

Understanding the Presentation of PTSD in a Sample of Latina Immigrant Women

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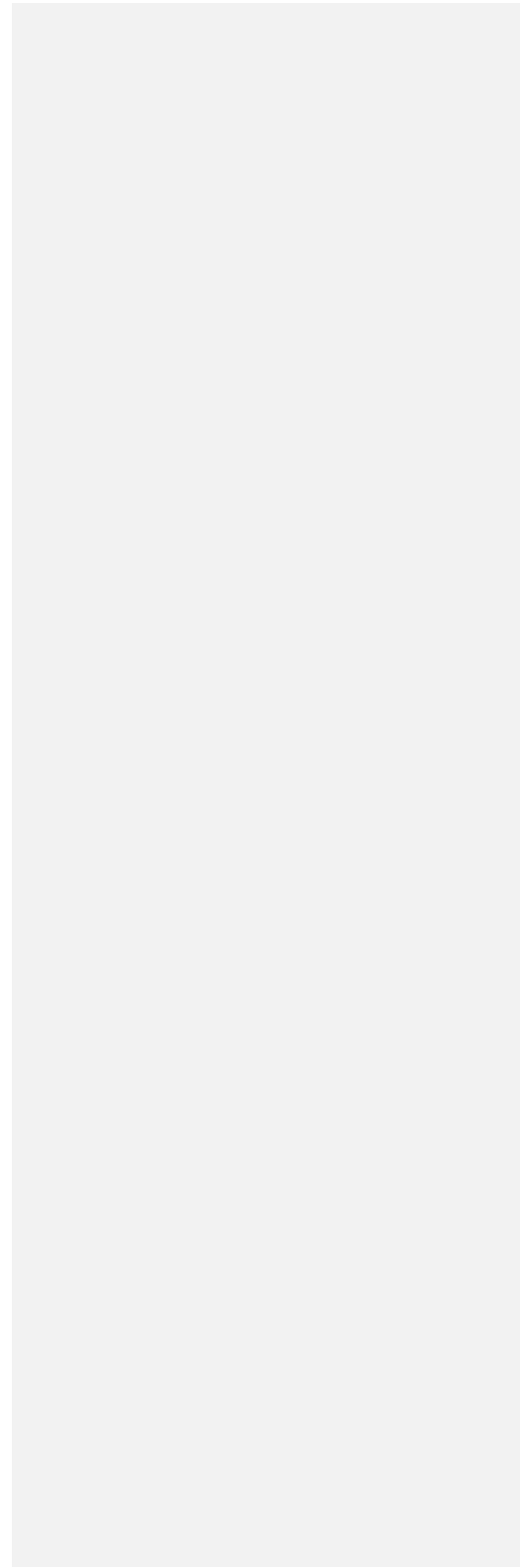
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School of Public Health

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University of Washington

Abstract

Understanding the Presentation of PTSD in a Sample of Latina Immigrant Women

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Health Systems and Population Health

Introduction: Latina immigrant women are exposed to potentially traumatic events (PTE) before, during, and after migration to the US. These experiences can contribute to the presence of Post Traumatic Stress Disorder (PTSD) symptoms, which include reliving difficult memories, avoiding situations reminiscent of past trauma, or feeling on edge. These symptoms often cooccur with depression symptoms, anxiety symptoms, and somatic symptoms. The association between somatic symptoms, like headaches, back pain, chest pain, or sleep disturbances, and PTSD symptoms is not well understood among Latina immigrant women.

Objectives: The goal of this study was to describe PTSD symptom severity in a sample of Latina immigrant women from King County, Washington. Additionally, this study examines the association between PTSD symptoms and other mental health symptoms in this population with an emphasis on somatic symptoms.

Methods: We used baseline survey data, including demographic and mental health symptom information for 223 participants recruited from community-based organizations. A trained, bilingual member of the research team collected data in person or over the phone. Validated **mental health** measures were used to assess symptom severity, including PTSD (PCL-6), somatic (PHQ-15), depression PHQ-9, and anxiety (GAD-7). Descriptive analysis, t-tests, ANOVA, and Tukey HSD test were used to conduct this secondary analysis of the data.

Results: Almost all (84%) participants reported at least one potentially traumatic event and 42% endorsed PTSD symptom severity exceeding the 14-point cutoff. Mean PTSD severity was higher among those living alone and those with cooccurring symptoms of depression and anxiety. There was a weak linear correlation between PTSD symptom severity and somatic symptom severity ($R^2 = 0.21$) and participants who endorsed back pain, chest pain, feeling tired or having low energy, or trouble sleeping were more likely to have high PTSD symptom severity.

Conclusions: Exposure to PTEs was relatively common among his population of Latina immigrants living in King County. The prevalence of PTSD symptoms and their association with other mental health symptoms suggest the need for preventative mental health treatment addressing the full scope of Latina immigrants' mental health needs in a comprehensive manner.

Introduction

Latino immigrants are the largest immigrant group currently living in the United States (US) (Moslimani & Passel, 2024). According to the Census Bureau's 2023 American Community Survey, about 24 million current US residents were born in a Latin American country (U.S. Census Bureau, 2023). There are about 350,000 foreign-born people from Latin America in Washington State and about two thirds of them are from Mexico (U.S. Census Bureau, 2023).

Latinos who immigrate to the US arrive by a variety of pathways. Some immigrants apply for visas, refugee status, or asylum which can lead to opportunities for permanent residency and ultimately, naturalization. Others may enter the country without authorization and legal pathways to citizenship. In 2023, The US granted 241,583 immigrant visas to Latinos (Bureau of Consular Affairs, n.d.). It also granted 6,320 Latinos with refugee status, and 15,760 with asylum (Schofield & Yap, 2024; Executive Office for Immigration Review, n.d.). Meanwhile, U.S. Customs and Border Protections reported about 2.5 million encounters with people trying to enter the country along the southwestern border without authorization throughout 2023 (US Customs and Border Protection, 2025). In 2021, The number of women immigrating was slightly below parity (48%) with the number of men after increasing in recent years (up from 44% in 2000) (Haner & Lopez, 2023).

Women have migration experiences that are distinct from men and those with other gender identities. Some research has shown that women living in Mexico may be less likely to immigrate than men, likely due to their decision-making power in families and their

access to financial capital (Nobles & McKelvey, 2015). The mental health of Latina immigrants may be at greater risk upon experiencing family separation, including leaving family behind in their country of origin (Arenas et al., 2021). While traveling, women may carry an unequal burden for domestic labor and childcare (Leyva-Florez et al., 2019). They are more likely to become the victims of sexual violence while men are more likely to be subjected to other forms of violence (Leyva-Florez et al., 2019).

Latina immigrant women are frequently exposed to potentially traumatic events (PTE) before migrating, while in transit, and after arriving in the US (Ornelas & Perreira, 2011). Those who are compelled to migrate may be experiencing poverty or may need to escape violence (Mercado et al., 2024, Ornelas & Perreira, 2011). While traveling toward the border and waiting to cross, migrants are tested physically by harsh environmental conditions including extreme heat and cold (Mercado et al., 2024). They may fall victim to theft or financial coercion as well as physical assaults or separation from loved ones (Cleaveland & Kirsch, 2020). After arriving in the US, migrants often experience distress due to discrimination and threats of deportation, especially if they are undocumented (Garcini et al., 2018).

Trauma can sometimes lead to adverse mental health symptoms and physiological changes when people adapt to cope with the extreme stress of the event. Post Traumatic Stress Disorder (PTSD) is defined by the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Health Disorders (DSM-5) (American Psychiatric Association, 2013). It is precipitated by first or secondhand exposure to the real possibility of death or serious injury, including the consequences of physical and sexual

assault. The condition is associated with reexperiencing, avoidance, negative cognition, and hyperarousal symptoms that are severe enough to impair quality of life for one month or more.

PTSD can manifest in many ways, and its presentation may be complicated by the presence of other mental health conditions. The PTSD symptoms commonly endorsed by civilian populations include reliving difficult memories, avoiding activities that remind a person of trauma, feeling irritable, having difficulty concentrating, and feeling on edge (Weathers et al., 1993). Diagnosed cases of PTSD are commonly comorbid with depression and, to a lesser extent, anxiety (Brady et al., 2000; Eghaneyan et al., 2023; Kaltman et al., 2010; Pérez Benítez et al., 2014). There is no clear, singular causal pathway that leads to PTSD with comorbidities. Instead, the relationship between conditions is likely bidirectional and may be influenced by genetic factors that predispose people to higher risk for multiple mental health conditions at once (Angelakis & Nixon, 2015; Smoller, 2016). Comorbid diagnoses can make PTSD treatment less tractable and require special consideration from treating clinicians in some cases (Angelakis & Nixon, 2015; Sripada et al., 2019).

Additionally, having PTSD or experiencing traumatic stressors is sometimes associated with comorbidities and somatic symptoms such as chronic pain, sleep disturbance, or headaches (Abarca et al., 2023; Gupta, 2013). One investigation of Latino immigrants' health beliefs about trauma suggests that Latino immigrants may feel that their traumatic experiences influence a variety of psychological and somatic symptoms including cardiovascular illness and chronic pain (Eisenman et al., 2008). These somatic

symptoms may warrant additional treatment considerations (Benítez et al., 2013). It is unclear how much the presence of somatic symptoms can indicate about underlying mental health conditions.

Latina immigrants are resilient. In general, the majority do not meet criteria for PTSD diagnosis despite high levels of exposure to traumatic events (Abarca et al., 2023; Mercado et al., 2024). It is believed that individual characteristics, social support, and cultural factors allow many to go through the trauma of migration without developing symptoms in the long term (Cardoso & Thompson, 2010). But the prevalence of PTSD symptoms in this population is still notable. A recent study of Mexican immigrant women in Chicago found that 38% endorsed clinically significant PTSD symptoms during psychiatric interviews (Kimmell et al., 2021). There is some clinical evidence that PTSD and somatic symptom comorbidity may be common among Latinos and at least one pilot program has been tested to treat the two disorders in conjunction (Abarca et al., 2023; Benítez et al., 2013). However, there have been no recent studies assessing the relationship between PTSD symptoms and somatic symptoms among Latino immigrants in the US. The goal of this study is to provide evidence about the presentation of PTSD among Latina immigrants and provide a description of the relationship of somatic symptoms to PTSD symptoms among a sample of Latina immigrants from King County.

Commented [IO1]: No need to add this now - but would have been good to have some discussion in the introduction about PTSD comorbidity with depression and anxiety too

Commented [CK2R1]: I added a couple sentences above, but can easily remove them if they are not quite right.

Commented [IO3]: I'm not sure what access issues means here or how medical mistrust relates to lack of research. I would just state that there has been limited research and not speculate why

Commented [IO4R3]: This statement puts blame on the population for lack of research when it is really the fault of researchers, funders, etc.

Commented [LS5R3]: Agree with both of these comments. Coulter, you might consider adding to the Discussion this context about why there is limited research on this topic/with this population (lack of funding, lack of representation among researchers or researchers not selecting research topics driven by the community)

Commented [CK6R3]: Agreed. When I was writing this, I was thinking that the academic world and health care system have not really given this population good reason to trust (ie not attending to the right needs or using best CBPR practice), but that's not really what I ended up writing.

I think I see the community-based approach as a strength of the baseline study and the ALMA intervention (maybe leading to increased accuracy when assessing symptoms because of the trust / context provided by improved relationships), and I was somehow trying to suggest that there is a need for studies and interventions like these if we really want to know what's going on. Like, what's the use of 100 studies of people's mental health if the participants didn't trust the researcher and the researcher didn't understand what the people were saying.

Let me know if you think this is worth expanding on, otherwise I will delete and streamline this part!

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Methods

Study Sample

We used data from a study evaluating the Amigas Latinas Motivando el Alma (ALMA) program, a community-based mental health intervention designed prevent and reduce depression among Latina immigrants in King County (Ornelas et al., 2023). Participants were identified through partnerships with community organizations using a convenience sampling method. Potential participants were screened by trained, bilingual interviewers who were a part of the research team to determine that they were older than 18 years, spoke Spanish, identified as a Latina immigrant, and did not have severe mental health symptoms that required more advanced intervention. Candidates completed the Patient Health Questionnaire-9 (PHQ-9) (Kroenke et al., 2001) to confirm eligibility. Those who scored in the mild to moderate range (0-20) were recruited to participate in the program while those who scored above 20 out of 27 possible points were referred to consultation with a mental health counselor on the research team.

In total, 226 women participated in the study. For the first half of the study (N=107) surveys were conducted by a bilingual member of the research team in person while in the second half of the study (N=119) surveys were conducted by phone due to restrictions associated with the COVID-19 pandemic. This study used data from baseline surveys collected from all participants. This included demographics and mental health measures, like the PHQ-9 which measures depression symptoms, the GAD-7 which measures anxiety

Commented [LS8]: state whether any IRB approval for your secondary data analysis

Commented [IO9]: I feel like I've corrected this sentence several times - and am doing so again. You are conflating the study and the intervention here.

Commented [LS10]: spell out and cite this and other measures on next page

Commented [LS11]: minor comment - specify the range here in numbers for readers not familiar with what mild to moderate PHQ-9 scores

Commented [LS12]: what is the cut off score?

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symptoms, and others detailed below (Kroenke et al., 2001, Spitzer et al. 2006).

Participants received \$30 for completing the baseline measures.

Measures

Post-Traumatic Stress Disorder Symptoms: We assessed PTSD symptoms using the six-item PCL-C designed for civilian populations (Lang & Stein, 2005). Participants are asked to rate how much they have been bothered by a set of six symptoms in the past month. Answers ranged from 1 (Not bothered at all) to 5 (extremely bothered). The maximum possible score was 30, and an overall score of 14 or higher indicates symptom severity consistent with significant risk for PTSD (Han et al., 2016; Lang & Stein, 2005). Spanish versions of the longer PCL-C survey have demonstrated similar performance to their English counterparts on an item-by-item basis (Miles et al., 2008).

Commented [LS14]: cite

Somatic Symptoms: The PHQ-15 is a 15-question survey which asked participants to rate the severity of a range of symptoms over the past 4 weeks. Responses range from zero (not bothered by the symptom at all) to 2 (Bothered by the symptom a lot). The maximum score possible is 30. Scores were binned into 4 categories of severity: 0-4 (minimal), 5-9 (mild), 10-14 (moderate), and 15 to 30 (severe). This particular measure has been validated among Spanish-speaking populations in Spain (Montalbán et al., 2010). Subsequent studies attempting to adapt the measure for cultural specificity to Mexico produced a very similar survey with only two differences in wording (Doddoli & Rivera, 2023). In this study, the PHQ-15 was administered to the first half of participants (N = 107) who completed the measures in person.

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Traumatic Life Events: Participants completed an adjusted version of the Life Events Checklist which was developed and validated by the National Center for PTSD (Gray et al., 2004; Weathers et al., 2013). The survey measure listed 14 potentially traumatic events and provided a space to describe any additional events that the participants considered significant. Examples of potentially traumatic experiences include medical procedures that caused fear or stress, the sudden, unexpected death of someone close, and serious accident or injury. Possible answers include “yes”, “no”, and “unsure”. Scores can range from zero to a maximum of 15.

Data Analysis

We calculated descriptive statistics for all study variables, including means and frequencies. The average severity of PTSD symptoms for different sets of demographic factors was calculated and compared using t-tests and analysis of variance (ANOVA). The association of PTSD symptoms with depression and anxiety symptoms was calculated using an ANOVA test followed by a Tukey HSD test. The association between PTSD symptoms and somatic symptoms was examined using a t-test, linear regression, and ANOVA. The relative risk for severe PTSD symptomology was calculated using individual somatic symptoms as the exposure. Data analysis was completed using R statistical software (R Core Team, 2021). The parent study was approved by the Human Subjects Division at the University of Washington. This analysis used a de-identified data set from the parent study.

Commented [IO16]: Suggest adding examples of most commonly reported events.

Commented [LS17]: using what method(s)? the specific stat tests are typically spelled out in your methods section, and then in results you can share the numbers and whether the associations btw x and y were/were not stat sig

it also looks like in the results you looked at whether there were any demographic characteristics were associated with PTSD symptoms so suggest describing this here and saying in earlier that you collected demographic data as well

Results

In the study sample (N=223), 84% of participants endorsed having at least one of the traumatic experiences on the Life Events Checklist, and the average number of different traumatic experiences endorsed was 4. The most commonly reported experiences were medical procedures that caused fear or stress (46%), the sudden, unexpected death of someone close (45%), and serious accident or injury (40%). A large percentage (42%) of the sample reported high levels of PTSD symptom severity, while 58% had low levels of symptom severity.

Demographic characteristics of the sample and mean levels of PTSD symptoms across categories are reported in **Table 1**. A two-sample t-test revealed that those who were not living with a partner had significantly higher average PTSD symptom scores than those who were living with a partner (difference = 1.9, $p = 0.02$). There were no other significant differences in PTSD symptoms scores across demographic characteristics.

Table 2 displays PTSD symptom scores across levels of depression, anxiety, and somatic symptom severity. In all cases, average PTSD symptom severity increased as the severity of the corresponding symptoms increased. The average PTSD symptom severity score increased by about three points from minimal to mild, by two points from mild to moderate, and by 4 points from moderate to moderately-severe levels of depression symptomology. Average PTSD symptom severity score increased by 3 points from minimal to mild, by 5 points from mild to moderate, and by 1 point from moderate to severe levels of anxiety symptomology. Average PTSD symptom severity score increased by 3 points from

minimal to mild, by 1 point from mild to moderate, and by 4 points from moderate to severe levels of somatic symptomology. Every one-point increase in PTSD symptom severity is equivalent to going from “not at all bothered” by a symptom in the past month to “bothered a little bit.” Those with minimal and moderately-severe levels of depression symptoms showed significantly different average PTSD severity than all other levels of depression. Those with minimal and mild levels of anxiety symptoms significantly differed from all other levels of anxiety. None of the levels of somatic symptom severity were significantly different than all other levels.

Among participants who had complete data for PTSD symptoms and somatic symptoms (N = 104), 57% scored low on the PTSD symptoms questionnaire while 43% endorsed high PTSD symptoms. Those with high PTSD symptom severity had significantly higher average somatic symptom scores (8 points versus 11 points on the somatic symptoms severity scale) (**Figure 1**). There was a weak positive association between PTSD symptoms and somatic symptoms. For every three-point severity difference in PTSD symptoms (equivalent to moving one symptom from “not at all” bothered by the symptom in the past month to bothered “quite a bit”) there was a one-point difference in somatic symptom severity (equivalent to moving from “not bothered at all” by the symptom in the past 4 weeks to “bothered a little”) (**Figure 2**).

We calculated the relative risk for severe PTSD symptomology using endorsement of individual somatic symptoms as the exposure status (see **Table 3**). Those who reported back pain, chest pain, feeling tired or having low energy, and having trouble sleeping were significantly more likely to endorse severe PTSD symptoms. The relative risk for severe

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PTSD symptomology was 5.24 (CI = 1.40 - 19.67) times greater for those who endorsed feeling tired or having low energy, 3.31 (CI = 1.13 - 9.75) times greater for those who endorsed back pain, 3.01 (CI = 1.49 - 6.06) times greater for those who endorsed having trouble sleeping, and 2.59 (1.93 - 3.48) times greater for those who endorsed any level of chest pain.

Discussion

The incidence of severe PTSD scores in this sample was similar to the incidence found in some studies of Latina immigrants and immigrants from all countries of origin (Kaltman et al., 2010; Kimmell et al., 2021). Increased PTSD symptoms were positively associated with symptoms of depression and anxiety, but this analysis failed to find a robust, dose-dependent relationship between the occurrence of somatic symptoms and PTSD. Analysis of somatic symptoms among those with severe PTSD revealed a set of symptoms that may have contributed to the complexity and overall severity of participants' mental health symptoms. These findings suggest the need for additional research that would further elucidate the relationships between different clusters of mental health symptoms among Latina immigrants.

The severity of PTSD symptoms was relatively evenly distributed across most demographic variables in this study, except for those living without a partner having higher levels of PTSD (**Table 1**). This is consistent with previous research indicating that social support may moderate the severity of PTSD symptoms (Kaltman et al., 2010). Other studies of PTSD symptoms in similar populations have shown mixed results about which

Commented [IO18]: Suggest the following outline for your discussion - each represents a paragraph:

- 1) Summarize main findings
- 2) Interpret findings from Table 1 - compare to existing literature
- 3) Interpret findings from Table 2 - compare to existing literature
- 4) Interpret findings from Table 3 and Figures 1 and 2 -compare to existing literature
- 5) Limitations
- 6) Conclusions/Implications for future research and practice

Ideally paragraphs 2 - 4 should tie back to your introduction some

demographic variables are associated with higher average PTSD symptom severity. (Eghaneyan et al., 2022; Kaltman et al. 2010; Kimmell et al., 2021; Pérez Benítez et al., 2021). Kaltman et al. (2010) find that marriage status and time spent living in the US was associated with higher PTSD symptom incidence among a sample of Latina immigrants with depression. Pérez Benítez et al. (2014) find that those who are unemployed are more likely to endorse PTSD symptoms among a mostly non-immigrant Latino sample.

PTSD symptoms in this study were associated with symptoms of depression and anxiety. This relationship is fairly well established in literature about the cooccurrence of these conditions (Brady et al., 2000; Eghaneyan, 2023; Kaltman et al., 2010; Pérez Benítez et al., 2014). This finding supports the idea that the immigration experience is associated with a variety of mental health symptoms which merit recognition and preventative treatment. Despite finding evidence of clear relationships between PTSD symptoms and depression or anxiety symptoms, the relationship between PTSD and somatic symptoms was less clear.

Participants with severe PTSD symptoms had significantly higher somatic symptom severity on average (**Figure 1**), but the correlation coefficient of the linear relationship between the two types of symptoms was weak and it did not support the existence of a dose-response relationship (**Figure 2**). Participants with certain somatic symptoms like back pain or trouble sleeping had a higher relative risk for endorsing severe PTSD symptoms (**Table 3**). These findings add to existing evidence of an association between certain somatic symptoms and PTSD symptoms (Benítez et al., 2013; Sharp & Harvey, 2001). Overall, absolute incidence of somatic symptoms was similar to rates reported by

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Benítez et al. (2013) in a small sample of mostly women Latino immigrants with PTSD who were mostly from Central America. Back pain, in particular, has a long history of association with PTSD (Keller & Chappell, 1996; Pinheiro et al., 2016; Suri et al., 2019). However, the observation that people exhibiting these somatic symptoms demonstrate more severe PTSD symptoms is somewhat ambiguous. The causal direction of the relationship cannot be inferred from the evidence available, and the potential for confounding cannot be ruled out. For example, it could be the case that a degenerative back injury, which did not cause psychological distress, leads to decreased quality of sleep and increased symptoms like irritability or confusion. It cannot be assumed that the presence of these symptoms indicates PTSD symptoms.

Limitations

This study examines the presentation of PTSD symptoms in a relatively homogenous sample of Latina immigrants. Most participants were from Mexico, had lower income, and lower levels of education. As a result, these findings may not be generalizable to Latina immigrant women from all countries of origin or socioeconomic status. Additionally, sample size may have limited the ability of this analysis to find significant results, at least for the investigation of the relationship between somatic symptom severity and PTSD symptom severity.

This study used a culturally validated and abbreviated version of a common PTSD symptom measure. The full-length version of this and other PTSD measures assess for a wider variety of potential PTSD symptoms and may offer greater sensitivity in situations

Commented [LS21]: nice start on the Discussion! other things to add - implications for research and practice, and strengths and limitations

Commented [IO22]: Generalizability, causality/temporality, what variables didn't we have?

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where it is practical to use them. The results reported here are only directly comparable with other studies that use the same measures as this study. Additionally, there are other measures or metrics that may have been helpful to include in this analysis. This study did not examine the impact of insurance status, access to mental health care, or frequency of traumatic events on the outcome of interest. These could be major factors in ongoing symptom severity that should be addressed in future analyses.

This analysis found several significant associations between cooccurring groups of mental health symptoms but could not establish the direction of causality for any of these relationships due to the data having been collected at the same time point. It could be the case that the cooccurring mental health conditions observed are an intermediary to the relationship between traumatic events and PTSD symptoms or secondary to it.

Conclusion

Trauma exposure and PTSD symptoms were relatively common experiences for this sample of Latina immigrants. PTSD symptoms can contribute to significant impairment to quality of life and require increased healthcare utilization in the long term (Karthan et al., 2008; Tuerk et al., 2013). For these reasons, ensuring access to mental health care for Latina immigrants who are likely to be exposed to traumatic events should be considered a priority. Additionally, it may be helpful to study the impact of repeated trauma and different types of trauma as these conditions can result in complex PTSD which has unique treatment implications (Courtois et al., 2024). Additional studies of this population with a

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larger sample of participants could elucidate insights about the factors that moderate PTSD symptom severity.

PTSD symptoms are likely to coincide with symptoms of depression and anxiety among Latina immigrants. Somatic symptoms like back pain are also connected to PTSD symptoms in some cases, but this study did not find evidence of a set of somatic symptoms that is uniquely indicative of PTSD symptomology. Future research can further investigate the association of individual symptoms of PTSD, somatic symptoms, anxiety, and depression (Jiang et al., 2020; Kratzer et al., 2022). Mental health care providers should be aware that somatic symptoms may be negatively impacting the mental health of their Latina immigrant patients with PTSD. Depending on the preferences and needs of the patient, supporting them in addressing symptoms like back pain or trouble sleeping could be an essential part of making progress toward alleviating PTSD symptoms like irritability.

Commented [LS25]: add culturally bound idioms of distress (per Intro paragraph describing importance of these)

Commented [CK26R25]: I removed the part about culturally bound idioms of distress because I didn't try to assess whether they were consistent with the results.

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Table 1: Mean PTSD symptom scores for different demographic segmentations of the ALMA sample population. (N = 223)

	N (%)	Mean PTSD Score	SD
Age			
Under 40	115	12.9	5.2
Over 40	108	13.3	5.4
Years in the US			
< 10	48	12.6	5.6
10-20	116	13.0	5.3
> 20	59	13.7	5.1
Country of Birth			
Mexico	183	13.3	5.4
Other	40	12.3	4.6
Immigrant Status			
Naturalized (1)	14	12	3.6
Current Visa / Permission (2, 3, 6, 7)	48	13.9	5.9
Entry and/or stay without permission (4, 5)	131	12.9	5.2
Preferred not to or did not answer (8)	22	12.6	5.9
Language			
Only Spanish	131	12.6	5.5
More Spanish than English	57	13.7	5.2
Same or mostly English	35	13.7	4.6
Education			
Less than high school degree (1,2,3)	75	13.6	5.4
High School Degree or Equivalent (4)	94	12.5	4.9

Commented [IO28]: How do we know which relationships were significant - can you mark is some way.

Commented [IO29]: For all tables the content is too close to the left cell margin. Makes it hard to read.

Commented [LS30]: do we have any info about which other countries of origin are represented?

Commented [IO31R30]: You can note this in the results text - other ALMA studies have done this.

	N (%)	Mean PTSD Score	SD
Employment			
Working	100	13.2	4.9
Not working	121	13.0	5.6
Partner living in home *			
Currently living with partner	141	12.4	4.7
Not living with partner	78	14.3	6.2
Total	223	13.1	5.3

* Indicates statistically significant difference between categories at $p < 0.05$

i) Other countries include El Salvador (n = 6), Columbia (n = 3), the United States (n = 2), Argentina (n = 1), Ecuador (n = 1), Guatemala (n = 1), Peru (n = 1), and Venezuela (n = 1).

Table 2: Mean PTSD symptom score and proportion of participants reporting High PTSD symptoms by severity of other mental and physical health conditions

	N	Mean PTSD Score	SD	Percent High PTSD
PHQ-9				
Minimal (0-4) *	87	10.1	3.5	18.4
Mild (5-9)	80	13.5	4.8	50.0
Moderate (10-14)	34	15.2	5.0	52.9
Moderately-Severe (15-27) *	22	19.6	5.4	86.4
GAD-7				
Minimal (0-4) *	75	9.5	3.0	13.3
Mild (5-9) *	82	12.6	4.4	39.0
Moderate (10-14)	48	16.4	5.3	64.6
Severe (15-21)	18	19.0	5.6	77.8
PHQ-15				
Minimal (0-4)	15	9.5	3.3	13.3
Mild (5-9)	41	12.9	4.8	36.6
Moderate (10-14)	36	14.1	5.0	52.8
Severe (15-30)	12	18.2	6.3	75.0
Total	223	13.1	5.3	41.7

* Indicates statistically significant difference with all other categories at $p < 0.05$

Commented [IO32]: You don't discuss comorbidity of PTSD and other mental health conditions at all - I think you could add more there.

Commented [CK33R32]: More information in the introduction?

Table 3: Relative risk of severe PTSD where the exposure is endorsing the somatic symptom

Item	Description	Relative Risk	95% Confidence Interval
1	Stomach pain	1.75	1.04 - 2.95
2	Back pain*	3.31	1.13 - 9.75
3	Pain in your arms legs or joints	1.72	0.81 - 3.65
4	Menstrual cramps	1.28	0.73 - 2.25
5	Headaches	1.23	0.62 - 2.41
6	Chest pain*	2.59	1.93 - 3.48
7	Dizziness	1.52	0.65 - 3.53
8	Fainting spells [†]	N/A	N/A
9	Feeling your heart pound or race	1.86	1.11 - 3.12
10	Shortness of breath	2.60	1.96 - 3.44
11	Pain or problems during sexual intercourse	1.35	0.33 - 5.53
12	Constipation, loose bowels, or diarrhea	1.28	0.67 - 2.44
13	Nausea, gas, or indigestion	2.06	1.12 - 3.77
14	Feeling tired or having low energy*	5.24	1.40 - 19.67
15	Trouble sleeping*	3.01	1.49 - 6.06

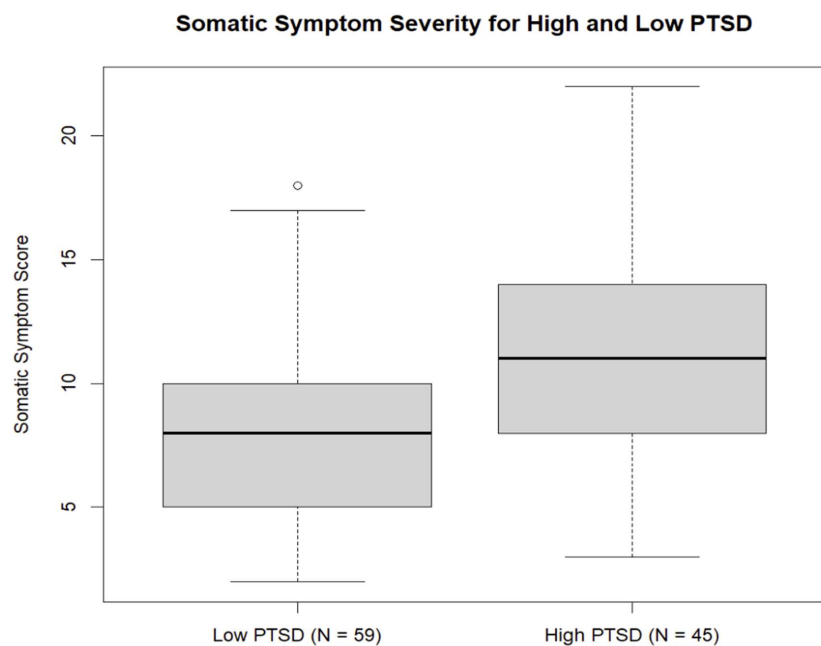
* Indicates statistically significant difference between categories at $p < 0.05$

i) none of the people who endorsed this symptom had high PTSD symptom severity

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Figure 1: Difference in somatic symptom score by PTSD symptom severity group

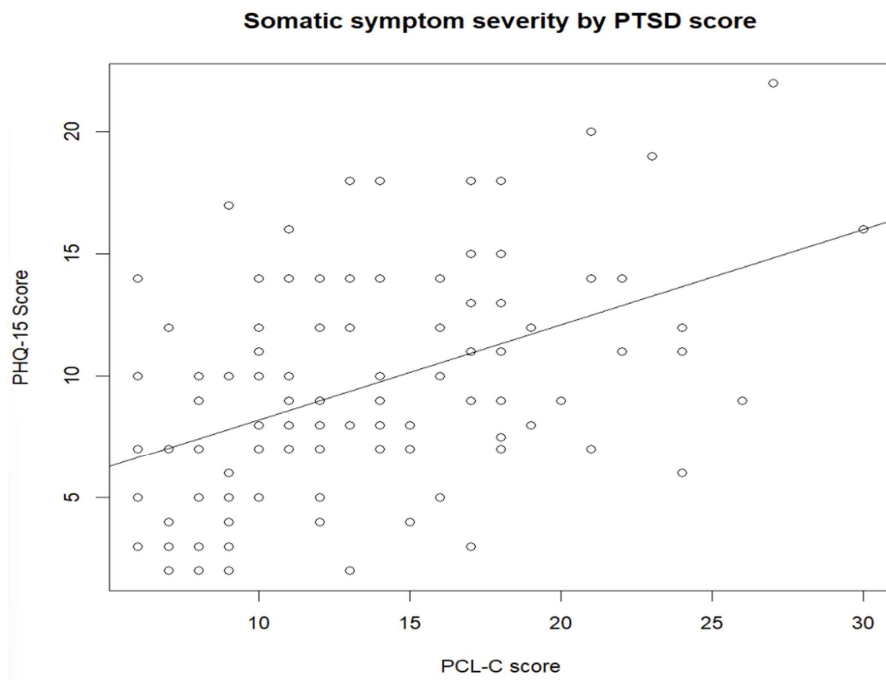


Boxplots showing the range of somatic symptom severity scores for participants with low vs. high PTSD symptom severity.

$$\bar{x}_{low} = 8, \bar{x}_{high} = 11$$

$$95\%CI_{(\bar{x}_1 - \bar{x}_2)} = (-5.0, -1.7), p_{(\bar{x}_1 - \bar{x}_2)} < 0.05$$

Figure 2: Linear model for the relationship between PTSD and somatic symptom severity score



A scatter chart plotting participants by PTSD symptom severity across the horizontal axis and somatic symptom severity across the vertical access. The equation for the linear regression model is $y = 0.39x + 4.3$, $R^2 = 0.21$.

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