 2001) among the Latinx community when compared to non-Latinx whites. For example, police officers who identified as Latinx described experiencing more severe PTSD symptoms when compared to a non-Latinx group (Pole et al., 2005). The Latinx collectivist cultural values may play a role in the way PTSD symptoms manifest. Strong family ties and large support systems are highly valued in the Latinx community (Pole et al., 2005; Eisenman et al., 2008). Thus, individuals might be reluctant to talk about their trauma or seek professional help to protect their family's reputation.

Some literature has also suggested that the Latinx community tend to exhibit distress in a physical form instead of a psychological form (Eisenman et al., 2008; Marsella et al., 1996), while other studies have shown that Latinx have overall higher scores across all symptoms compared to non-Latinx individuals (Marshall, Schell, & Miles, 2009; Denson et al., 2007; Ortega and Rosenheck, 2000). Additionally, limited research has been done regarding Latinx subgroups (i.e., Mexican America, Puerto Rican, Cuban, Central American, Colombian, etc.) and PTSD symptom clusters. Although many studies tend to combine these subgroups together, the

assumption that several heterogeneous groups with some shared cultural characteristics are the same is problematic. Indeed, Ortega and Rosenheck (2000) discussed the differences between Puerto Rican veterans encountering more reexperiencing and hyperarousal symptoms compared to Mexican American or other Latinx, suggesting a possible acculturation component.

Asians

Little to no research has been done regarding PTSD symptom clusters within the Asian community. However, there are certain cultural factors, such as stigma associated with mental health problems and disturbance in the family harmony (Kramer et al., 2002), that can influence the presentation of PTSD symptoms. For example, due to the societal tendency to repress negative feelings and present a stoic front (Saw and Okazaki, 2010), recurring symptoms such as nightmares and flashbacks could go unreported. Asians may also experience a high prevalence of avoidance symptoms due to attempts to avoid burdening their family with their emotional suffering (Kramer et al., 2002). The expression of negative cognitions and mood symptoms, such as emotional numbness and persistent negative beliefs, may vary within this culture, and this may be due to the cultural value placed on emotional control and resilience (Kim, Li, and Ng, 2005). Asians may also experience elevated arousal symptoms, such as hypervigilance and irritability, possibly as a result of the stressors associated with acculturation and discrimination (Loo, 1994). The unique circumstances of the COVID-19 pandemic have also introduced specific obstacles and strains that may exacerbate the mental health struggles experienced by the Asian community. Research findings have indicated that since the outbreak of the pandemic, there has been a surge in discrimination against the Asian population, leading to increased feelings of stigma and isolation (McGarity-Palmer et al., 2024; Fisher et al., 2021; Cheah et al., 2020).

Trauma Type

Individuals are exposed to different types of traumatic events and can vary across different ethnic groups due to cultural, socioeconomic, and even environmental factors. Cultural norms and values influence the types of events that people within a particular ethnic group may be more likely to experience. For example, Latinx and African American adolescents in the U.S are more likely to experience community violence and gang-related trauma due to factors such as socioeconomic disparities, neighborhood environments and racial discrimination (Andrews et al., 2019) whereas a refugee may have an increased likelihood of exposure to war (Fegert et al., 2018). Asians Americans frequently encounter racial microaggressions (Nadal et al., 2022). According to Morgan and Oudekerk (2019), 22% of Black individuals were exposed to a violent crime making them more susceptible to exposure to violent crimes (i.e., homicides) compared to non-Latinx whites. Socioeconomic disparities can lead to variations in trauma types as well. Certain ethnic groups can experience higher levels of poverty and limited access to resources which can cause those individuals to be more vulnerable to certain types of traumas (i.e., community violence, housing instability, and food insecurity).

Ethnic minorities often face unique stressors and traumas, which can influence the types of traumas they endorse when experiencing PTSD. Ethnic minorities often experience racial discrimination, microaggressions, and systemic racism, which can lead to racial trauma. However, racism has generally not been considered a potential stressor that can cause PTSD (Pieterse, Johnson, & Carter, 2023). The global outbreak of COVID-19 exacerbated anti-Asian racism causing Asian minorities to experience race-based stress symptoms as a result (Yang et al., 2023). This trauma type can also include experiences such as hate crimes, racial profiling, and witnessing racial violence. According to the Hate Crime Statistics (2020) report there was a

total of 5,227 ethnic based incidents reported in 2020, a 32% increase within a year. The most noticeable increase in hate crimes being with Asian community (77%) followed by African American (49%).

Many ethnic minorities have immigrant backgrounds and may have experienced trauma related to immigration (Amiri, 2022; Bustamante; Leclerc & Brietzke, 2018). This can include trauma in one's home country, enduring events in dangerous journeys, or facing discrimination and hostility in the host country (Kaplan, Stow & Szwarc, 2016; Keller, Joscelyne, Granski & Rosenfeld, 2017; Bustamante, Leclerc & Brietzke, 2018). Studies have shown that individuals who had fled their country for their safety have a higher risk of experiencing mental health issues, specifically PTSD (Rothe et al., 2002; Keller et al., 2017; Hasson et al., 2021). Few studies have also investigated the link between acculturation and PTSD (Ortega and Rosenheck, 2000; Pole, Gone, & Kulkarni, 2008) although of the research that does exist, Latinx individuals who are less acculturated report higher symptom severity. Additionally, stigma has also been a factor that influences PTSD symptoms due to the delay in treatment. For instance, Latinx individuals may be more willing to report large scale traumas rather than personal or individual traumas (Pole, Gone, & Kulkarni, 2008). This could be due to the social constructs (e.g., Machismo) Latinx population (Asnaani & Hall-Clark, 2017) being used to cope with emotional trauma.

Generational Factors and Acculturation

Generational factors and acculturation should also be considered when discussing trauma. First-generation immigrants can develop trauma in relation to experiences has in their homelands, whether it be war, political persecution, or economic difficulties (Neace et al., 2020). First generation immigrant research often portrays themes of loss, displacement, and resilience in the face of adversity (Theisen-Womersley, 2021). However, cultural stigma and the pressure to

assimilate may lead some first-generation immigrants to minimize their trauma (Rothe, 2020). For first-generation immigrants, navigating trauma often involves balancing between holding onto their traditions and values while attempting to fit into a new environment. Traumatic experiences may be shaped by both the memories of displacement, persecution, or conflict experienced in their country of origin *and* the challenges of adapting to a new culture (Wang et al., 2022). Acculturation, the process of adopting the beliefs and behaviors of a dominant culture, can both facilitate and hinder the healing process following trauma. Second and third-generation Americans may struggle with intergenerational trauma and its impact on their sense of identity and belonging (O'Neill et al., 2018; Ceri et al., 2017).

Weathering Hypothesis and Minorities

The Weathering Hypothesis, initially proposed by Dr. Arline Geronimus in the early 1990s, suggests that individuals from racial and ethnic minority groups experience premature aging and deteriorating health due to the cumulative impact of socio-economic and racial stressors (Forde et al., 2019). This framework could suggest that persistent exposure to systemic racism, adverse life conditions, and limited access to resources contributes to a decline in overall health contributing to premature aging at the physiological and psychological level (Forde et al., 2019). Prolonged exposure to trauma, whether due to systemic discrimination or other adverse experiences, can exacerbate the effects of weathering. The Weathering hypothesis was primarily used to explain disparities between African American and Whites. However, other minorities face similar stressors and disadvantages (i.e., discrimination, cultural stigma, intergenerational trauma, and acculturation stress). This hypothesis may shed some light on the different way that other minorities may experience trauma and the contribution of cumulative trauma exposure histories to the distinct responses to traumatic events observed among such groups. For example,

Latinx individuals in the United States often experience discrimination based on ethnicity, immigration status, and language barriers. This chronic stress can contribute to health disparities; Latinx and Asian individuals in the United States frequently face discrimination due to their ethnicity, immigration status, and language barriers. This persistent stress can lead to health disparities, including higher rates of chronic illnesses, mental health disorders, and limited access to healthcare services such as high rates of chronic diseases, mental health, and limited access to healthcare services (Franco et al., 2022; Yang et al., 2019).

Individuals from marginalized communities may encounter traumas related to their identity, such as racial profiling, microaggressions, or historical trauma. The cumulative impact of these experiences, coupled with limited access to mental health resources, may contribute to an increased risk of developing PTSD. Access to adequate mental health care is often limited for individuals from marginalized communities due to systemic barriers (Kim et al., 2023). Additionally, the stigma surrounding mental health in these communities may further impede seeking help (Torales et al., 2023). Minorities may experience some, if not all, the PTSD symptom clusters due to cumulative effects of societal stressors. For example, persistent exposure to discrimination and racial trauma may contribute to the reexperiencing of traumatic events, which often manifest as intrusive thoughts or flashbacks (Bryant-Davis & Ocampo, 2005). The avoidance symptom cluster may be heightened in minorities due to cultural mistrust and the fear of re-traumatization in healthcare or mental health settings (Williams & Williams-Morris, 2000). Negative alterations in cognitions and mood may be influenced by the chronic stressors associated with minority status, contributing to challenges in self-perception and worldviews (Hobfoll et al., 2002). Hyperarousal symptoms may be exacerbated by the constant

vigilance and hypervigilance that individuals from minority communities may develop as adaptive responses to their environments (Carter, 2007).

Current Study

While there is research examining variations in prevalence rates of PTSD by ethnic groups as well as by trauma type, researchers have not yet thoroughly examined the ways in which PTSD symptom clusters vary by ethnic groups. The study aimed to address existing gaps in this field and offered preliminary findings that could enhance the treatment of PTSD in ethnic minorities. To address this gap in the literature, the following research questions guided the study:

1. What are the prevalence rate of PTSD across ethnic groups?
 - a) What are the prevalence of PTSD across the three main ethnic groups (African America, Asian, Latinx)?
 - b) What are the prevalence of PTSD across ethnic subgroups? (e.g., Cuban, Puerto Rican, Chinese, Japanese etc.)?
2. How, if at all, do symptom clusters differ across ethnic groups?
 - a) What are the prevalence of PTSD symptom clusters across the three main ethnic groups (African America, Asian, Latinx)?
 - b) What are the prevalence of PTSD symptom clusters across ethnic subgroups? (e.g., Cuban, Puerto Rican, Chinese, Japanese etc.)
3. Is there a correlation between the extent of discrimination experienced and the severity of PTSD symptoms among the different ethnic groups?

Chapter 3: Methodology

Procedures

Data for this study was collected using Qualtrics via the psychology subject pool from the University of Nevada, Reno ($n = 97$) as well as from Prolific ($n = 123$), an online recruitment platform that enables reliable and high-quality data collection. The data reported in this dissertation is a subset of data that was collected as part of a larger study. Eligibility criteria for the larger study included participants who self-identified as an ethnic minority and were at least 18 years of age. For the purposes of this study, the sample was restricted to those individuals who scored at least 31 on the PCL-5 as this suggests possible PTSD (Bovin et al., 2016).

Participants were given a link to a Qualtrics survey that included a series of self-report measures. Participants gathered from the University of Nevada, Reno, were given two (SONA) research credits as compensation, whereas participants from Prolific were compensated an average of \$8 for completing the study. The study was approved by the Institutional Review Board at the University of Nevada, Reno.

Participants

A total of 275 individuals accessed the study; however, 55 individuals did not respond to the study measures. Thus, the total number of participants who completed the study in full were 220 individuals. More than half of the participants identified as women with an average age of 28.83 ($SD = 4.61$). The majority of participants self-identified as single, heterosexual individuals with some college education (see Table 1 for a full breakdown of demographic information). The sample's ethnic distribution, which can be seen in Table 1, was roughly equal across the African American ($n = 66$) and Asian ($n = 65$) participants; Latinx participants constituted the largest

ethnic group in the sample ($n = 83$) and a small number of participants identified as “Other” ($n = 6$).

We also collected data on ethnic subgroups—a breakdown of this data can be found in Table

2. As can be viewed in Table 2, the number of participants in each ethnic subgroup y was small.

Table 1

Characteristic	<i>Entire Sample</i>		<i>Probable PTSD Subsample</i>		<i>Non-PTSD Subsample</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Gender						
Woman	120	54.50	42	56.80	78	53.40
Man	94	42.70	27	36.50	67	45.90
Other	6	2.80	5	6.80	1	0.70
Education						
Some high school	2	.90	2	2.70	0	0.00
High School Graduate	15	6.80	4	5.40	11	7.50
Some College	122	55.50	53	71.60	69	47.30
Technical/Trade School Degree	3	1.40	1	1.40	2	1.40
Associate’s Degree	11	5.00	1	1.40	10	6.80
Bachelor’s Degree	52	23.60	11	14.90	41	28.10
Graduate Studies	15	6.80	2	2.70	13	8.90

Note. $N = 74$. Participants with probable PTSD were on average 26.39 years old ($SD = 10.18$).

Table 2*Ethnic Groups and Subgroups of Participants*

Characteristic	<i>Entire Sample</i>		<i>Probable PTSD Subsample</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Ethnicity				
African American	66	30.00	16	21.60
Asian	65	29.50	22	29.70
Latinx	83	37.70	34	45.90
Other	6	2.80	2	2.70
Ethnicity by Subgroup				
African American	66	30.00	16	21.60
Middle Eastern	4	1.80	1	1.40
American Indian or Alaska Native	2	.90	1	1.40
Hawaiian/Pacific Islander	5	2.30	3	4.10
Chinese	18	8.20	3	4.10
Filipino	11	5.00	4	5.40
Vietnamese	4	1.80	2	2.70
Korean	1	.50	0	0.00
Japanese	5	2.30	2	2.70
Asian (other)	14	6.40	5	6.80
Indian	7	3.20	3	4.10
Mexican	39	17.70	18	24.30
Puerto Rican	3	1.40	0	0.00
Cuban	1	.50	1	1.40
El Salvadorean	9	4.10	2	2.70
Guatemalan	4	1.80	2	2.70
Columbian	2	.90	1	1.40
Honduran	1	.50	1	1.40
Ecuadorian	3	1.40	0	0.00
Peruvian	1	.50	1	1.40
Hispanic/Latino/Latinx-other	20	9.10	8	10.80

Note. *N* = 220 for the entire sample; *N* = 74 for participants with probable PTSD.

Measures

A demographic questionnaire was used to assess age, gender, sex, ethnicity, education, language, marital status, income, immigration status, country of origin, and religion.

PTSD Checklist (PCL-5). The PCL is a 20-item self-report measure that measures the 20 DSM-5 PTSD symptom clusters associated with PTSD (PCL- 5; Weathers et al., 2013). The PCL-5 allows for the assessment of numerous traumas by posing questions concerning symptoms in relation to "stressful experiences." On a 5-point scale ranging from 0 (not at all) to 4 (extremely), participants indicate the degree to which they have been bothered by a specific item in the previous month, with scores ranging from 0 to 80. According to preliminary psychometric data, the PCL-5 exhibits strong test-retest reliability ($r = .82$) and internal consistency ($\alpha = .94$) (Blevins et al., 2015). Several studies within the field of minority research have used the PCL-5 as a measure to investigate and assess PTSD symptoms (Patrick et al., 2023; Mekawi et al., 2022; Ito et al., 2019; Miller-Graff, Guzman, & Hare, 2023) and have demonstrated that the PCL-5 has strong psychometric properties, making it a reliable instrument for evaluating PTSD symptoms across different minority groups.

Life Events Checklist (LEC-5). The LEC-5 is a brief 17-item self-report measure used to screen for potential traumatic experiences in a respondent's lifetime. The LEC-5 has participants indicate, if any, difficult or stressful experiences they have had, along with whether they "happened to me," "witnessed it," "learned about it," "part of my job," "not sure," or "doesn't apply." The LEC-5 has been used to assess potential traumatic experiences among various minorities (Weathers et al., 2013). Given the recent implementation of the LEC-5, there is a limited amount of literature to determine psychometrics (Kwobah et al., 2022; Stevenson et al., 2023). However, due to the minimal modifications from the original version of the LEC, it is expected that there will be few differences in the psychometric properties (Weathers et al., 2013).

Brief Perceived Ethnic Discrimination Questionnaire (PEDQ-CV). The PEDQ-CV is a 17-item measure used to assess exposure to ethnic/racial discrimination using five factors (i.e., lifetime exposure, exclusion/rejection, stigmatization/devaluation, discrimination at work/school, and threats/aggressions). This measure uses a 5-point Likert scale from 1 = Never happened 3 = Sometimes 5 = Happened very often (Brondolo et al., 2005). Previous studies have shown that the PEDQ-CV had good reliability and construct validity (Brondolo et al., 2005).

Chapter 4: Results

To answer the research questions in this dissertation, data analysis was conducted using The Statistical Package for Social Sciences (SPSS) version 20. Below the results that pertain to each research question are presented.

Research Question 1: What is the prevalence rate of PTSD across ethnic groups?

To establish prevalence rates of PTSD across ethnic groups, the percentage of individuals in each ethnic group with probable PTSD (as defined by a score of 31 or greater on the PCL-5) was calculated. Out of our 220 participants, 72 scored 31 or higher on the PCL-5, indicating a probable PTSD prevalence rate of 32.73% across the sample. Additionally, an analysis of variance (ANOVA) was used to determine whether PTSD symptom severity varied by ethnic group.

What is the prevalence of PTSD across the three main ethnic groups (African America, Asian, Latinx)?

In this study, we examined the prevalence rates of post-traumatic stress disorder (PTSD) among the three main ethnic groups. To compute prevalence rates, we took the total number of participants in each subgroup and calculated the percentage who had a score of 31 or higher on the PCL-5. Among African American participants, approximately 24.24% were found to have probable PTSD. Similarly, among Asian participants, the prevalence rate of PTSD was approximately 33.84%. Notably, participants identifying as Latinx had a higher prevalence rate compared to the other two ethnic groups 40.96% (see Table 3). In addition to establishing prevalence rates, we conducted a one-way ANOVA (using only those participants [n = 72] who had probable PTSD) to determine whether there was any difference in PTSD severity across

ethnic groups. A power analysis was run using G*Power to determine whether the sample size was sufficient to detect a medium-effect group difference across our three groups ($d = 0.5$) with a power of .95 and $\alpha = .05$. The power analysis indicated that a sample of 66 was needed; thus, our subsample of 72 participants was sufficient. The ANOVA failed to identify a significant difference in symptom severity ethnic groups, $F(2, 69) = 1.62, p = .206$. (Table 4).

Table 3

PTSD Prevalence Rates for Ethnic Groups and Subgroups of Participants

Characteristic	Prevalence Rates	
	<i>n</i>	%
Ethnicity		
African American	16	24.24
Asian	22	33.84
Latinx	34	40.96
Other	2	33.3
Ethnicity by Subgroup		
African American	16	24.24
Middle Eastern	1	25.00
American Indian or Alaska Native	1	50.00
Hawaiian/Pacific Islander	3	60.00
Chinese	3	16.66
Filipino	4	36.36
Vietnamese	2	50.00
Korean	-	-
Japanese	2	40.00
Asian (other)	5	35.71
Indian	3	42.85
Mexican	18	46.15
Puerto Rican	-	-
Cuban	1	100.00
El Salvadorean	2	22.22
Guatemalan	2	50.00
Columbian	1	50.00
Honduran	1	100.00
Ecuadorian	-	-
Peruvian	1	100.00
Hispanic/Latino/Latinx-other	8	40.00

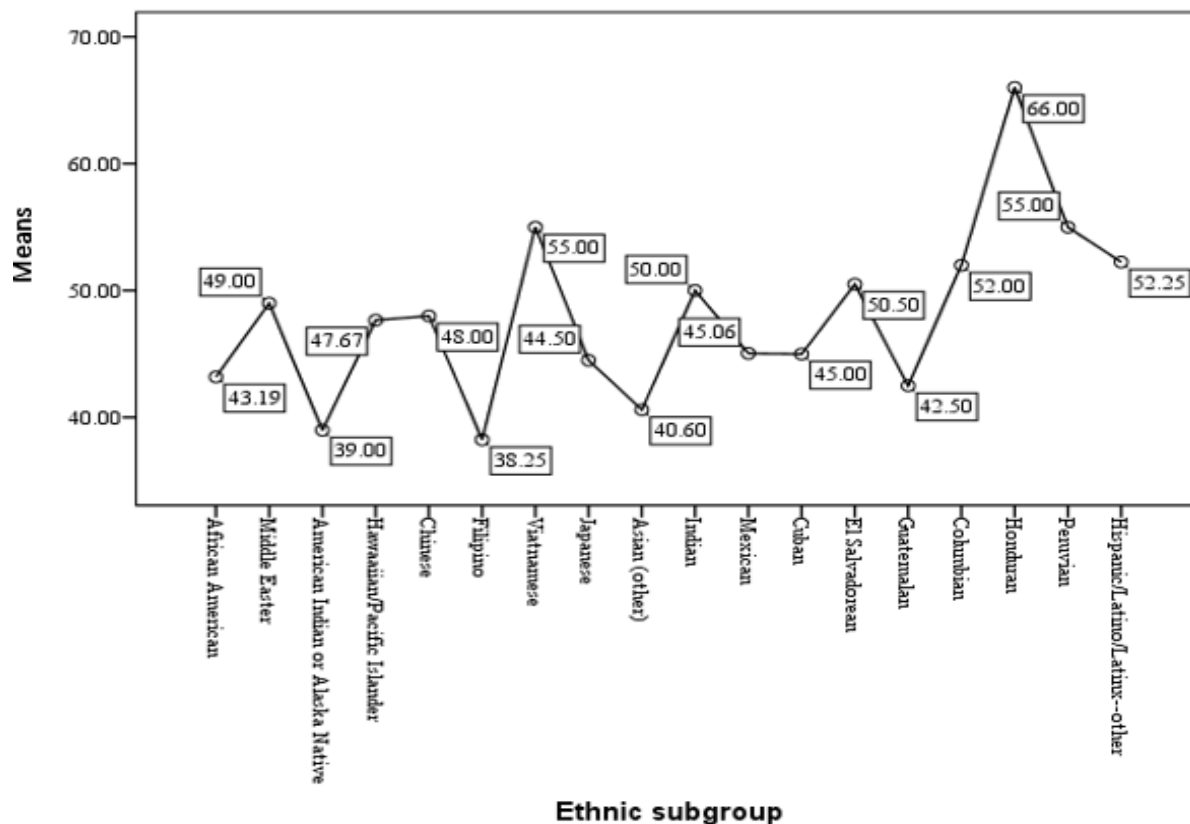
Note. $N = 220$ for the entire sample

What is the prevalence of PTSD across ethnic subgroups? (e.g., Cuban, Puerto Rican, Chinese, Japanese etc.)?

Due to limited sample sizes within ethnic subgroups, our study was under-powered to conduct robust analyses for comparing differences across these subgroups regarding potential PTSD. Per a G-Power analysis, we were underpower to detect a medium-effect group difference among the twenty-one ethnic subgroups. The findings revealed that to attain 95% power for detecting a medium effect at a significance level of $\alpha = .05$, a sample size of 147 participants is required; thus, the sample size among the subgroups was not sufficient. Qualitatively looking at trends, the highest mean of probable PTSD was for Hondurans (66%), while the lowest was for Filipino (38.25%) (see Figure 1).

Figure 1

Mean for Probable PTSD by Ethnic Subgroups



Note. The graph shows Probable PTSD by ethnic subgroups. The x-axis shows ethnic subgroups, while y-axis shows the means of Probable PTSD.

Research Question 2: How, if at all, do symptom clusters differ across ethnic groups?

The prevalence rates of PTSD symptom clusters among the main ethnic groups can be found in Table 4. An Analysis of Variance (ANOVA) was done to assess potential variations in PTSD symptom clusters across ethnic groups.

What is the prevalence of PTSD symptom clusters across the three main ethnic groups (African America, Asian, Latinx)?

The PTSD symptom clusters were operationalized by re-experiencing (e.g., intrusive memories, flashbacks), avoidance (e.g., avoiding trauma-related stimuli), negative alterations in cognitions and mood (e.g., negative beliefs about oneself or the world), and alterations in arousal and reactivity (e.g., hypervigilance, exaggerated startle response). As noted above, the One-way ANOVA results showed no significance for probable PTSD, $F(2, 69) = 1.62, p = .206$. The group with the highest mean score on the PCL-5 was the Latinx (48.03%). When analyzing ethnic differences in the symptom clusters individually, none of the results demonstrated statistical significance: intrusive symptoms, $F(2,69) = 1.38, p = .259$; avoidance, $F(2, 69) = .25, p = .783$; negative alteration, $F(2,69) = 2.57, p = .084$; and arousal and reactivity, $F(2,69) = .56, p = .573$. With regard to the prevalence of symptoms clusters, as can be seen in in Table 4, the Latinx group exhibited a greater mean ($M = 12.00$) for intrusive symptoms, while manifesting the lowest mean in negative alterations ($M = 5.34$). Conversely, the African American subgroup demonstrated a higher mean in avoidance ($M = 5.44$) compared to other ethnic groups. Asians, on the other hand, attained higher scores in negative alteration ($M = 16.27$) and arousal and reactivity ($M = 12.73$) relative to other subgroups.

Table 4

Means, Standard Deviations, and One-way ANOVA results for the Main Ethnic Groups

Measure	African American		Asian		Latinx		<i>F</i> (2, 69)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Scores on the PCL-5	43.18	6.50	45.09	9.10	48.03	10.59	1.62	.206
Intrusive (Cluster B)	10.19	4.05	11.05	3.91	12.00	3.93	1.38	.259
Avoidance (Cluster C)	5.44	1.79	5.05	1.79	5.12	1.81	.25	.783
Negative Alterations (Cluster D)	16.19	3.90	16.27	3.34	18.65	5.34	2.57	.084
Arousal and Reactivity (Cluster E)	11.38	3.09	12.73	3.83	12.26	4.27	.56	.573

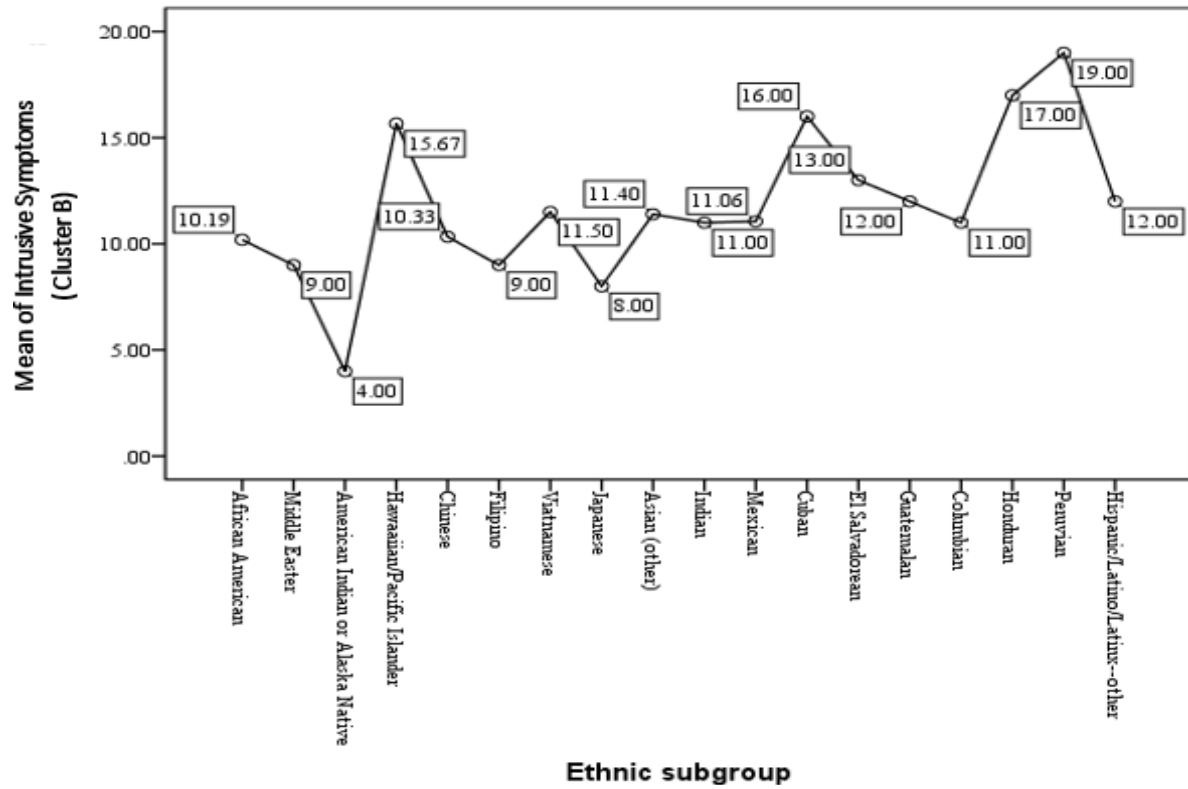
Note. *N* = 72; *n* = 16 for African American, *n* = 22 for Asian, *n* = 34 for Latinx.

What is the prevalence of PTSD symptom clusters across ethnic subgroups? (e.g., Cuban, Puerto Rican, Chinese, Japanese etc.)

There were not enough participants within the ethnic subgroups to perform a one-way ANOVA to compare differences across the groups by symptom clusters. Upon qualitative examination of the trends, Peruvians (19%) had the highest mean for intrusive symptoms, while the lowest is for American Indian or Alaska Native (4%; Figure 2). For avoidance symptoms, the highest mean was seen in the Vietnamese subgroup (8%; Figure 3). In cluster D, negative alterations in mood and cognition, the highest mean was seen in Honduras (26%), while the lowest is seen in the Cuban subgroup (11%; Figure 4). In the arousal and reactivity symptom cluster, the highest mean was for Middle Eastern subgroup (19%), while the lowest mean for Guatemalan (7.50%; Figure 5).

Figure 2

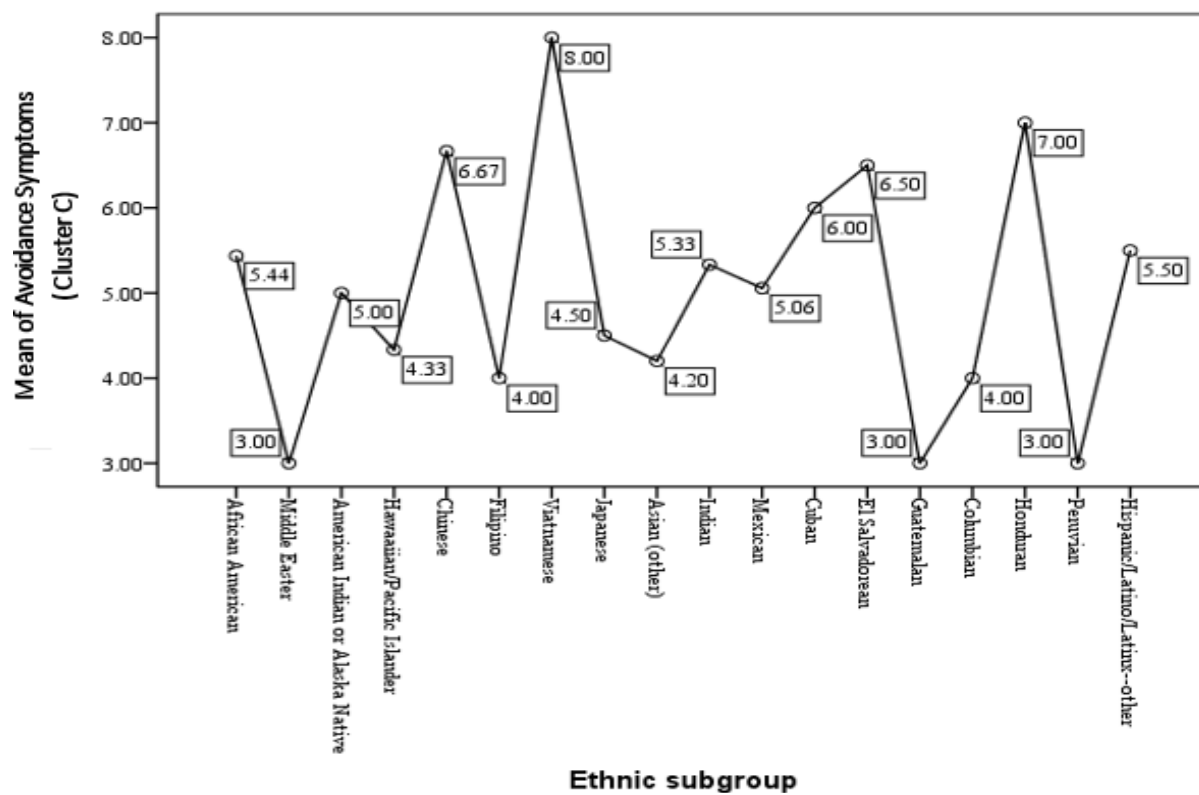
Mean for Intrusive Symptom (Cluster B) by Ethnic Subgroups



Note. The graph shows intrusive symptoms (Cluster B) by ethnic subgroups. The x-axis shows ethnic subgroups, while y-axis shows the means of intrusive symptoms (Cluster B).

Figure 3

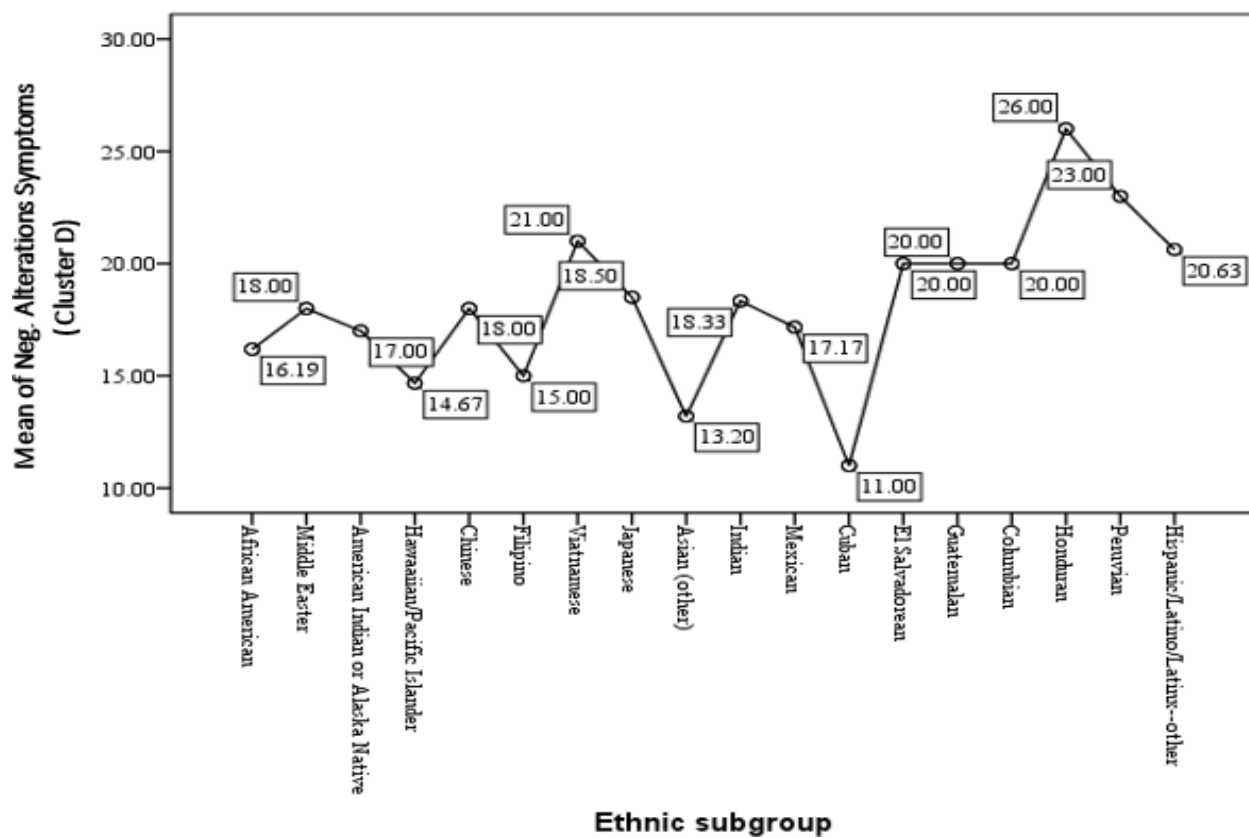
Mean for Avoidance symptoms (Cluster C) by Ethnic Subgroup



Note. The graph shows avoidance symptoms (Cluster C) by ethnic subgroups. The x-axis shows ethnic subgroups, while y-axis shows means of avoidance symptom (Cluster C).

Figure 4

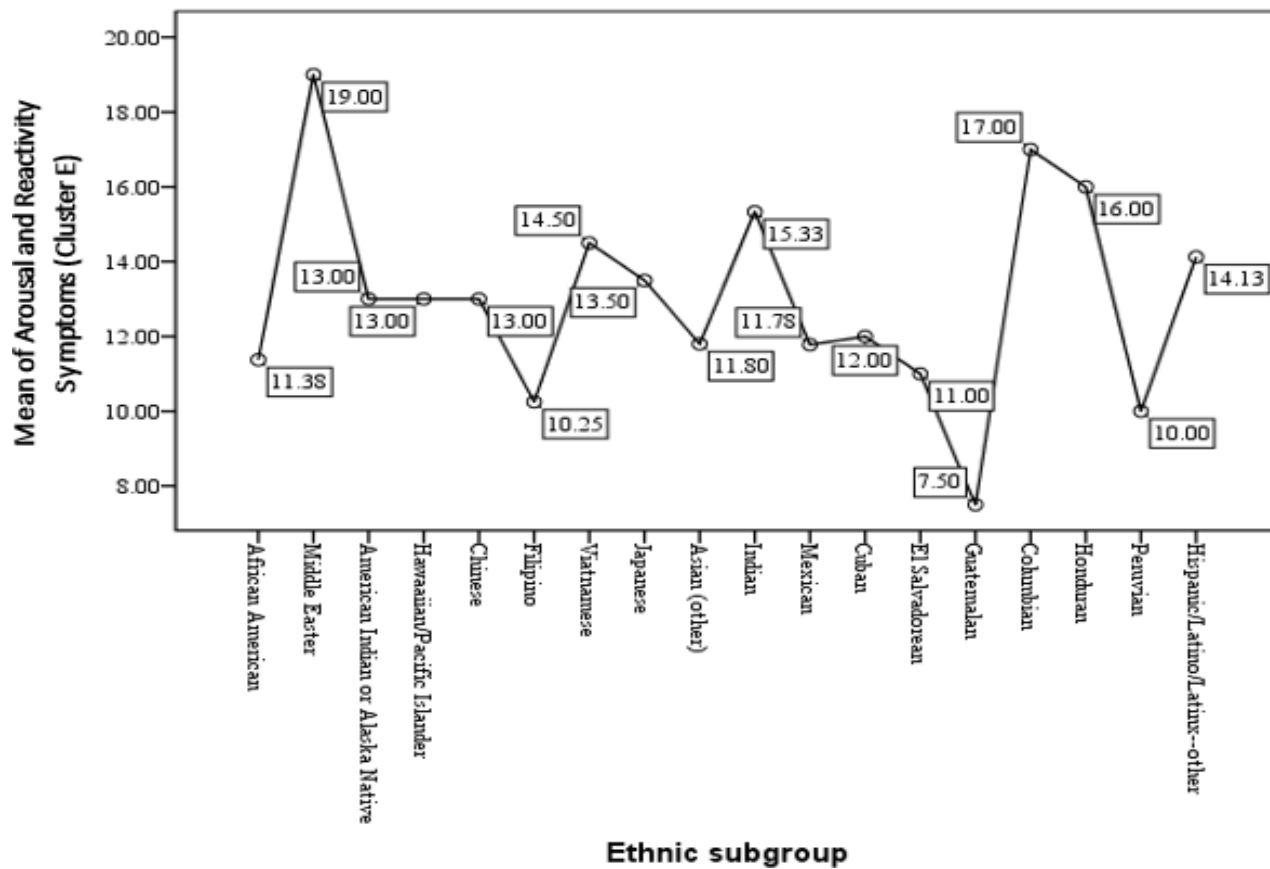
Mean for negative alteration in mood and cognition symptoms (Cluster D) by Ethnic Subgroups



Note. The graph shows negative alteration symptoms (Cluster D) by ethnic subgroups. The x-axis shows ethnic subgroups, while y-axis shows means of negative alterations symptom (Cluster D).

Figure 5

Mean for arousal and reactivity symptoms (Cluster D) by Ethnic Subgroups



Note. The graph shows arousal and reactivity symptoms (Cluster E) by ethnic subgroups. The x-axis shows ethnic subgroups, while y-axis shows means of arousal and reactivity symptom (Cluster E).

Research Question 3: Is there a correlation between the extent of discrimination experienced and the severity of PTSD symptoms among the different ethnic groups?

A Pearson correlation coefficient was computed to determine the relationship between probable PTSD and perceived ethnic discrimination. The results indicated a non-significant relation between PTSD symptoms and Lifetime exposure of discrimination, $r(74) = .198, p > .05$; Exclusion/Rejection, $r(74) = .176, p > .05$; Stigmatization/devaluation, $r(74) = .095, p > .05$; Discrimination at work/school, $r(74) = .220, p > .05$; and Threats/aggression, $r(74) = .121, p > .05$.

When examining PTSD symptom clusters and discrimination the results indicate a significant positive relation between intrusive symptoms (Cluster B) and lifetime exposure to discrimination, $r(74) = .284, p < .001$; stigmatization/devaluation, $r(74) = .263, p < .001$; and discrimination at work/school, $r(74) = .343, p < .001$. This suggests that as lifetime exposure or stigmatization/devaluation or discrimination at work/school increases, intrusive symptoms also increase. The results indicated a nonsignificant relation between intrusive symptoms and exclusion/rejection, $r(74) = .210, p > .05$, and threats/aggression, $r(74) = .054, p > .05$.

When examining PTSD symptom clusters and discrimination the results indicate a significant positive relation between intrusive symptoms (Cluster B) and lifetime exposure to discrimination, $r(74) = .284, p < .001$; stigmatization/devaluation, $r(74) = .263, p < .001$; and discrimination at work/school, $r(74) = .343, p < .001$. This suggests that as lifetime exposure or stigmatization/devaluation or discrimination at work/school increases, intrusive symptoms also increase. The results indicated a nonsignificant relation between intrusive symptoms and exclusion/rejection, $r(74) = .210, p > .05$, and threats/aggression, $r(74) = .054, p > .05$.

When examining avoidance symptoms, the analysis revealed a non-significant relation avoidance symptoms (Cluster C) and lifetime exposure, $r(74) = .158, p > .05$; exclusion/rejection, $r(74) = .170, p > .05$; stigmatization/devaluation, $r(74) = .005, p > .05$; discrimination at work/school, $r(74) = .061, p > .05$; and threats/aggression, $r(74) = .201, p > .05$.

With regards to negative alterations in mood and cognition (Cluster D), the results indicated a non-significant relation between Cluster D symptoms and lifetime exposure, $r(74) = .042, p > .05$; exclusion/rejection, $r(74) = .165, p > .05$; stigmatization/devaluation, $r(74) = -.079, p > .05$; discrimination at work/school, $r(74) = .102, p > .05$; and threats/aggression, $r(74) = -.036, p > .05$.

When investigating arousal and reactivity symptoms, the results indicate a non-significant relation between arousal and reactivity symptoms and lifetime exposure, $r(74) = .080, p > .05$; exclusion/rejection, $r(74) = -.050, p > .05$; stigmatization/devaluation, $r(74) = .064, p > .05$; discrimination at work/school, $r(74) = .051, p > .05$; and threats/aggression, $r(74) = .188, p > .05$ (Table 5).

Table 5

Correlations between PTSD Symptom Clusters and Perceived Ethnic Discrimination

	1	2	3	4	5	6	7	8	9	10
1. PTSD	1									
2. Intrusive Symptoms (Cluster B)	.572***	1								
3. Avoidance Symptoms (Cluster C)	.458***	.111	1							
4. Negative alterations in mood and cognition Symptoms (Cluster D)	.768***	.125	.297*	1						
5. Arousal and reactivity symptoms (Cluster E)	.745***	.210	.194	.425***	1					
6. Lifetime exposure	.198	.284**	.158	.042	.080	1				
7. Exclusion/Rejection	.176	.210	.170	.165	-.050	.734***	1			
8. Stigmatization/devaluation	.095	.263**	.005	-.079	.064	.734***	.385***	1		
9. Discrimination at work/school	.220	.343***	.061	.102	.051	.809***	.587***	.456***	1	
10. Threats/aggression	.121	.054	.201	-.036	.188	.663***	.172	.414***	.352***	1

Note. *** $p < .01$, ** $p < .05$

If we observe the relationship between PTSD symptoms (PCL-5) and perceived ethnic discrimination (PEDQ-CV) separately for ethnic groups (African American, Asian, Latinx) we can conclude that for African American, the relation is non-significant for all variables ($p > .05$), except between arousal and reactivity symptoms (Cluster E) and threats/aggression, in which there is a significant positive relation, $r(16) = .573$, $p < .05$ (Table 6).

Table 6

Correlations between PTSD Symptom Clusters and Perceived Ethnic Discrimination for African American

	1	2	3	4	5	6	7	8	9	10
1. PTSD	1									
2. Intrusive Symptoms (Cluster B)	.456	1								
3. Avoidance Symptoms (Cluster C)	.428	.273	1							
4. Negative alterations in mood and cognition Symptoms (Cluster D)	.432	-.432	-.137	1						
5. Arousal and reactivity symptoms (Cluster E)	.712***	.037	.137	.292	1					
6. Lifetime exposure	.270	.439	.162	-.167	.110	1				
7. Exclusion/Rejection	-.159	.181	.017	-.124	-.424	.693***	1			
8. Stigmatization/devaluation	.338	.493	-.008	-.013	.086	.641***	.364	1		
9. Discrimination at work/school	.228	.274	.251	-.084	.081	.914***	.660***	.497**	1	
10. Threats/aggression	.332	.173	.124	-.138	.573**	.390	-.273	.082	.227	1

Note. *** $p < .01$, ** $p < .05$

For Asian ethnic group, the relation is non-significant for all the symptom clusters ($p > .05$), except the intrusive symptoms (Cluster B). The relation between intrusive symptoms and perceived ethnic discrimination is significantly positive between Cluster B symptoms and lifetime exposure, $r(22) = .568$, $p < .05$; exclusion/rejection, $r(22) = .440$, $p < .05$; stigmatization/devaluation, $r(22) = .536$, $p < .05$; and discrimination at work/school, $r(22) = .529$, $p < .05$. Threats/aggression was not significant, $p > .05$. (Table 7).

Table 7*Correlations between PTSD Symptom Clusters and Perceived Ethnic Discrimination for Asian*

	1	2	3	4	5	6	7	8	9	10
1. PTSD	1									
2. Intrusive Symptoms (Cluster B)	.557***	1								
3. Avoidance Symptoms (Cluster C)	.571***	-.021	1							
4. Negative alterations in mood and cognition Symptoms (Cluster D)	.781***	.054	.565***	1						
5. Arousal and reactivity symptoms (Cluster E)	.861***	.265	.419	.664***	1					
6. Lifetime exposure	.242	.568***	.137	-.144	.057	1				
7. Exclusion/Rejection	.299	.440**	.154	.103	.100	.763***	1			
8. Stigmatization/devaluation	.210	.536**	-.085	-.135	.109	.815***	.501**	1		
9. Discrimination at work/school	.069	.529**	-.049	-.309	-.084	.852***	.575***	.648***	1	
10. Threats/aggression	.174	.344	.341	-.145	.031	.715***	.283	.446**	.510**	1

Note. *** $p < .01$, ** $p < .05$

When examining the Latinx group, the results showed no significance between PTSD symptom clusters and perceived ethnic discrimination ($p > .05$). (Table 8)

Table 8*Correlations between PTSD Symptom Clusters and Perceived Ethnic Discrimination for Latinx*

	1	2	3	4	5	6	7	8	9	10
1. PTSD	1									
2. Intrusive Symptoms (Cluster B)	.621***	1								
3. Avoidance Symptoms (Cluster C)	.481***	.134	1							
4. Negative alterations in mood and cognition Symptoms (Cluster D)	.836***	.311	.388**	1						
5. Arousal and reactivity symptoms (Cluster E)	.739***	.301	.180	.414**	1					
6. Lifetime exposure	.190	.119	.149	.127	.154	1				
7. Exclusion/Rejection	.187	.002	.241	.262	.032	.745***	1			
8. Stigmatization/devaluation	.040	.135	.019	-.104	.113	.674***	.293	1		
9. Discrimination at work/school	.253	.306	.037	.207	.110	.788***	.569***	.379**	1	
10. Threats/aggression	.114	-.048	.151	.036	.210	.720***	.312	.423**	.369**	1

Note. *** $p < .01$, ** $p < .05$

When examining the discrimination experiences among the ethnic minorities there were a few distinct types that emerged when looking at the participants responses. Racial profiling and stereotyping were among the most frequent experience among the Latinx (n = 16), followed by Asian ethnic group (n = 10), and African Americans (n = 6) (Table 9).

Table 9

Discrimination Experiences Among the Main Ethnic Groups

Measure	African American <i>n</i> = 16	Asian <i>n</i> = 22	Latinx <i>n</i> = 34	Total <i>N</i> = 72
Racial Profiling & Stereotyping	6	10	16	32
Work//School/Community	4	1	1	6
Disability	1	-	-	1
Age	-	-	1	1
Did Not Elaborate	1	2	4	7
No Answer	4	9	12	25

Chapter 5: Discussion

The findings of this study shed light on the prevalence rates of post-traumatic stress disorder (PTSD) across diverse ethnic groups and the potential influence of perceived ethnic discrimination on PTSD symptomatology. Our analysis revealed a notable prevalence rate of probable PTSD within the sample, with varying rates observed across ethnicities. African American (24.24%) participants exhibited a lower prevalence rate compared to Asian (33.84%) and Latinx (40.96%) participants, suggesting potential ethnic disparities in PTSD prevalence. However, ANOVA analysis did not reveal statistically significant differences in PTSD symptoms among ethnic groups, emphasizing the complexity of these relationships. Additionally, the correlation analysis between perceived ethnic discrimination and PTSD symptoms revealed complex relationships, with significant correlations observed within African American and Asian groups.

As previously mentioned, existing literature has suggested higher prevalence rates of PTSD among African Americans (Alegria et al., 2013). However, our study found that individuals identifying as Latinx appeared to exhibit higher rates of probable PTSD (49.96% Latinx vs. 33.84% Asian vs. 24.24% African American), yet the results were not significant. The higher (non-significant) prevalence rates observed among Latinx individuals may be attributed to a range of factors, including exposure to trauma, socio-economic stressors, and cultural factors influencing help-seeking behaviors (Alegria et al., 2013; Stephens et al., 2010; Pole, Gone, & Kulkarni, 2008, de Silva et al., 2021; Nickerson et al., 2016).

Contrary to our hypothesis, there was no statistically significant difference in probable PTSD symptoms across the main ethnic groups (African American $M = 43.18$, $SD = 6.50$; Asian $M = 45.09$, $SD = 9.10$; Latinx $M = 48.03$, $SD = 10.59$) $F(2,69) = 1.62$, $p = .206$.

These findings contradict earlier studies (Alegria et al., 2013; Stephens et al., 2010; Pole, Gone, & Kulkarni, 2008) which suggested disparities between ethnic groups. When examining the ethnic subgroups, participants from Honduras had the highest mean for probable PTSD (66%). Although there is no research specifically addressing the prevalence rates of PTSD among Honduran individuals, studies examining trauma exposure and mental health outcomes in Central America offer valuable insights (Keller et al., 2017; Kohn et al., 2005).

When examining symptom clusters among the ethnic minorities, while the results were not statistically significant, we did observe mean differences across the different ethnic subgroups. The Latinx group exhibited a higher mean for intrusive symptoms ($M = 12.00$) but recorded the lowest mean in negative alterations ($M = 5.34$). These results emphasize the importance of considering cultural and contextual factors in understanding PTSD symptom presentation among ethnic minorities. The higher mean for intrusive symptoms among the Latinx group may reflect cultural differences in coping styles and expressions of distress. Latinx individuals may be more inclined to experience intrusive symptoms, possibly influenced by cultural values emphasizing interpersonal relationships and familial bonds (Pole et al., 2005; Eisenman et al., 2008). The lower mean in negative alterations may suggest resilience or protective factors within the Latinx community, such as strong social support networks or cultural beliefs that promote adaptive coping strategies.

On the contrary, the African American subgroup demonstrated a higher mean in avoidance symptoms ($M = 5.44$) compared to other ethnic groups, while Asians attained higher scores in negative alterations ($M = 16.27$) and arousal/reactivity ($M = 12.73$). The higher mean in avoidance symptoms among the African American subgroup may be attributed to socio-cultural factors influencing help-seeking behaviors and engagement with mental health services. Studies have shown that African Americans may face barriers to accessing mental health care due to

stigma, mistrust of healthcare systems, and systemic inequalities (McGuire & Miranda, 2008). As a result, individuals within this subgroup may be more likely to employ avoidance strategies as a means of coping with traumatic experiences. The elevated scores in negative alterations and arousal/reactivity among Asians highlight potential cultural differences in the manifestation of PTSD symptoms. Asian cultural norms, such as collectivism and emotional restraint, may influence the expression of distress and arousal symptoms (Chen & Zhou, 2019; Iwamoto & Liu, 2010). Additionally, experiences of acculturation stress and discrimination faced by Asian immigrants in Western societies may contribute to heightened arousal and reactivity symptoms (Kim et al., 2021; Chung & Epstein, 2014).

Due to insufficient participants, the study could not compare symptom differences across ethnic subgroups. However, when looking qualitatively, some patterns emerged. In our sample size, Peruvians showed the highest intrusive symptoms (19%), Vietnamese had the highest avoidance symptoms (8%), Honduras had the highest negative mood/cognition alterations (26%), and Middle Easterners had the highest arousal/reactivity symptoms (19%). Although some mean differences were observed between the ethnic subgroups, it is important to note that the smaller sample sizes limit the generalizability of these findings to the broader population.

Our discussion of the cultural differences above should be interpreted within the context of our non-statistically significant results. We recognize that the results were not statistically significant, but there were some mean differences across the sample that may have clinical relevance hence our discussion above.

The examination of PTSD symptom clusters in relation to experiences of discrimination reveals several noteworthy findings. Firstly, among the entire sample, there exists a significant

positive relation between intrusive symptoms (Cluster B) and various forms of perceived ethnic discrimination, including lifetime exposure indicating a small correlation (.284). This suggests that as lifetime exposure to discrimination increases, the severity of intrusive symptoms tends to increase, albeit weakly. With stigmatization/devaluation, there is a small correlation (.263) between intrusive symptoms and feelings of stigmatization or devaluation. This suggests that individuals who report higher levels of stigmatization or devaluation due to their ethnic background may experience more severe intrusive symptoms related to PTSD. There is also a moderate correlation (.343) between experiences of discrimination in work or school environments and intrusive symptoms suggesting higher levels of discrimination experienced in work or school settings can be associated with increased severity of intrusive symptoms among individuals.

Interestingly, the relation between PTSD symptom clusters and experiences of discrimination varies among specific ethnic groups. For African American participants, the relation between intrusive symptoms and discrimination variables was nonsignificant, except for arousal and reactivity symptoms (Cluster E) and threats/aggression, in which there is a significant positive relation. The size of the correlation suggests a moderately (.573) positive association between arousal and reactivity symptoms and perceived threats/aggression among African American participants. This finding suggests that higher levels of arousal and reactivity symptoms may be associated with perceived threats or aggression within their environments.

For participants of Asian ethnic backgrounds, intrusive symptoms have a significantly positive correlation with perceived ethnic discrimination across most measured dimensions except for threat/aggression. Lifetime exposure (.568), exclusion/rejection (.440), stigmatization/devaluation (.536), and discrimination at work/school (.529) suggests moderate to moderately strong relations between intrusive symptoms and various dimensions of perceived

ethnic discrimination among Asian participants. This highlights the significant impact of discriminatory experiences on the manifestation of intrusive symptoms within the Asian ethnic group. With the COVID-19 pandemic the distinct challenges and stressors have worsened the mental health challenges faced by the Asian ethnic group (McGarity-Palmer et al., 2024; Fisher et al., 2021; Cheah et al., 2020). This is particularly significant given that findings from our study point to discriminatory experiences as contributing significantly to the development of intrusive symptoms among Asian individuals. Experiences of discrimination could trigger symptoms of PTSD, leading to higher levels of psychological distress and diminished well-being among Asian individuals.

Interestingly, when examining the Latinx ethnic group, the results revealed no significant association between the PTSD symptom clusters and perceived ethnic discrimination. It is possible that factors unique to the Latinx community, such as cultural values, coping mechanisms, or resilience factors, may influence the way individuals perceive and respond to experiences of discrimination (Pole et al., 2005; Eisenman et al., 2008).

In the United States, various ethnic groups may demonstrate different cultural tendencies regarding collectivism, which can influence the way they perceive and respond to discrimination.

Collectivism refers to a cultural orientation that emphasizes on prioritizing the needs of the community over the individual. Asian Americans often have collectivistic values and have a strong emphasis on maintaining harmony within the community and adhering to social norms (Cornejo et al., 2020). Despite facing regular racism, many Asian Americans may feel the need to minimize instances of discrimination to avoid interrupting social harmony (Wang and Santos, 2022). On the other hand, African Americans have a complex history in the United States that has shaped their collective identity and response to discrimination (Noble and McDougal, 2009; Carson, 2009).

While there is diversity within the African American community, there is also a strong tradition of

collective struggle against systemic racism and injustice. This resilience, borne of centuries of collectively coping with frequent and extreme forms of racism and discrimination, may explain study findings showing that the African American ethnic group had the lowest prevalence rate when compared to the other ethnic groups (Bowleg et al., 2003; Stamps et al., 2021). Latinx communities in the United States also demonstrate various cultural tendencies regarding collectivism. Latinx culture emphasizes close-knit family ties and shared values. As a result, Latinx individuals may prioritize the well-being of their families and communities when facing experiences of discrimination (Kuo, 2013; Martin Romero et al., 2022).

Despite the socially constructed categories of ethnicity that often emphasize our differences, research consistently shows that the human experience of trauma reveals a profound homogeneity in our responses. It seems that individuals exhibit similar psychological and physiological reactions to traumatic events. When confronted with trauma, people from different ethnicities commonly experience a range of responses in avoidance, negative alteration in mood and cognition, arousal and reactivity symptoms, and intrusive symptoms. These reactions are driven by the same underlying mechanisms within the brain and nervous system, including the activation of the amygdala and the release of stress hormones like cortisol and adrenaline (Alexandra et al., 2022; Nutt and Malizia, 2004). These brain regions are vital in dealing with fear, creating traumatic memories, and regulating stress responses, reinforcing the idea that individuals react to trauma in similar ways.

Limitations

While the study aimed to address a critical gap in the existing literature regarding the variation of PTSD symptom clusters among different ethnic groups, several limitations were encountered. First, the study relied on self-report measures to assess probable PTSD.

While self-report measures are commonly used in psychological research, they inherently rely on participants' subjective interpretations and willingness to disclose sensitive information. This dependence on self-reported symptoms may introduce response bias, social desirability bias, or recall bias, potentially affecting the accuracy and reliability of the findings. Moreover, self-report measures may not fully capture the nuances and severity of PTSD symptoms, leading to potential underestimation or overestimation of prevalence rates within different ethnic groups.

Additionally, the study faced limitations due to its sample size, particularly concerning ethnic subgroups. The low representation of certain ethnic subgroups within the sample hindered the ability to conduct thorough subgroup analyses in order to understand the specific experiences and needs within minorities. Thus, the ability to apply these findings to broader ethnic populations may be restricted, as the sample might not sufficiently reflect the variety of ethnic communities in the study.

Furthermore, the study utilized a subset of data collected as part of a larger study, which may have introduced confounding variables not directly accounted for in the current analysis. For example, Socioeconomic status (SES) can play a role, as it can affect exposure to discrimination and mental health outcomes. Lower SES is often associated with higher stress levels and limited access to resources. Socioeconomic status (SES) can play a role, as it can affect exposure to discrimination and mental health outcomes. Lower SES is often associated with higher stress levels and limited access to resources. Levels of acculturation can also shape perceptions of discrimination and coping mechanisms for PTSD symptoms. Additionally, social support, neighborhood factors, and the type and frequency of discrimination experienced by individuals should be carefully examined. The present study did not address these confounding variables,

which have the potential to influence the study's findings. Differences in data collection protocols, sampling methods, or participant characteristics between the larger study and the subset utilized in the current analysis could potentially influence the study outcomes and conclusions.

Finally, the study platform may have also influenced results. Data was collected online from a college population as well as from a crowdsourcing platform. This indicates the potential for limitations with regard to generalizability. Both the use of SONA and crowdsourcing as a data collection platform introduce the potential for bias within the sample—all participants volunteered to participate in a study focused on trauma. Using the internet for data collection might have introduced biases, as certain demographic groups may be more or less likely to participate online. Generational status can also influence the manner in which individuals respond to surveys. For instance, younger generations may be more comfortable with online surveys and technology, leading to potentially higher participation rates and different response patterns compared to older generations who might prefer traditional paper-and-pencil measures

Recommendations For Future Research

Although this study has offered valuable insights, there are still areas for future research to explore the limitations identified and deepen our understanding of the PTSD symptom clusters within the ethnic minority groups. First, there is a need for more focused research investigating the relationship between PTSD symptom clusters and ethnic and ethnic subgroup differences.

Larger samples that include various ethnic groups/ethnic subgroups are essential to provide a comprehensive understanding of these relationships and ensuring that the findings can be applied to various cultural contexts. This could include diversifying the sample and expanding the participation pool to include a more diverse range of demographics.

Recruitment is also an important factor to consider in future research. Recruiting participants from community organizations, cultural centers, social media, churches, grocery stores, and medical facilities would help to ensure a more diverse participation pool.

Moreover, future studies should consider employing a combination of objective and subjective measures to assess PTSD symptoms, thus enhancing the validity and reliability of the findings. Objective measures, such as clinician-administered interviews or physiological assessments, can complement self-report measures and provide a more comprehensive assessment of PTSD symptomatology. Furthermore, longitudinal studies examining the trajectory of PTSD symptoms over time within ethnic minority populations can clarify the factors contributing to the development, maintenance, and resolution of PTSD symptoms within these ethnic groups.

Additionally, given the complexities of trauma experiences within specific ethnic communities, further investigation into the role of discrimination, acculturation stress, and other socio-cultural factors in the development and manifestation of PTSD symptoms is warranted. Understanding the interplay between these socio-cultural factors and PTSD symptomatology can inform targeted interventions aimed at mitigating the impact of discrimination and promoting resilience among ethnic minority populations. Furthermore, interdisciplinary approaches integrating insights from psychology, sociology, anthropology, and public health are needed to comprehensively address the multifaceted nature of PTSD within diverse ethnic communities.

Finally, future research should be directed towards developing DSM criteria that better capture the psychological harm caused by racial prejudice and discrimination. These criteria should outline the frequency, severity, and impact of discriminatory experiences on the individual's mental health and function. Research interest in race-based traumatic stress has grown significantly. Thus, incorporating race-based trauma into DSM criteria can potentially help address the mental health impact of prejudice and discrimination. This may involve recognizing the psychological consequences of systemic racism, racial violence, and intergenerational racial trauma.

References

- 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. PMID: 24226308; PMCID: PMC3922129.
- Alexandra Kredlow, M., Fenster, R. J., Laurent, E. S., Ressler, K. J., & Phelps, E. A. (2022). Prefrontal cortex, amygdala, and threat processing: implications for PTSD. *Neuropsychopharmacology* (New York, N.Y.), 47(1), 247–259. <https://doi.org/10.1038/s41386-021-01155-7>
- Amiri. (2022). Global prevalence of anxiety and PTSD in immigrants: a systematic review and meta-analysis. *Neuropsychiatrie*, 36(2), 69–88. <https://doi.org/10.1007/s40211-022-00411-6>
- Andrews, A. R., 3rd, López, C. M., Snyder, A., Saunders, B., & G Kilpatrick, D. (2019). Polyvictimization, Related Symptoms, and Familial and Neighborhood Contexts as Longitudinal Mediators of Racial/Ethnic Disparities in Violence Exposure Across Adolescence. *Journal of immigrant and minority health*, 21(4), 679–692. <https://doi.org/10.1007/s10903-018-0842-2>
- Asnaani, & Hall-Clark, B. (2017). Recent developments in understanding ethnocultural and race differences in trauma exposure and PTSD. *Current Opinion in Psychology*, 14, 96–101. <https://doi.org/10.1016/j.copsyc.2016.12.005>

- Bassett, 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.
<https://doi.org/10.1007/s00127-013-0759-y>
- Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress*, 28, 489–498.
[doi:10.1002/jts.22059](https://doi.org/10.1002/jts.22059)
- Benuto, Bennett, N. M., & Casas, J. B. (2020). Minority Participation in Randomized Controlled Trials for Prolonged Exposure Therapy: A Systematic Review of the Literature. *Journal of Traumatic Stress*, 33(4), 420–431.
<https://doi.org/10.1002/jts.22539>
- Bustamante, Cerqueira, R. O., Leclerc, E., & Brietzke, E. (2018). Stress, trauma, and posttraumatic stress disorder in migrants: a comprehensive review. *Revista Brasileira de Psiquiatria*, 40(2), 220–225. <https://doi.org/10.1590/1516-4446-2017-2290>
- Boffa, J. W., Stanley, I. H., Hom, M. A., Norr, A. M., Joiner, T. E., & Schmidt, N. B. (2017). PTSD symptoms and suicidal thoughts and behaviors among firefighters. *Journal of Psychiatric Research*, 84, 277–283.
<http://dx.doi.org/10.1016/j.jpsychires.2016.10.014>

- Bowleg, L., Huang, J., Brooks, K., Black, A., & Burkholder, G. (2003). Triple Jeopardy and Beyond: Multiple Minority Stress and Resilience Among Black Lesbians. *Journal of Lesbian Studies*, 7(4), 87–108. https://doi.org/10.1300/J155v07n04_06
- Brondolo, E., Kelly, K. P., Coakley, V., Gordon, T., Thompson, S., Levy, E., Cassells, A., Tobin, J. N., Sweeney, M., & Contrada, R. J. (2005). The Perceived Ethnic Discrimination Questionnaire: Development and Preliminary Validation of a Community Version. *Journal of Applied Social Psychology*, 35(2), 335–365. <https://doi.org/10.1111/j.1559-1816.2005.tb02124.x>
- Carson, L. R. (2009). “I am because we are:” collectivism as a foundational characteristic of African American college student identity and academic achievement. *Social Psychology of Education*, 12(3), 327–344. <https://doi.org/10.1007/s11218-009-9090-6>
- Ceri, V., Özlü-Erkilic, Z., Özer, Ü., Kadak, T., Winkler, D., Dogangün, B., & Akkaya-Kalayci, T. (2017). Mental health problems of second generation children and adolescents with migration background. *International Journal of Psychiatry in Clinical Practice*, 21(2), 142–147. <https://doi.org/10.1080/13651501.2017.1291820>
- Cheah, C. S. L., Wang, C., Ren, H., Zong, X., Cho, H. S., & Xue, X. (2020). COVID-19 Racism and Mental Health in Chinese American Families. *Pediatrics (Evanston)*, 146(5), e2020021816-. <https://doi.org/10.1542/peds.2020-021816>

- Chen, S. H., & Zhou, Q. (2019). Cultural Values, Social Status, and Chinese American Immigrant Parents' Emotional Expressivity. *Journal of cross-cultural psychology*, 50(3), 381–395. <https://doi.org/10.1177/0022022118817653>
- Chung, H., & Epstein, N. B. (2014). Perceived racial discrimination, acculturative stress, and psychological distress among Asian immigrants: The moderating effects of support and interpersonal strain from a partner. *International Journal of Intercultural Relations*, 42, 129–139. <https://doi.org/10.1016/j.ijintrel.2014.04.003>
- Coleman, J. A., Ingram, K. M., & Sheerin, C. M. (2019). Racial Differences in Posttraumatic Stress Disorder Symptoms Among African American and Caucasian Male Veterans. *Traumatology (Tallahassee, Fla.)*, 25(4), 297–302. <https://doi.org/10.1037/trm0000201>
- Cornejo, M., Agrawal, S., Chen, J., Yeung, A., & Trinh, N.-H. (2020). Cultural Risk and Protective Factors for Depressive Symptoms in Asian American College Students. *Adolescent Research Review*, 5(4), 405–417. <https://doi.org/10.1007/s40894-019-00114-0>
- de Silva, U., Glover, N., & Katona, C. (2021). Prevalence of complex post-traumatic stress disorder in refugees and asylum seekers: systematic review. *BJPsych Open*, 7(6), e194–e194. <https://doi.org/10.1192/bjo.2021.1013>
- Denson, Marshall, G. N., Schell, T. L., & Jaycox, L. H. (2007). Predictors of Posttraumatic Distress 1 Year After Exposure to Community Violence: The

- Importance of Acute Symptom Severity. *Journal of Consulting and Clinical Psychology*, 75(5), 683–692. <https://doi.org/10.1037/0022-006X.75.5.683>
- Eisenman, D. P., Meredith, L. S., Rhodes, H., Green, B. L., Kaltman, S., Cassells, A., & Tobin, J. N. (2008). PTSD in Latino Patients: Illness Beliefs, Treatment Preferences, and Implications for Care. *Journal of General Internal Medicine : JGIM*, 23(9), 1386–1392. <https://doi.org/10.1007/s11606-008-0677-y>
- Fegert, Diehl, C., Leyendecker, B., Hahlweg, K., & Prayon-Blum, V. (2018). Psychosocial problems in traumatized refugee families: overview of risks and some recommendations for support services. *Child and Adolescent Psychiatry and Mental Health*, 12(1), 5–5. <https://doi.org/10.1186/s13034-017-0210-3>
- Fischer, Bennett, M. E., Pietrzak, R. H., Kok, B. C., & Roche, D. J. O. (2022). Examining the associations between PTSD symptom clusters and alcohol-related problems in a sample of low-SES treatment-seeking Black/African American adults. *Journal of Psychiatric Research*, 154, 261–267. <https://doi.org/10.1016/j.jpsychires.2022.07.060>
- Fisher, C. B., Tao, X., Liu, T., Giorgi, S., & Curtis, B. (2021). COVID-Related Victimization, Racial Bias and Employment and Housing Disruption Increase Mental Health Risk Among U.S. Asian, Black and Latinx Adults. *Frontiers in Public Health*, 9, 772236–772236. <https://doi.org/10.3389/fpubh.2021.772236>
- Forde, A. T., Crookes, D. M., Suglia, S. F., & Demmer, R. T. (2019). The weathering hypothesis as an explanation for racial disparities in health: a systematic review.

Annals of epidemiology, 33, 1–18.e3.

<https://doi.org/10.1016/j.annepidem.2019.02.011>

Franco, I., Olazagasti, C., Osman, F., & Duma, N. (2022). Proyecto ELEVAR: Evaluating the Latinx Experience With the Health Care System Through Variables on Access and Resources. *JCO Oncology Practice*, 18(5), e814–e826.

<https://doi.org/10.1200/OP.22.00043>

Gradus, J. (2014). Epidemiology of PTSD - PTSD: National Center for PTSD. Va.gov.

<https://www.ptsd.va.gov/professional/treat/essentials/epidemiology.asp>

Harnett, Dumornay, N. M., Delity, M., Sanchez, L. D., Mohiuddin, K., Musey, P. I., Seamon, M. J., McLean, S. A., Kessler, R. C., Koenen, K. C., Beaudoin, F. L., Lebois, L. A. M., van Rooij, S. J. H., Sampson, N. A., Michopoulos, V., Maples-Keller, J. L., Haran, J. P., Storrow, A. B., Lewandowski, C., ... Punches, B. E. (2023). Prior differences in previous trauma exposure primarily drive the observed racial/ethnic differences in posttrauma depression and anxiety following a recent trauma. *Psychological Medicine*, 53(6), 2553–2562.

<https://doi.org/10.1017/S0033291721004475>

Hasson, Easton, S. D., Iriarte, A. D.-V., O'Dwyer, L. M., Underwood, D., & Crea, T. M. (2021). Examining the Psychometric Properties of the Child PTSD Symptom Scale Within a Sample of Unaccompanied Immigrant Children in the United States. *Journal of Loss & Trauma*, 26(4), 323–335.

- Hinton, Lewis-Fernandez, R., & Pollack, M. H. (2009). A Model of the Generation of Ataque de Nervios: The Role of Fear of Negative Affect and Fear of Arousal Symptoms: Anxiety Disorders in Cross-Cultural Perspective. *CNS Neuroscience & Therapeutics*, 15(3), 264–275.
- Iwamoto, D. K., & Liu, W. M. (2010). The impact of racial identity, ethnic identity, asian values and race-related stress on Asian Americans and Asian international college students' psychological well-being. *Journal of counseling psychology*, 57(1), 79–91. <https://doi.org/10.1037/a0017393>
- Jenkins, J. H. (1996). Culture, emotion, and PTSD. In A. J. Marsella, M. J. Friedman, E. T. Gerrity, & R. M. Scurfield (Eds.), *Ethnocultural aspects of posttraumatic stress disorder: Issues, research, and clinical applications* (pp. 165–182). *American Psychological Association*. <https://doi.org/10.1037/10555-006>
- Kaplan, Stow, H. D., & Szwarc, J. (2016). Responding to the Challenges of Providing Mental Health Services to Refugees: An Australian Case Report. *Journal of Health Care for the Poor and Underserved*, 27(3), 1159–1170. <https://doi.org/10.1353/hpu.2016.0134>
- Keller, Joscelyne, A., Granski, M., & Rosenfeld, B. (2017). Pre-Migration Trauma Exposure and Mental Health Functioning among Central American Migrants Arriving at the US Border. *PloS One*, 12(1), e0168692–e0168692. <https://doi.org/10.1371/journal.pone.0168692>

- Kim, B. S. K., Li, L. C., & Ng, G. F. (2005). The Asian American Values Scale-Multidimensional: Development, Reliability, and Validity. *Cultural Diversity & Ethnic Minority Psychology*, 11(3), 187–201. <https://doi.org/10.1037/1099-9809.11.3.187>
- Kim, S., Zhang, W., Pak, V., Aqua, J. K., Hertzberg, V. S., Spahr, C. M., Slavich, G. M., & Bai, J. (2021). How stress, discrimination, acculturation and the gut microbiome affect depression, anxiety and sleep among Chinese and Korean immigrants in the USA: a cross-sectional pilot study protocol. *BMJ open*, 11(7), e047281. <https://doi.org/10.1136/bmjopen-2020-047281>
- Kohn, R., Levav, I., Donaire, I., Machuca, M., & Tamashiro, R. (2005). Psychological and psychopathological reactions in Honduras following Hurricane Mitch: implications for service planning. *Revista panamericana de salud publica = Pan American journal of public health*, 18(4-5), 287–295. <https://doi.org/10.1590/s1020-49892005000900009>
- Koo, K. H., Hebenstreit, C. L., Madden, E., & Maguen, S. (2016). PTSD detection and symptom presentation: Racial/ethnic differences by gender among veterans with PTSD returning from Iraq and Afghanistan. *Journal of Affective Disorders*, 189, 10–16. <http://dx.doi.org/10.1016/j.jad.2015.08.038>
- Kuo, B. C. H. (2013). Collectivism and coping: Current theories, evidence, and measurements of collective coping. *International Journal of Psychology*, 48(3), 374-. <https://doi.org/10.1080/00207594.2011.640681>

- Kwobah, E. K., Misra, S., Ametaj, A. A., Stevenson, A., Stroud, R. E., Koenen, K. C., Gelaye, B., Kariuki, S. M., Newton, C. R., & Atwoli, L. (2022). Traumatic experiences assessed with the life events checklist for Kenyan adults. *Journal of affective disorders*, 303, 161–167. <https://doi.org/10.1016/j.jad.2022.02.011>
- Kramer, E. J., Kwong, K., Lee, E., & Chung, H. (2002). Cultural factors influencing the mental health of Asian Americans. *The Western Journal of Medicine*, 176(4), 227–231.
- Loo, C. M. (1994). Race-related PTSD: The Asian American Vietnam veteran. *Journal of Traumatic Stress*, 7(4), 637–656. <https://doi.org/10.1002/jts.2490070410>
- Maercker, A., Cloitre, M., Bachem, R., Schlumpf, Y. R., Khoury, B., Hitchcock, C., & Bohus, M. (2022). Complex post-traumatic stress disorder. *Lancet (London, England)*, 400(10345), 60–72. [https://doi.org/10.1016/S0140-6736\(22\)00821-2](https://doi.org/10.1016/S0140-6736(22)00821-2)
- Marsella, A. J., Friedman, M. J., Gerrity, E. T., & Scurfield, R. M. (1996). Ethnocultural aspects of posttraumatic stress disorder: Issues, research, and clinical applications (pp. xxii-576). American Psychological Association.
- Marshall, Hooper, S. C., Gomez, F., Middlemass, K. M., Kilpela, L. S., & Becker, C. B. (2023). Posttraumatic Stress Disorder and Other Mental Health Correlates in a Predominantly Latino/Hispanic Sample Living With Food Insecurity. *Psychological Trauma*. <https://doi.org/10.1037/tra0001503>

- Marshall, G. N., Schell, T. L., & Miles, J. N. (2009). Ethnic differences in posttraumatic distress: Hispanics' symptoms differ in kind and degree. *Journal of consulting and clinical psychology, 77*(6), 1169–1178. <https://doi.org/10.1037/a0017721>
- Martin Romero, M. Y., Gonzalez, L. M., Stein, G. L., Alvarado, S., Kiang, L., & Coard, S. I. (2022). Coping (Together) With Hate: Strategies Used by Mexican-Origin Families in Response to Racial-Ethnic Discrimination. *Journal of Family Psychology, 36*(1), 3–12. <https://doi.org/10.1037/fam0000760>
- Mayorga, Shepherd, J. M., Matoska, C. T., Kabel, K. E., Vujanovic, A. A., Viana, A. G., & Zvolensky, M. J. (2023). Posttraumatic stress among trauma-exposed Hispanic/Latinx adults: relations to mental health. *Cognitive Behaviour Therapy, 52*(4), 317–330. <https://doi.org/10.1080/16506073.2023.2176783>
- McClendon, Dean, K. E., & Galovski, T. (2020). Addressing Diversity in PTSD Treatment: Disparities in Treatment Engagement and Outcome Among Patients of Color. *Current Treatment Options in Psychiatry, 7*(3), 275–290. <https://doi.org/10.1007/s40501-020-00212-0>
- McGarity-Palmer, R., Saw, A., Tsoh, J. Y., & Yellow Horse, A. J. (2024). Trends in Racial Discrimination Experiences for Asian Americans During the COVID-19 Pandemic. *Journal of racial and ethnic health disparities, 11*(1), 168–183. <https://doi.org/10.1007/s40615-022-01508-y>

- McGuire, T. G., & Miranda, J. (2008). New Evidence Regarding Racial And Ethnic Disparities In Mental Health: Policy Implications. *Health Affairs*, 27(2), 393–403. <https://doi.org/10.1377/hlthaff.27.2.393>
- McLaughlin, Alvarez, K., Fillbrunn, M., Green, J. G., Jackson, J. S., Kessler, R. C., Sadikova, E., Sampson, N. A., Vilsaint, C. L., Williams, D. R., & Alegría, M. (2019). Racial/ethnic variation in trauma-related psychopathology in the United States: a population-based study. *Psychological Medicine*, 49(13), 2215–2226. <https://doi.org/10.1017/S0033291718003082>
- Morgan, R. E., & Oudekerk, B. A. (2019). Criminal Victimization, 2018 (NCJ No. 253043). U.S. Department of Justice, Bureau of Justice Statistics. Retrieved from <https://www.bjs.gov/content/pub/pdf/cv18.pdf>
- Nadal, K. L. Y., Corpus, G., & Hufana, A. (2022). The Forgotten Asian Americans: Filipino Americans' Experiences With Racial Microaggressions and Trauma. *Asian American Journal of Psychology*, 13(1), 51–61. <https://doi.org/10.1037/aap0000261>
- Nickerson, A., Cloitre, M., Bryant, R. A., Schnyder, U., Morina, N., & Schick, M. (2016). The factor structure of complex posttraumatic stress disorder in traumatized refugees. *European Journal of Psychotraumatology*, 7(1), 33253–33253. <https://doi.org/10.3402/ejpt.v7.33253>

- Neace, R. T., Thayer, C., & Nasir, S. (2020). Understanding refugees: A complex discussion. *Handbook of refugee experience: Trauma, resilience, and recovery*, 9-20.
- Nobles, W., & McDougal, S. (2009). Seeking the Sakhu: foundational writings for an African psychology [Review of Seeking the Sakhu: foundational writings for an African psychology]. *Journal of Black Studies*, 39(3), 487–489.
<https://doi.org/10.1177/0021934707308980>
- Norris FH, Perilla JL, Murphy AD. (2001). Postdisaster stress in the United States and Mexico: a cross-cultural test of the multicriterion conceptual model of posttraumatic stress disorder. *J Abnorm Psychol*, 110(4):553-63. doi: 10.1037//0021-843x.110.4.553. PMID: 11727945.
- Nutt, D. J., & Malizia, A. L. (2004). Structural and functional brain changes in posttraumatic stress disorder. *Journal of Clinical Psychiatry*, 65, 11-17.
- O’Neill, L., Fraser, T., Kitchenham, A., & McDonald, V. (2018). Hidden Burdens: a Review of Intergenerational, Historical and Complex Trauma, Implications for Indigenous Families. *Journal of Child & Adolescent Trauma*, 11(2), 173–186.
<https://doi.org/10.1007/s40653-016-0117-9>
- Ortega, & Rosenheck, R. (2000). Posttraumatic Stress Disorder Among Hispanic Vietnam Veterans. *The American Journal of Psychiatry*, 157(4), 615–619.
<https://doi.org/10.1176/appi.ajp.157.4.615>

- Perilla, Norris, F. H., & Lavizzo, E. A. (2002). Ethnicity, culture, and disaster response: Identifying and explaining ethnic differences in PTSD six months after Hurricane Andrew. *Journal of Social and Clinical Psychology, 21*(1), 20–45.
<https://doi.org/10.1521/jscp.21.1.20.22404>
- Pieterse, Johnson, V., & Carter, R. T. (2023). The relationship between posttraumatic stress disorder and race-based traumatic stress. *Psychological Trauma.*
<https://doi.org/10.1037/tra0001528>
- Pole, Best, S. R., Metzler, T., & Marmar, C. R. (2005). Why Are Hispanics at Greater Risk for PTSD? *Cultural Diversity & Ethnic Minority Psychology, 11*(2), 144–161. <https://doi.org/10.1037/1099-9809.11.2.144>
- Pole, Gone, J. P., & Kulkarni, M. (2008). Posttraumatic Stress Disorder Among Ethnoracial Minorities in the United States. *Clinical Psychology (New York, N.Y.), 15*(1), 35–61. <https://doi.org/10.1111/j.1468-2850.2008.00109.x>
- Pole N, Best SR, Weiss DS, Metzler T, Ligerman AM, Fagan J, Marmar CR. (2001) Effects of gender and ethnicity on duty-related posttraumatic stress symptoms among urban police officers. *Journal of Nervous and Mental Diseases.* 189:442–448.
- Roberts, A., Gilman, S., Breslau, J., Breslau, N., & Koenen, K. (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

- Rothe, Lewis, J., Castillo-Matos, H., Martinez, O., Busquets, R., & Martinez, I. (2002). Posttraumatic Stress Disorder Among Cuban Children and Adolescents After Release From a Refugee Camp. *Psychiatric Services* (Washington, D.C.), 53(8), 970–976. <https://doi.org/10.1176/appi.ps.53.8.970>
- Ruglass, Morgan-López, A. A., Saavedra, L. M., Hien, D. A., Fitzpatrick, S., Killeen, T. K., Back, S. E., & López-Castro, T. (2020). Measurement Nonequivalence of the Clinician-Administered PTSD Scale by Race/Ethnicity: Implications for Quantifying Posttraumatic Stress Disorder Severity. *Psychological Assessment*, 32(11), 1015–1027. <https://doi.org/10.1037/pas0000943>
- Saw, A., & Okazaki, S. (2010). Family Emotion Socialization and Affective Distress in Asian American and White American College Students. *Asian American Journal of Psychology*, 1(2), 81–92. <https://doi.org/10.1037/a0019638>
- 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. *The American Psychologist*, 74(1), 101–116. <https://doi.org/10.1037/amp0000339>
- Spoont, M., & McClendon, J. (2020). Racial and Ethnic Disparities in PTSD. https://www.ptsd.va.gov/publications/rq_docs/V31N4.pdf
- Stamps, D. L., Mandell, L., & Lucas, R. (2021). Relational maintenance, collectivism, and coping strategies among Black populations during COVID-19. *Journal of*

Social and Personal Relationships, 38(8), 2376–2396.

<https://doi.org/10.1177/02654075211025093>

- Stanley, Rogers, M. L., Hanson, J. E., Gutierrez, P. M., & Joiner, T. E. (2019). PTSD Symptom Clusters and Suicide Attempts Among High-Risk Military Service Members: A Three-Month Prospective Investigation. *Journal of Consulting and Clinical Psychology*, 87(1), 67–78. <https://doi.org/10.1037/ccp0000350>
- Stephens, Sue, S., Roy-Byrne, P., Unützer, J., Wang, J., Rivara, F. P., Jurkovich, G. J., & Zatzick, D. F. (2010). Ethnoracial variations in acute PTSD symptoms among hospitalized survivors of traumatic injury. *Journal of Traumatic Stress*, 23(3), 384–392. <https://doi.org/10.1002/jts.20534>
- Stevenson, A., Beltran, M., Misra, S., Ametaj, A. A., Bronkhorst, A., Gelaye, B., Koenen, K. C., Pretorius, A., Stein, D. J., & Zingela, Z. (2023). Trauma exposure and psychometric properties of the life events checklist among adults in South Africa. *European journal of psychotraumatology*, 14(1), 2172257. <https://doi.org/10.1080/20008066.2023.2172257>
- Theisen-Womersley, G. (2021). Trauma and Resilience among Displaced Populations : A Sociocultural Exploration. *Springer Nature*.
- U.S. Department of Justice. (2021, November 17). 2020 FBI Hate Crimes Statistics. [Www.justice.gov](https://www.justice.gov/crs/highlights/2020-hate-crimes-statistics). <https://www.justice.gov/crs/highlights/2020-hate-crimes-statistics>

- Walton, Raines, A. M., Cuccurullo, L. J., Vidaurri, D. N., Villarosa-Hurlocker, M. C., & Franklin, C. L. (2018). The relationship between DSM-5 PTSD symptom clusters and alcohol misuse among military veterans. *The American Journal on Addictions, 27*(1), 23–28. <https://doi.org/10.1111/ajad.12658>
- Wang, C. D., Carbajal, I., Barajas-Munoz, I. A., Julio, K., Gomez, A., Trummer, M., & Scalise, D. (2022). Adult attachment, acculturation, acculturative stress, and psychological distress of first-generation latinx immigrants. *Counselling Psychology Quarterly, 35*(3), 634–651. <https://doi.org/10.1080/09515070.2021.1933910>
- Wang, S. C., & Santos, B. M. C. (2022). “What support?”: A qualitative study on social support for Asian American victims of racism during the COVID-19 pandemic. *Frontiers in Public Health, 10*, 961215–961215. <https://doi.org/10.3389/fpubh.2022.961215>
- Weathers, F.W., Blake, D.D., Schnurr, P.P., Kaloupek, D.G., Marx, B.P., & Keane, T.M. (2013). The Life Events Checklist for DSM-5 (LEC-5). Instrument available from the National Center for PTSD at www.ptsd.va.gov
- Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). The PTSD Checklist for DSM-5 (PCL-5). Scale available from the National Center for PTSD. Boston (MA): National Center for PTSD
- Whealin, Stotzer, R., Nelson, D., Li, F., Liu-Tom, H.-T. T., & Pietrzak, R. H. (2013). Evaluating PTSD prevalence and resilience factors in a predominantly Asian

American and Pacific Islander sample of Iraq and Afghanistan Veterans. *Journal of Affective Disorders*, 150(3), 1062–1068.

<https://doi.org/10.1016/j.jad.2013.05.044>

Williams, Malcoun, E., Sawyer, B. A., Davis, D. M., Bahojb Nouri, L., & Bruce, S. L. (2014). Cultural adaptations of prolonged exposure therapy for treatment and prevention of posttraumatic stress disorder in african americans. *Behavioral Sciences*, 4(2), 102–124. <https://doi.org/10.3390/bs4020102>

Yang, Do, Q. A., Nhan, E. R., & Chen, J. A. (2023). A Mixed-Methods Study of Race-Based Stress and Trauma Affecting Asian Americans During COVID. *Clinical Psychological Science*, 2023. <https://doi.org/10.1177/21677026231180810>

Yang, K. G., Rodgers, C. R. R., Lee, E., & Lê Cook, B. (2020). Disparities in Mental Health Care Utilization and Perceived Need Among Asian Americans: 2012–2016. *Psychiatric Services (Washington, D.C.)*, 71(1), 21–27. <https://doi.org/10.1176/appi.ps.201900126>