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The Mediating Role of Gun Attitudes in the Association Between DSM-5 Posttraumatic Stress Disorder Symptom Clusters, and Gun Ownership in Young Hispanic Adults with Exposure to Interpersonal Trauma

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THE MEDIATING ROLE OF GUN ATTITUDES IN THE ASSOCIATION BETWEEN
DSM-5 POSTTRAUMATIC STRESS DISORDER SYMPTOM CLUSTERS,
AND GUN OWNERSHIP IN YOUNG HISPANIC ADULTS
WITH EXPOSURE TO INTERPERSONAL
TRAUMA

A Thesis

by

VANESSA GONZALEZ

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Requirements for the Degree of
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December 2022

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December 2022

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ABSTRACT

Gonzalez, Vanessa The Mediating Role of Gun Attitudes In The Association Between DSM-5 Posttraumatic Stress Disorder Symptom Clusters, and Protective Gun Ownership In Young Hispanic Adults With Exposure to Interpersonal Trauma. Master of Arts (MA), December, 2022, 56 pp., 9 tables, 12 figures, references, 32 titles.

Despite growing interest in gun attitudes and gun ownership among United States citizens, the current body of literature is limited and tends to focus on white non-Hispanic individuals. The present study examined the effect of interpersonal trauma-related PTSD symptoms on gun attitudes and protective gun ownership. The associations between experiencing PTSD symptoms, gun attitudes, and protective gun ownership were examined in a sample of 176 young Hispanic adults ($n = 127$ women, $n = 49$ men) with exposure to interpersonal trauma. Specifically, the mediating role of positive attitudes towards guns in the associations between the four clusters of DSM-5 PTSD symptoms and protective gun ownership were examined in five simple mediations conducted among women. Results revealed that the indirect of PTSS related to interpersonal trauma and gun attitudes did not lead to an increased likelihood of protective gun ownership among Hispanic women. Further research should examine the differences in gun ownership by gun type, as well as examine how gender identity and culture may affect emotional and cognitive reactions to trauma among Hispanics. Future studies should assess participant suicidality as trauma exposure, PTSD symptoms, and gun ownership all individually increase the risk of death by suicide, and together could substantially increase present risk.

DEDICATION

The completion of my studies would not have been possible without the love and support of my family, friends, and Dr. Ruby Charak. My mother, Maricela Gonzalez, encouraged me to continue to pursue higher education and provided unconditional support throughout my journey. Without her support, encouragement, and unwavering belief in me this would not have been possible. My sisters, San Juana Gonzalez, Marisol Gonzalez, and Gabriela Gonzalez, all provided me the necessary encouragement to continue to put forth my best effort and accomplish my goal of completing my degree. My niece, Marissa Marylou Cardenas, inspired me every day to work harder and never give up. My dear friends supported me and encouraged me by reminding me how far I have come. The chair of my thesis committee, Dr. Ruby Charak, guided, supported, and encouraged me. Without the love, support, and guidance of every person listed I would not have been able to earn this degree. Thank you so much.

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CHAPTER I

INTRODUCTION

Researchers have argued that people have a fundamental need for safety that is important for an individual's psychological well-being (Shepperd et al., 2018). This need for safety is one factor known to affect an individual's attitude towards guns. The way an individual perceives how a gun may impact their safety affects their attitudes towards both guns, and gun ownership. These gun attitudes in turn influence the likelihood of an individual purchasing and owning a gun. Pierre (2019) states that fear of victimization is a powerful motivator of gun ownership. Shepperd et al. (2018) state that perceiving guns as a *means to safety* leads to more positive/favorable attitudes towards guns while perceiving guns as a threat to safety leads to less favorable attitudes towards guns. Regardless of any actual risk, if an individual perceives that they are vulnerable and fear victimization they are likely to have a stronger motivation for gun ownership (Bryan et al., 2020).

Studies indicate that owning a gun for protection is the predominant justification individuals provide for their gun ownership (Mencken & Froese, 2019; Siegel & Boine, 2020; Stroebe et al., 2017; Warner et al., 2021). However, owning a single gun may not be enough to mitigate the fear present, and often leads to an individual purchasing multiple guns after their initial gun purchase to establish a sense of safety (Pierre, 2019). Despite the primary purpose given for an individual's gun ownership, gun ownership itself does not explain differences in gun attitudes (Shepperd et al., 2018). Mencken and Froese (2019) examined reasons for gun

ownership, namely, protection, recreation, and collection. Although there are many reasons for gun ownership, variations may be present in the reasons given for gun ownership depending on the type of weapon owned (Mencken & Froese, 2019). One such example involves handguns/revolvers which studies have found are the most prominent choice for gun owners when they purchase a gun for the purpose of using it for protection (Mencken & Froese, 2019; Stroebe et al., 2017).

Due to the intrinsic need for safety acting as a powerful source of motivation for gun ownership the examination of prior *victimization/trauma* is important as it may influence gun attitudes among men and women. A recent study has found that prior victimization influences gun attitudes in females but does not influence gun attitudes in males (Wallace, 2020). Exposure to interpersonal violence may not only influence gun attitudes but also lead to an increased risk for PTSD symptoms (Gillikin et al., 2016; Jaffe et al., 2019). However, despite the tendency for mental illness and guns tend to be examined together in the media, few studies have examined possible links between gun attitudes among individuals who exhibit posttraumatic stress symptoms (PTSS) (Wamser-Nanney et al., 2019a; Wamser-Nanney et al., 2019b). Mixed findings among two studies (Wamser-Nanney et al., 2019a; Wamser-Nanney et al., 2019b) have highlighted a need to further research examining the associations between PTSS, gun attitudes, and gun ownership in individuals with exposure to interpersonal violence. Understanding these associations will shed further light on how posttraumatic stress symptoms, and gun attitudes, influence gun ownership in individuals who have experienced some form of interpersonal violence in the past.

CHAPTER II

REVIEW OF LITERATURE

Factors that Affect Gun Attitudes

Studies examining attitudes towards guns and gun ownership have increased in recent years (Beardslee et al., 2018; Buttrick, 2020; Kim, 2018). This increase has led to deeper explorations into the psychology behind both gun attitudes and gun ownership (Buttrick, 2020; Dowd-Arrow et al., 2019; Pierre, 2019; Shepperd et al., 2018; Wamser-Nanney et al., 2019a; Wamser-Nanney et al., 2019b). Understanding the need for *safety* is important when trying to understand people's attitudes towards guns (Shepperd et al., 2018). The intrinsic need for safety will play a significant role in how guns are perceived and will therefore influence an individual's attitude towards guns.

Other factors such as socialization (Kelley & Ellison, 2021; Wombacher & Wallace, 2019), the presence of guns in childhood homes, religion (Mencken & Froese, 2019; Merino, 2018), political ideations (Mencken & Froese, 2019; Wombacher & Wallace, 2019), gun culture (Mencken & Froese, 2019), socioeconomic status (Mencken & Froese, 2019), a sense of empowerment (Mencken & Froese, 2019; Yamane, 2017), and prior victimization (Wallace, 2020; Wamser-Nanney et al., 2019a; Wamser-Nanney et al., 2019b) have been shown to affect the development and maintenance of favorable gun attitudes. Findings by Bandura (1997) state that socialization occurs by observing the behaviors and attitudes modeled by parents and other individuals. The socialization of gun attitudes can occur through exposure to guns in a manner

that can be framed in a positive light such as in hunting and/or shooting sports (Wombacher & Wallace, 2019). If individuals are exposed to guns in the home as children alongside parents who model a positive attitude towards guns and gun ownership, then children [individuals] may begin to develop a positive attitude towards guns during their childhood (Wombacher & Wallace, 2019).

Religion has also been found an important source of influence on an individual's attitude towards guns (Merino, 2018), this is especially so among non-Hispanic white protestant men (Mencken & Froese, 2019). Merino (2018) found that non-Hispanic white protestant men were more likely to own guns, compared to the general population, as well as have easy access to weapons at home. The socialization that occurs resulting from the beliefs of parents at home partnered with religious teachings on individual autonomy and self-efficacy (Merino, 2018), indicates that gun attitudes can begin to develop at a young age and continue to strengthen into early adulthood. Just as the religious beliefs present at home can influence gun attitudes, political ideations have also been linked to attitudes towards guns and gun ownership (Mencken & Froese, 2019). Republican conservatism has been linked to positive attitudes towards guns and gun ownership alongside negative attitudes towards gun control (Buttrick, 2020; Mencken & Froese, 2019; Siegel & Boine, 2020; Wombacher & Wallace, 2019). Studies have found Republican conservatives report possessing positive attitudes towards guns as they view guns as a means of protection against future victimization (Mencken & Froese, 2019; Stroebe et al., 2017).

The influence gun culture has on gun attitudes has been examined in various studies in the United States (Buttrick, 2020; Dowd-Arrow et al., 2019; Mencken & Froese, 2019; Yamane, 2017). Studies have predominantly focused on gun cultures present in the southern states of the

United States, where positive gun attitudes are associated with self-defense, protection, and conservative political ideology. Yamane (2017) found that the newest rise of gun culture in recent years has centered on self-defense or armed citizenship (i.e., people in the United States who are exercising their rights as citizens to carry firearms in public for self-defense). Both Mencken and Froese (2019) and Yamane (2017) have found that economic precarity and a sense of empowerment directly affected an individual's attitude towards both guns and gun ownership due to the influence of the gun culture they grew up in or were exposed to.

The examination of prior *victimization/trauma* is important as past research has shown it may influence gun attitudes among men and women. Recent research (Wallace, 2020) has shown that past exposure to interpersonal violence has influenced individual attitudes towards guns in women but not in men. This may be, in part, a result of the feelings of empowerment that individuals may have when considering the purchase of a firearm. One such example is that women can see guns as equalizers used to compensate for strength when they feel they must protect themselves against male assailants (Yamane, 2017). Therefore, when examining gun attitudes, it is important to consider that the motivation for gun ownership itself does not explain differences in gun attitudes (Shepperd et. al., 2018) as an individual's past experiences may play an important role depending on the context of exposure and their gender.

Motivation for Gun Ownership

Gun ownership can result from various influences such as fear (Pierre, 2019), the need for protection/safety (Bryan et al., 2020; Pierre, 2019; Shepperd et al., 2018), recreation and/or collection (Lacombe et al., 2019; Mencken & Froese, 2019), religious beliefs and involvement (Merino, 2018), and employment (Parker et al., 2020). Mencken and Froese (2019) report that gun empowerment is also a motivating factor for not only gun attitudes but also gun ownership.

The motivations behind gun ownership such as recreation, fear of victimization, protection/safety, and collection are important and informative. One such example is Mencken and Froese (2019) study wherein they find that men who perceived themselves to be in a more precarious economic situation were more likely to feel empowered by owning a gun. The rates of gun ownership differ among men and women when asked to indicate whether recreation, collection, or employment acts as their main motivation for purchasing a gun (Parker et. al., 2017).

Studies have found that a substantial percentage of gun owners, approximately 60%, report protection as their main motivation for gun ownership (Bryan et al., 2020; Stroebe et al., 2017), and both men and women were about equally likely to report owning a gun for protection (Parker et. al., 2017). An examination of the psychological perspective of protective gun ownership has shown that subjective factors, such as the perceived risk of victimization, are what motivates individuals to own guns (Stroebe et al., 2017). Regardless of any objective risk, if an individual perceives themselves to be at risk for victimization they will have a stronger motivation for gun ownership (Pierre, 2019). Recent research has shown that individuals considering the purchase of a firearm may be motivated by exaggerated threat perceptions (Anestis & Bryan, 2021; Bryan et al., 2020). Therefore, owning a single gun may not be enough to mitigate the fear present, and often leads to an individual purchasing multiple guns after their initial gun purchase to achieve a sense of safety (Pierre, 2019). Although gun ownership substantially increases the risk of harm and/or victimization (Anestis & Bryan, 2021; Bryan et al., 2020; Buttrick, 2020), studies have proposed protective gun ownership is used as a coping mechanism (Buttrick, 2020). Therefore, although prior victimization may influence gun attitudes

(Wallace, 2020), prior victimization is not necessary for protection to be reported as the main motivation for gun ownership.

Exposure to Interpersonal Violence

Exposure to interpersonal violence may lead to an increased risk for PTSD and posttraumatic stress symptoms (PTSS) (Gillikin et al., 2016; Jaffe et al., 2019). The lifetime prevalence of PTSD among Hispanics is comparable to that of non-Hispanic White individuals; however, despite Hispanic individuals having a higher risk of exposure to some forms of trauma (e.g., child maltreatment, witnessing domestic violence, war-related events, etc.) they are less likely to seek treatment than their non-Hispanic White counterparts (Roberts et al., 2011). Although mental illness and guns tend to be examined together in the popular media, not many studies have examined these possible links (Wamser-Nanney et al., 2019a; Wamser-Nanney et al., 2019b).

Existing research has found a positive association between guns present in a home and the violent victimization of women (Hemenway, 2011). A recent study by Wallace (2020) found that past interpersonal trauma was associated with gun exposure via a known person among females. Wallace (2020) also found that among the male participants past interpersonal trauma was only associated with gun exposure through unknown persons. Moreover, men are more likely to experience gun violence outside of their homes, which may explain the difference between known-person and unknown-person gun exposure among men and women. Exposure to violence has been found to predict both carrying a firearm and experiencing/engaging in firearm violence among male young adults (Beardslee et al., 2018).

PTSD Symptoms and Gun Attitudes

As stated by (Wamser-Nanney et al., 2019a) trauma exposure and PTSD symptoms have yet to be examined in the context of gun attitudes. Wamser-Nanney et al. (2019a) attempted to study gun attitudes in the context of exposure to trauma and experiencing posttraumatic stress symptoms (PTSS). Wamser-Nanney et al. (2019a), studied the four PTSD symptom clusters (i.e., reexperiencing/intrusion, avoidance, negative cognitions and mood, trauma-related changes in arousal and reactivity) per the DSM-5 (APA, 2013) and their possible association with gun attitudes. Wamser-Nanney et al. (2019a) found that experiencing posttraumatic stress symptoms above the clinical cutoff score of 33 did not indicate an individual was more likely to have positive/favorable gun attitudes. However, Wamser-Nanney et al. (2019a) did find that PTSS clusters varied in their influence and associations with gun attitudes. The reexperiencing/intrusion and avoidance symptom clusters were found to be linked to stronger positive gun attitudes, while neither negative cognitions and mood nor trauma-related changes in arousal and reactivity showed any relation to gun attitudes (Wamser-Nanney et al., 2019a).

Wamser-Nanney et al. (2019b) then went on to further study the associations between exposure to trauma, PTSS, and gun attitudes by examining both cumulative trauma and specific forms of trauma (e.g., physical assault, assault with a weapon, sexual assault, etc.). Assessing these different forms of exposure to interpersonal violence is important as seen in the results reported in previous research (Wamser-Nanney et al., 2019b). The findings indicate that prior exposure to trauma was once again associated with positive gun attitudes (Wamser-Nanney et al., 2019b); however, unlike their previous study, the analyses run in their subsequent study did not show a significant association between PTSS and gun attitudes. The reported findings have shown that assault with a weapon was associated with greater positive/more favorable attitudes

towards owning a gun, and the belief that guns provide a form of protection (Wamser-Nanney et. al., 2019b). On the other hand, Wamser-Nanney et. al. (2019b) also found that physical assault was associated with less positive gun attitudes and the belief that guns do not provide an individual with protection. These different forms of interpersonal violence/trauma (i.e., assault with a weapon and physical assault) were each analyzed individually, and none showed a significant association between gun attitudes concerning views on gun crime and gun rights.

Statement of Purpose

The present study aimed to expand the literature by examining the associations between PTSD symptom clusters, gun attitudes, and protective gun ownership among Hispanic/Latino young adults with exposure to interpersonal violence. First, the association between PTSS symptom clusters and protective gun ownership as mediated by gun attitudes will be examined in a sample exclusively composed of Hispanic young adult gun owners with at least one instance of exposure to interpersonal violence. The present study aimed to examine some of the same forms of trauma (i.e., physical assault, assault with a weapon, and sexual assault) assessed by Wamser-Nanney et al., (2019b) when assessing participant exposure to interpersonal violence. This will build on the existing literature on PTSS and gun attitudes (Wamser-Nanney et al., 2019a; Wamser-Nanney et al., 2019b) while also expanding it by examining protective gun ownership.

Second, given the increased interest in mental health and gun ownership in the United States (Beardslee et al., 2018; Buttrick, 2020; Kim, 2018), the current study aimed to examine protective gun ownership among individuals exposed to interpersonal violence who indicate experiencing post-traumatic stress symptoms. Individuals experiencing PTSS may have an increased risk of suicide (Bryan, 2016), and as owning a gun increases the risk of gun-related homicide or suicide occurring in the home (Anestis & Houtsma, 2018; Pierre, 2019) examining

protective gun ownership among this vulnerable population is important. This will help explore the public interest regarding gun ownership among individuals with mental health concerns.

Third, the study aimed to examine associations in an exclusively Hispanic/Latinx participant pool. The Hispanic population is of particular interest given the existence of the Hispanic paradox and its effect on Latinx individuals of Mexican origin. The Hispanic Paradox refers to the psychological phenomenon in which immigrants report lower physical and mental health concerns than native born Americans in spite of the stressors they face (Hernandez et al., 2022). Recent research has shown that while a clear association has been found among Latinxs of Mexican origin, the Hispanic paradox effect declines over time and mental health outcomes begin to become similar to the general United States population (Hernandez et al., 2022). As the prevalence of mental health disorders among Hispanics begins to trend similar to that of non-Hispanic White in the United States, the utilization of mental health services among Hispanic/Latinx individuals remains low as they are less likely to seek help for the mental health issues they may be experiencing (Guntzviller et al., 2020; Hernandez et al., 2022). The low rate at which Hispanic/Latinx individuals seek mental health services gives rise to concern given that if a Hispanic/Latinx individual is exposed to trauma, has PTSD symptoms, and potentially owns a gun their risk for suicide will increase (Anestis & Houtsma, 2018; Roberts et al., 2011) especially if there is no intervention. The rising need for further research is demonstrated as approximately 20% of reported gun owners in the United States are Hispanic (Parker et. al., 2017) partnered with the low rates at which Hispanics are seeking mental health services, warrants for further insight on gun attitudes and gun ownership among this population.

The Hispanic/Latino population is understudied as few studies on gun attitudes and gun ownership have focused on Hispanic individuals (Dowd-Arrow et al., 2019; Wamser-Nanney et

al., 2019a; Wamser-Nanney et al., 2019b). This study will further the generalizability of current literature to culturally diverse populations that are not non-Hispanic White males. The associations between presence of PTSS, gun attitudes, and gun ownership will be studied by separating the total sample into two separate groups by binary gender identity (i.e., men and women) to further increase generalizability. The two research questions that are addressed include:

Research Question 1

Do gun attitudes mediate the association between PTSS symptom clusters and gun ownership among Hispanic young adults with exposure to interpersonal violence?

Hypothesis 1: Gun attitudes play a mediating role in the association between PTSD symptom clusters B and C (i.e., intrusion and avoidance) and protective gun ownership leading to an increase in the likelihood of protective gun ownership; However, gun attitudes do not play a mediating role in the association between PTSD symptom clusters D and E (i.e., negative cognition and mood, and arousal and reactivity) and protective gun ownership, and will not increase the likelihood of protective gun ownership in Hispanic young adults who have experienced interpersonal violence.

Research Question 2

Does gender influence the indirect effect of PTSD symptoms on protective gun ownership through gun attitudes?

Hypothesis 2: The gender identity endorsed (e.g., identifying as either a man or a woman) will moderate the association between total PTSS symptoms and gun attitudes, as gun attitudes mediate the association between PTSS symptoms and protective gun ownership in Hispanic

young adults who have experienced interpersonal violence. Women will hold more positive/favorable gun attitudes when endorsing PTSD symptoms related to interpersonal trauma and have an increased the likelihood of reporting protective gun ownership.

CHAPTER III

METHODOLOGY

Participants

Undergraduate psychology students ($N = 1,880$) were recruited as a part of a larger “*Gun Culture and Mental Health During COVID-19*” study at The University of Texas Rio Grande Valley, a predominantly Hispanic serving institution located in South Texas. Participants were recruited through the SONA system at the Department of Psychological Science by offering course credit points upon survey completion. The final sample was filtered such that only participants who indicated they own a firearm for protection by selecting “Yes” on at least one of three items assessing the purpose of their gun (i.e., recreation, protection, collection) by gun type, and endorsed experiencing at least one of the eight different forms of interpersonal violence examined remained ($N = 176$). All participants identified as Hispanic or Latino/a/x. The age of participants ranged from 18-29 years ($M = 20.6$; $SD = 2.9$). Of these participants 71% ($n = 125$) were female; 27.3% ($n = 48$) were male.

Gender identity was assessed in the current study with 72.2% ($n = 127$) of participants identifying as women, and 27.8% ($n = 49$) of participants identifying as men. When assessing sexual orientation, participants predominantly reported identifying as heterosexual 74.4% ($n = 131$), 2.3% ($n = 4$) of participants reported identifying as gay, 0.6% ($n = 1$) of participants reported identifying as lesbian, 13.1% ($n = 23$) of participants reported identifying as bisexual, 0.6% ($n = 1$) of participants reported identifying as asexual, 3.4% ($n = 6$) of participants reported

identifying as pansexual, and 4.0% ($n = 7$) of participants specifying a sexual orientation not listed. Assessment of yearly household income indicated approximately 9.7% ($n = 17$) of participants reported a yearly household income of less than \$10,000, 11.9% ($n = 21$) of participants reported a yearly household income between \$10,000 and \$19,999, 6.8% ($n = 12$) of participants reported a yearly household income between \$20,000 and \$29,999, 10.2% ($n = 18$) of participants reported a yearly household income between \$30,000 and \$39,999, approximately 34.7% ($n = 61$) of participants reported a yearly household income between \$40,000 and \$79,999, and approximately 12.5% ($n = 22$) of participants reported a yearly household income between \$80,000 and \$99,999, and approximately 7.4% ($n = 13$) of participants reported a yearly household income between \$100,000 and more than \$150,000.

Approximately 58% of participants ($n = 102$) of participants reported being single; 7.4% ($n = 13$) of participants reported being married; 10.8% ($n = 19$) reported cohabitating with a significant other, and 23.9% ($n = 42$) reported dating but living separately. Of the total participants, approximately 93.8% ($n = 165$) of participants reported they were a U.S. citizen by birth, 4% ($n = 7$) of participants reported being a U.S. citizen by naturalization, and 2.3% ($n = 4$) of participants reported they were not U.S. citizens. Participants' political standing was also assessed and showed that approximately 4% ($n = 7$) of participants identified as extremely conservative, 13.1% ($n = 23$) of participants identified as conservative, 11.4% ($n = 20$) of participants identified as leaning conservative, 38.6% ($n = 68$) of participants identified as moderate, 12.5% ($n = 22$) of participants identified as leaning liberal, 13.6% ($n = 24$) of participants identified as liberal, and 4.5% ($n = 8$) of participants identified as extremely liberal.

When assessing the type of interpersonal violence experienced by participants, approximately 1.7% ($n = 3$) of participants indicated physical force was used against them in a

mugging, 24.4% ($n = 43$) of participants indicated physical force was used against them at some point to force them to have intercourse, 28.4% ($n = 50$) of participants indicated they at some point experienced physical force used against them in an attempt to force them to have intercourse, 60.8% ($n = 107$) of participants indicated experiencing someone touching an intimate/private area against their wishes, 20.5% ($n = 36$) of participants indicated experiencing being beaten or attacked by a parent/caregiver when they were a child, 36.4% ($n = 64$) of participants indicated experiencing being beaten/kicked/slapped by a sibling, family member, romantic partner or stranger, 20.5% ($n = 36$) of participants indicated they experienced being threatened by someone with a weapon such as a knife or a gun, 20.5% ($n = 36$) of participants indicated they experienced being present when another person was killed, seriously injured, sexually or physically assaulted.

When assessing the types of guns owned by participants, 68.2% ($n = 120$) of participants indicated they owned a handgun/revolver, approximately 20.5% ($n = 36$) of participants indicated they owned a long gun, and approximately 11.4% ($n = 20$) of participants indicated they owned an automatic/semi-automatic weapon. When examining the types of guns owned among women, 74% ($n = 94$) of women indicated they owned a handgun/revolver, approximately 16.5% ($n = 21$) of women indicated they owned a long gun, and approximately 9.4% ($n = 12$) of women indicated they owned an automatic/semi-automatic weapon. When examining the types of guns owned among men, 53.1% ($n = 26$) of men indicated they owned a handgun/revolver, approximately 30.6% ($n = 15$) of men indicated they owned a long gun, and approximately 16.3% ($n = 8$) of men indicated they owned an automatic/semi-automatic weapon.

Design and Procedures

Survey administration took place completely online. Students registered to participate in the study via the undergraduate student online research participant pool (SONA) at the University of Texas Rio Grande Valley's department of psychology. Participants received a survey link through which they could participate in the study. Once consent was obtained, participants were administered the demographic questions, the Stressful Life Events (SLESQ) questionnaire, the PCL-5, the Gun Attitudes Scale (GAS), and lastly gun ownership items. Upon completion of the online survey, the survey webpage was redirected to SONA, and credit was granted automatically by the built-in automatic credit granting system.

Measures

Demographic Survey

Demographic information was gathered as part of the larger "*Gun Culture and Mental Health During COVID-19*" survey by including questions on biological sex; gender identity; sexual orientation; age; annual household income; US citizenship; years lived in the US; and relationship status.

Interpersonal trauma

The Stressful Life Events Questionnaire (SLESQ) is a self-report measure composed of 13 items that must be answered on a Likert scale (Corcoran et. al., 2000). The SLESQ measures lifetime exposure to traumatic events. The SLESQ has demonstrated good test-retest reliability and has proven to be psychometrically sound (Green et. al., 2006). The current study used 8 items within the scale that measure exposure to interpersonal violence. The items include experiencing, 1) physical force used against the participant in robbery or mugging, 2) have been

physically forced to have intercourse, oral, or anal sex when they were helpless 3) had someone try to physically force them to have intercourse, oral, or anal sex when they were helpless 4) had someone touch private parts of their body or made them touch private body parts against their wishes, 5) had a parent or caregiver repeatedly beat or harm them as a child, 6) been physically beaten or harmed by a friend, family member, stranger, or significant other, 7) had someone threaten them with a weapon like a knife or gun, and 8) have been present when someone was killed, seriously injured, or sexually or physically assaulted. Due to only using 8 items from the 13 total available the total score range will be 8 to 16 in this study with lower scores indicating more experiences of interpersonal violence were endorsed. The items were used to filter only participants from the larger *Gun Culture and Mental Health During COVID-19* study into the current study's participant pool. Participants who endorsed exposure to at least one of the eight items were included in the study. In the present study, the internal consistency for the overall scale measuring exposure to stressful life events was $\alpha = .71$.

PTSD symptoms

The PCL-5 (Weathers et al., 2013) is a self-report measure of DSM-5 posttraumatic stress disorder symptoms and is composed of 20 items that must be answered on a five-point Likert scale ranging from 0 = *Not at all* to 4 = *Extremely*. Items correspond to one of the four PTSS symptom clusters (i.e., For the past month how much were you bothered by: *Avoiding memories, thoughts, or feelings related to the stressful experience?*). The scores range from 0 to 80 with higher scores indicating higher levels of PTSD symptoms. The PCL-5 has been proven to be a psychometrically sound measure of PTSD symptoms (Blevins et al., 2015). The measure has demonstrated good test-retest reliability as well as high internal consistency with a Cronbach's alpha of ($\alpha = .94$). The PCL-5 was used to measure the four PTSD symptom clusters (e.g.,

reexperiencing, avoidance, negative cognition and mood, and arousal and reactivity) individually as well as total PTSD symptoms present. In the present study, the internal consistency for the overall scale measuring posttraumatic stress symptoms present was $\alpha = .95$.

Gun attitudes

The Gun Attitude Scale (GAS; Tenhundfeld et al., 2017) is a self-report measure composed of nine items such as *"I would personally feel more powerful by carrying/keeping a handgun"* which must be answered on a four-point Likert scale ranging from 1 = *Strongly Agree* to 4 = *Strongly Disagree* with lower scores indicating stronger/more positive gun attitudes (Tenhundfeld et al., 2017). It is a stable measure of general gun attitudes that has accurately predicted gun ownership as well as measured an individual's belief about their ability to handle a gun (Tenhundfeld et al., 2017). The GAS has shown good test-retest reliability and strong internal consistency with a Cronbach alpha coefficient of ($\alpha = .95$). The GAS was used to analyze general gun attitudes present among participants. The present study has re-coded the scoring of the measure so that higher scores on the GAS indicated stronger/more positive gun attitudes. In the present study, the internal consistency for the overall scale measuring gun attitudes was $\alpha = .93$.

Gun ownership

Gun ownership was measured using items the researchers created modeled after gun ownership items used in the *Gun Culture in Action* study (Mencken & Froese, 2019). Items included in the study measured not only gun ownership but also the type of guns owned *"Do you happen to have in your home or garage any of the following? A) A handgun/revolver, B) A long gun, C) Automatic/Semiautomatic weapon..."* and what their primary purpose (i.e., protection,

recreation, or collection). The variable for protective gun ownership was created using the items asking participants to indicate whether they bought the gun type (i.e., handgun, long gun, automatic/semiautomatic weapon) for protection, with scores ranging from 3 to 6, higher scores indicating less protective gun ownership. In the present study, the internal consistency for the items indicating gun ownership types for each gun (i.e., handgun, long gun, automatic/semiautomatic weapon) was $\alpha = .77$. In the present study, the internal consistency of all gun ownership items including item one which asked to indicate what type of gun was owned was $\alpha = .61$.

Machismo

The Machismo measure is a self-report measure composed of twenty items written as statements that are designed to assess behavioral and cognitive aspects of machismo and must be answered on a seven-point Likert scale ranging from 1 = *Very Strongly Disagree* to 7 = *Very Strongly Agree*. (Arciniega et al., 2008). The items correspond to two subscales of machismo (i.e., traditional machismo and caballerismo) and a total score for machismo. The traditional machismo subscale measures hypermasculinity, power, and aggressive attitudes with an internal consistency of $\alpha = .85$; the caballerismo subscale measures emotional connectedness, honor, and nurturance with an internal consistency of $\alpha = .80$ (Arciniega et al., 2008). In the present study, the internal consistency for the overall scale measuring total machismo was $\alpha = .78$, the internal consistency for traditional machismo was $\alpha = .86$, and the internal consistency for caballerismo was $\alpha = .78$.

Religious Activity

Religious activity was measured using the two items presented in the *Gun Culture in Action* study (Mencken & Froese, 2019). Participants answered two questions, the first question assessing religiosity, “*How religious do you consider yourself to be?*” was answered by selecting one of the following options presented; 1) *Not religious*, 2) *Slightly religious*, 3) *Moderately Religious*, 4) *Very Religious*. The second question assessing worship attendance, “*How often do you attend your place of worship?*” was answered by selecting one of the following options presented; 1) *Never*, 2) *Once or twice a year*, 3) *Once a month*, 4) *2 – 3 times a month*, 5) *Several times a month*, 6) *About weekly*, 7) *Weekly*, and 8) *Several times a week*. Lower scores on these questions indicated less religiosity while higher scores indicated more religiosity.

Political Standing

Political standing was measured using the item presented in the *Gun Culture in Action* study (Mencken & Froese, 2019). Participants answered the question “*What would you describe your political standing to be?*” on a seven-point Likert scale with responses being; 1 = *Extremely Conservative*, 2 = *Conservative*, 3 = *Leaning Conservative*, 4 = *Moderate*, 5 = *Leaning Liberal*, 6 = *Liberal*, and 7 = *Extremely Liberal*. Lower scores indicated more conservative views while higher scores indicated more liberal views on politics.

CHAPTER IV

RESULTS

A total of nine tables presenting the descriptive statistics and correlation matrices are presented in the APPENDIX. The frequencies of various demographic and study variables were assessed and presented in Table 1. The frequency of the type of interpersonal violence experienced were presented in Tables 2 through 4. Table 2 presented the frequency of the type of interpersonal violence experienced in the total sample, and Table 3 and Table 4 present the frequency of the type of interpersonal violence experienced in women and men respectively. The frequency with which participants reported owning different types of guns were presented in Figures 1 through 3. Figure 1 presented the frequency of ownership by gun type in the total sample whereas Figures 2 and 3 presented the frequency of ownership by gun type reported by women and men respectively. Figures 4 and 5 demonstrate the frequency at which participants reported owning different guns for either protection, recreation, or collection. Figure 4 demonstrates the frequency at which the total participant sample reported owning different gun types for protection, recreation, and collection. Figure 5 demonstrates the frequency at which the participants identifying as men reported owning different gun types for protection, recreation, and collection.

Table 5 demonstrates the mean and standard deviations for all continuous study variables. A correlation matrix depicting the bivariate associations between study variables (i.e., PTSD total symptoms, each PTSS symptom cluster, gun attitudes, gun ownership, and protective gun

ownership) for the total participant sample is presented in Table 6. This table shows that a positive correlation was found between gun attitudes and total PTSD symptoms, $r(174) = .287$, $p < .01$, between gun attitudes and intrusion symptoms, $r(174) = .260$, $p < .01$, between gun attitudes and avoidance symptoms, $r(174) = .297$, $p < .01$, between gun attitudes and changes in cognition and mood symptoms, $r(174) = .274$, $p < .01$, as well as between gun attitudes and changes in arousal and reactivity symptoms, $r(174) = .207$, $p < .01$ in the total participant sample. Additionally, a positive correlation was found between gun attitudes and protective gun ownership $r(174) = .271$, $p < .01$ in the total participant sample.

Two separate correlation matrices depicting the bivariate associations between study variables (i.e., PTSD total symptoms, each PTSS symptom cluster, gun attitudes, gun ownership, and protective gun ownership) among the women participant sample and men participant sample are presented in Tables 7 and Table 8, respectively. Table 7 showed that a positive correlation was found between gun attitudes and total PTSD symptoms, $r(125) = .247$, $p < .01$, between gun attitudes and intrusion symptoms, $r(125) = .224$, $p < .05$, between gun attitudes and avoidance symptoms, $r(125) = .247$, $p < .05$, between gun attitudes and changes in cognition and mood symptoms, $r(125) = .236$, $p < .01$, as well as between gun attitudes and changes in arousal and reactivity symptoms, $r(125) = .187$, $p < .01$ in the sample of participants identifying as women. Table 8 shows that no significant correlations were found between gun attitudes and total PTSD symptoms, intrusion symptoms, avoidance symptoms, negative cognition and mood symptoms, and in arousal and reactivity symptoms in the sample of participants identifying as men.

Additionally, a correlation matrix depicting the bivariate associations between machismo (total machismo score, traditional machismo, and caballerismo) and gun attitudes and protective gun ownership is presented in Table 9. Table 9 showed that a negative correlation was found

between traditional machismo and protective gun ownership, $r(47) = -.298, p < .05$. A moderate negative correlation was found between traditional machismo and gun attitudes, $r(47) = -.547, p < .01$. A negative correlation was found between caballerismo and gun attitudes, $r(47) = -.293, p < .05$. A negative correlation was found between total machismo scores and protective gun ownership, $r(47) = -.365, p < .01$. A moderate negative correlation was found between total machismo scores and gun attitudes, $r(47) = -.613, p < .01$. A negative correlation was found between religious level and gun attitudes, $r(47) = -.388, p < .01$. A positive correlation was found between political standing and protective gun ownership, $r(47) = .311, p < .05$. A moderate positive correlation was found between political standing and gun attitudes, $r(47) = .505, p < .01$. A moderate negative correlation was found between political standing and traditional machismo, $r(47) = -.598, p < .01$. A negative correlation was found between political standing and total machismo scores, $r(47) = -.445, p < .01$, between political standing and religious level, $r(47) = -.318, p < .05$, and between political standing and worship attendance $r(47) = -.414, p < .01$. No correlation was found between worship attendance and protective gun ownership, gun attitudes, machismo, religious level, or political standing in the sample of participants identifying as men.

Research Question 1

To examine Research Question 1 (“Do gun attitudes mediate the association between PTSS symptom clusters and protective gun ownership among Hispanic young adults with exposure to interpersonal violence?”) A total of five separate simple mediation analyses were conducted (Figures 6 – 10). The five simple mediations conducted used only the participants who identified as women to analyze the association between PTSS symptom clusters and protective gun ownership among young Hispanic women who experienced some form of

interpersonal violence (Figures 6 – 10). Mediation analyses examining these associations among participants who identified as men were not conducted as there were no significant bivariate correlations among study variables in this sample.

Mediation Analysis (Hispanic Women). The first simple mediation depicted in Figure 6 indicates significant associations were found between total PTSS and gun attitudes ($B = .079, p = .005$), 95% CI [.024, .134], and gun attitudes and protective gun ownership ($B = .029, p = .003$), 95% CI [.009, .049]. However, no significant association was found between total PTSS and protective gun ownership ($B = -.002, p = .624$), 95% CI [-.008, .004]. The analysis indicated that total PTSS has an indirect effect on protective gun ownership through attitudes towards guns and leads to a decreased likelihood of women reporting owning guns for protection when they had more positive/favorable attitudes towards guns.

The second simple mediation depicted in Figure 7 indicates significant associations were found between PTSD intrusion/re-experiencing symptoms and gun attitudes ($B = .264, p = .011$), 95% CI [.061, .467], and gun attitudes and protective gun ownership ($B = .028, p = .005$), 95% CI [.008, .047]. However, no significant association was found between PTSD intrusion/re-experiencing symptoms and protective gun ownership ($B = .000, p = .999$), 95% CI [-.022, .022]. The analysis indicated that PTSD intrusion/re-experiencing symptoms have an indirect effect on protective gun ownership through attitudes towards guns and lead to a decreased likelihood of the women reporting owning guns for protection when they had more positive/favorable attitudes towards guns.

The third simple mediation depicted in Figure 8 indicates significant associations were found between PTSD avoidance symptoms and gun attitudes ($B = .583, p = .005$), 95% CI [.178, .989], and gun attitudes and protective gun ownership ($B = .029, p = .003$), 95% CI [.010, .049].

However, no significant association was found between PTSD avoidance symptoms and protective gun ownership ($B = .016, p = .489$), 95% CI [-.062, .029]. The analysis indicated that PTSD avoidance symptoms have an indirect effect on protective gun ownership through attitudes towards guns and lead to a decreased likelihood of the women reporting owning guns for protection when they had more positive/favorable attitudes towards guns.

The fourth simple mediation depicted in Figure 9 indicates significant associations were found between PTSD negative cognition and mood symptoms and gun attitudes ($B = .201, p = .007$), 95% CI [.054, .348], and gun attitudes and protective gun ownership ($B = .029, p = .003$), 95% CI [.009, .048]. However, no significant association was found between PTSD negative cognition and mood symptoms and protective gun ownership ($B = -.004, p = .599$), 95% CI [-.020, .012]. The analysis indicated that PTSD negative cognition and mood symptoms have an indirect effect on protective gun ownership through attitudes towards guns and lead to a decreased likelihood of the women reporting owning guns for protection when they had more positive/favorable attitudes towards guns.

The fifth simple mediation depicted in Figure 10 indicates significant associations were found between PTSD arousal and reactivity symptoms and gun attitudes ($B = .177, p = .035$), 95% CI [.012, .342], and gun attitudes and protective gun ownership ($B = .029, p = .003$), 95% CI [.010, .048]. However, no significant association was found between PTSD arousal and reactivity symptoms and protective gun ownership ($B = -.005, p = .565$), 95% CI [-.023, .013]. The analysis indicated that PTSD arousal and reactivity symptoms did not have an indirect effect on protective gun ownership through attitudes towards guns.

Research Question 2

To examine Research Question 2 (“Does gender influence the indirect effect of PTSS on protective gun ownership through gun attitudes?”) a moderated mediation analysis was conducted (Figure 11a) using the total participant sample with both men and women.

The moderated mediation depicted in Figure 11a indicates no significant associations were found between total PTSS and gun attitudes ($B = .078, p = .540$) 95% CI [-.178, .330], or gender identity and gun attitudes ($B = 1.94, p = .297$), 95% CI [-1.72, .560]. Figure 11b demonstrates no significant interaction effect of gender was found between associations of total PTSS, gun attitudes, and protective gun ownership ($B = .0005, p = .994$), 95% CI [-.134, .134].

CHAPTER V

DISCUSSION

The present study aimed to examine the role gun attitudes play in the association between PTSS clusters and protective gun ownership among Hispanic young adults exposed to interpersonal violence. The present study expands on existing research on exposure to trauma and gun attitudes (Wamser-Nanney et al., 2021a; Wamser-Nanney et al., 2019b) by assessing the association between PTSS clusters related to interpersonal trauma, gun attitudes, and protective gun ownership among Hispanic/Latinx young adults. The study had two aims: first, to examine the mediating role of gun attitudes in the association between PTSS symptom clusters and protective gun ownership in men and women. The second aim was to examine the interaction effect of gender identity (men vs. women) on the indirect effect of PTSS on protective gun ownership through gun attitudes.

Mediation analyses

The current study findings are of particular interest given that the mean score of PTSD symptoms present ($M = 29.8$, $SD = 20.17$) among the participants falls just below the recommended cutoff for a probable PTSD diagnosis (i.e., a cutoff score of 33) in a clinical setting (Blevins et al., 2015) and further expands on past findings on posttraumatic stress symptoms and gun attitudes (Wamser-Nanney et al., 2019a).

Results did not support the first hypothesis as gun attitudes did mediate the association between PTSS symptom clusters and protective gun ownership, but only in Hispanic women. Contrary to expectations, gun attitudes were found to mediate the association between PTSD

total symptoms/PTSS symptoms clusters and protective gun ownership in all five mediations, indicating that positive/favorable gun attitudes lead to a decreased likelihood of women reporting owning a gun for protection. In the women sample, all five simple mediations conducted found there was no significant association between PTSD total symptoms/PTSS symptom clusters and protective gun ownership. The study findings serve to further highlight that gun attitudes and gun ownership (in this case, protective gun ownership) are affected by many factors, and the interactions of these factors should be considered when examining gun attitudes and gun ownership.

These findings support previous studies that have argued there is a fundamental need for safety which impacts gun attitudes, and that an individual's perception of how guns will impact their safety will affect their gun attitudes. Perceiving guns as a means to safety leads to more favorable gun attitudes, regardless of present risk, and can potentially increase an individual's motivation for gun ownership (Bryan et al., 2020). However, an increased motivation for gun ownership does not guarantee an individual will purchase a gun as many other factors will also come into play. Some factors that can affect the likelihood of an individual owning a gun for protection besides fear can include past victimization (Wallace, 2020), a need for protection/safety (Bryan et al., 2020; Pierre, 2019; Shepperd et al., 2018), current exaggerated threat perceptions (Anestis & Bryan, 2021; Bryan et al., 2020), religiosity and religious involvement (Mencken & Froese, 2019; Merino, 2018), employment and/or economic precarity, gun empowerment, and type of gun ownership such as recreation, protection, or collection (Mencken & Froese, 2019). Study findings further stress the need to assess and control for threat perceptions, economic standing, religion, and gun empowerment when examining associations

between gun attitudes and gun ownership among participants that have experienced past victimization.

Possible explanations for the differences found in the correlations among the women and men include gendered differences in the effects of trauma exposure on gun attitudes (Wallace, 2020), as well as differences in the type of trauma exposure affecting gun attitudes (Wamser-Nanney et al., 2019a; Wamser-Nanney et al., 2019b). These gendered differences could also affect the level of gun empowerment owning a firearm gives women and men; This can be explained as women have typically seen owning a gun as way to close the gap in physical strength between themselves and possible male assailants (Wallace, 2020).

The second aim of the study was to examine the interaction effect of gender identity (men vs. women) on the indirect effect of PTSS on protective gun ownership through gun attitudes. Results revealed that gender identity did not moderate the association between PTSD symptoms, gun attitudes, and gun ownership for protection. Consequently, the second hypothesis was not supported as identifying as a woman (versus a man) did not lead to more positive/favorable gun attitudes across differing PTSS cluster scores. Further research is needed to see where gender identity may play a role in these associations, as well as identify other possible confounding variables for which we did not assess.

The present study revealed several significant correlations among study variables in the total sample and among women. The presence of PTSD symptoms, total and individual symptom clusters, were positively correlated with positive/more favorable gun attitudes women; however, these correlations were not significant among men. Additionally, positive/more favorable gun attitudes was positively correlated with gun ownership in women. This indicated that

positive/more favorable gun attitudes were related to lower levels of protective gun ownership. Thus, women were more likely to have positive/more favorable gun attitudes when they reported experiencing higher levels of PTSD symptoms. This finding is consistent with previous findings linking prior victimization influencing gun attitudes among female but not male participants (Wallace, 2020). However, it is important to note that the study is gender skewed as approximately 75.7% of the total sample identified as women. Future research should aim to have a balanced or more representative sample of men to match national rates of gun ownership, as men are typically more likely to report owning a gun (Parker et. al., 2017).

In the current study, the frequency at which Hispanic women and men were exposed to interpersonal violence varied by form of interpersonal violence reported; women consistently endorsed higher rates of victimization than men across most forms of interpersonal violence with the exception of two forms (i.e., slapped/beaten/harmed by someone, and threatened with a weapon such as a knife or gun). These differences in rates of exposure could have affected the study results as experiencing interpersonal violence leads to an increased risk of development of PTSD symptoms (Gillikin et al., 2016; Roberts et al., 2011) and changes in gun attitudes (Wallace, 2020). When examining the frequency of gun ownership by type of gun, results showed that Hispanic women and men both reported higher levels of handgun/revolver ownership as compared to long gun and automatic/semiautomatic guns. Further examination revealed that protection was reported as the most common reason for gun ownership across gun types in both the total sample and men. This is consistent with previous literature wherein handguns/revolvers were the type of gun most consistently to be reported when protection was the motivation for gun ownership (Mencken & Froese, 2019; Stroebe et al., 2017).

At an exploratory level of interest, the present study revealed several significant negative correlations among men. For instance, a significant negative correlation was found between total machismo scores and protective gun ownership, indicating that higher levels of machismo (traditional masculinity) were correlated to an increased likelihood that the men reported owning a gun for protection. Additionally, a significant moderate negative correlation was found between total machismo scores and gun attitudes, indicating that higher levels of machismo were correlated to less favorable attitudes towards guns. These preliminary suggest that machismo is associated with less favorable attitudes towards guns; however, these finding need to be replicated. These mixed findings highlight the need for future research to examine threat expectations among Hispanic men, and how these threat expectations and machismo may be affecting protective gun ownership. A significant negative correlation was found between reported religiosity and gun attitudes, indicating that Hispanic men reporting higher religiosity were also reporting less favorable gun attitudes. This finding is consistent with previous findings indicating that religious activity devalues the importance of guns (Mencken & Froese, 2019). Mencken and Froese (2019) examined how guns functioned symbolically and found that religious communities offset the need for guns as a source of self-esteem and moral standing by providing alternate symbols and identities. Their argument that more devout individuals may have less time or need for guns appeared to be supported in the present sample.

When assessing political standing among the sample of Hispanic men, significant correlations of interest arose. Political standing was significantly positively correlated to protective gun ownership, indicating that Hispanic men were less likely to report owning a gun for protection if they identified on the more liberal end of the political spectrum. Additionally, a moderate positive correlation was found between political standing and gun attitudes, indicating

that Hispanic men who identified as more liberal were more likely to report more positive/favorable gun attitudes. These findings, while interesting, raise the need for future studies to examine how culture and political climate in the Rio Grande Valley may affect the expected findings and lead to results that differ from other established research (Mencken & Froese, 2019). Political standing was also found to be negatively correlated with reported religious level, indicating that Hispanic men were less likely to report being religious if they identified as more liberal on the political spectrum.

A significant moderate negative correlation was found between political standing and machismo, indicating that Hispanic men that identified on the more conservative end of the political spectrum were more likely to report higher levels of machismo. Additionally, caballerismo was found to be negatively correlated with protective gun ownership, indicating that Hispanic men with higher levels of caballerismo were more likely to report owning a gun for protection. This interaction should be examined further as caballerismo relates to emotional connectedness, honor, and nurturance; men high in caballerismo can be described as exhibiting nurturing, chivalrous, and family centered values (Arciniega et al., 2008) therefore increased levels of caballerismo may serve as a risk factor alongside traditional machismo among Hispanic men leading to increased rates of gun ownership. This finding may be explained by the items regarding family centeredness within the subscale measuring caballerismo (i.e., “*Men should be willing to fight to defend their family*”). These beliefs could increase expected threat perceptions and enhance the need to own a gun for protection as the present threat perceptions extend to not only the men but also their family. Future studies examining gun attitudes among Hispanic men and women should examine the interactive effects of machismo and caballerismo among gun attitudes and gun ownership. This would lead towards a fuller conception of gun attitudes and

ownership among a more culturally diverse population that comprises approximately 20% of the reported gun owners in the United States (Parker et. al, 2017).

Study Limitations

The study was conducted on a convenient sample of college students, all of whom were Hispanic young adults, in an area no more than 50 miles from the South Texas – Mexico border, thus limiting the generalizability of the findings. Additionally, the current study is gender skewed as it is predominantly composed of female participants. Additionally, all of the participants in the study sample were gun owners; therefore, a comparison of how gun attitudes affect the association between PTSS symptom clusters and gun ownership after experiencing interpersonal violence could not be examined in a dichotomous gun ownership versus non-gun ownership sample. Additionally, the study did not measure threat perceptions present among the participants, which could affect the reasons participants gave for their gun ownership. Finally, the gun ownership items used in the current study were created by the research team and were modeled after examples of survey items in the *Gun Culture in Action* study (Mencken & Froese, 2019); therefore, the responses gathered on these items may have affected study results due to wording, presentation, and their overall internal validity.

Future Directions

Future studies should examine the associations between PTSS, gun attitudes, and gun ownership in men and women who have and have not been exposed to interpersonal trauma separately. Future work should also examine the different facets of gun attitudes such as the right to own a gun, guns providing protection, and guns stimulating crime among individuals who have experienced interpersonal violence and their type of gun ownership (i.e., protection,

recreation, collection). These three facets of gun attitudes can shed a light on how exposure to interpersonal violence can be influencing gun attitudes and why this interaction differs among men and women. Additionally, future work should survey a population with a larger age range to include middle-aged and older adults within the participant pool. Increasing the age range would allow further generalizability, as well as help gather a more diverse participant pool as life experiences will vary widely between age groups. Finally, future studies should incorporate measures to assess participant suicidality as trauma exposure, PTSD symptoms, and gun ownership all increase the risk of death by suicide (Anestis & Houtsma, 2018; Roberts et al., 2011) and these factors present together may substantially increase that present risk.

Conclusion

This study adds to the growing body of literature regarding posttraumatic stress symptoms related to exposure to interpersonal violence, gun attitudes, and protective gun ownership in an underrepresented Hispanic/Latinx sample. The significant associations between PTSS symptom clusters, gun attitudes, and protective gun ownership among Hispanic women (and not Hispanic men) sheds a light on how gender identity and culture affect our individual experiences and emotional/cognitive reactions to trauma. The differences in levels of exposure to trauma, shifts in gun attitudes, and endorsement of protective gun ownership highlight that while our inherent need for safety is universal, it may be affected on an individual level by other factors such as gender. Additionally, the study further examined differences in the type of gun ownership by gun type, showcasing a need for future research to take into consideration the type of gun ownership participants endorse (i.e., protective vs. recreation/collection). Further research should be encouraged as there is a growing risk for gun violence and exposure to trauma,

particularly among young adults, which could affect future rates of gun ownership among young men and women across the nation.

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APPENDIX

APPENDIX

Tables

Table 1.

Sample size and percentages for all categorical variables present.

Variable	<i>n</i>	%	Variable	<i>n</i>	%
1. Biological Sex			5. Citizenship		
Male	48	27.3%	U.S. Citizen by birth	165	93.8%
Female	125	71.0%	U.S. Citizen by naturalization	7	4.0%
2. Gender Identity			No	4	2.3%
Man	49	27.8%	6. Relationship Status		
Woman	127	72.2%	Single	102	58.0%
3. Sexual Orientation			Married	13	7.4%
Lesbian	1	0.6%	Cohabiting	19	10.8%
Gay	4	2.3%	Dating but living separately	42	23.9%
Bisexual	23	13.1%	7. Political Standing		
Heterosexual	131	74.4%	Extremely Conservative	7	4.0%
Asexual	1	0.6%	Conservative	23	13.1%
Pansexual	6	3.4%	Leaning Conservative	20	11.4%
Other unspecified	7	4.0%	Moderate	68	38.6%
4. Annual Household Income			Leaning Liberal	22	12.5%
< \$10,000	17	9.7%	Liberal	24	13.6%
\$10,000 - \$19,999	21	11.9%	Extremely Liberal	8	4.5%
\$20,000 - \$29,999	12	6.8%			
\$30,000 - \$39,999	18	10.2%			
\$40,000 - \$79,999	61	34.7%			
\$80,000 - \$99,999	22	12.5%			
\$100,000 to > 150,000	24	13.7%			

Table 2.

Frequency at which total participants endorsed experiencing each form of interpersonal violence in the total sample.

Form of interpersonal violence	N	%
Physical force used against individual in mugging	3	1.7%
Physical force used against individual in a sexual assault when they were a child	43	24.4%
Physical force used against individual in an attempted sexual assault	50	28.4%
Touched in intimate/private areas against their wishes	107	60.8%
Slapped/beaten/harmed by parent or caregiver as a child	36	20.5%
Slapped/beaten/harmed by someone	64	36.4%
Threatened with a weapon such as a knife or gun	36	20.5%
Been present when another person was killed, injured, or sexually assaulted	36	20.5%

*Total percentage for each form of violence experiences derive from overall participants ($n = 176$) as more than one form of interpersonal violence may be experienced by a participant

Table 3.

Frequency at which participants identifying as women endorsed experiencing each form of interpersonal violence.

Frequency	Form of interpersonal violence	N	%
	Physical force used against individual in mugging	1	0.8%
	Physical force used against individual in a sexual assault when they were a child	40	31.5%
	Physical force used against individual in an attempted sexual assault	45	35.4%
	Touched in intimate/private areas against their wishes	93	73.2%
	Slapped/beaten/harmed by parent or caregiver as a child	22	17.3%
	Slapped/beaten/harmed by someone	44	34.6%
	Threatened with a weapon such as a knife or gun	21	16.5%
	Been present when another person was killed, injured, or sexually assaulted	21	16.5%

*Total percentage for each form of violence experiences derive from overall participants ($n = 127$) as more than one form of interpersonal violence may be experienced by a participant

Table 4.

Frequency at which participants identifying as men endorsed experiencing each form of interpersonal violence.

Form of interpersonal violence	N	%
Physical force used against individual in mugging	2	4.1%
Physical force used against individual in a sexual assault when they were a child	3	6.1%
Physical force used against individual in an attempted sexual assault	5	10.2%
Touched in intimate/private areas against their wishes	14	28.6%
Slapped/beaten/harmed by parent or caregiver as a child	14	28.6%
Slapped/beaten/harmed by someone	20	40.8%
Threatened with a weapon such as a knife or gun	15	30.6%
Been present when another person was killed, injured, or sexually assaulted	15	30.6%

*Total percentage for each form of violence experiences derive from overall participants ($n = 49$) as more than one form of interpersonal violence may be experienced by a participant

Table 5.

Descriptive statistics for the continuous variables present in the study for the total participant sample.

Variable	<i>n</i>	<i>M</i>	<i>SD</i>
Age	176	20.6	2.9
Gun attitudes	176	18.7	6.5
Gun ownership	176	16.8	2.0
PTSD Intrusion Symptoms	176	6.3	5.6
PTSD Avoidance Symptoms	176	3.3	2.8
PTSD Changes in Negative Cognition and Mood Symptoms	176	11.1	7.8
PTSD Changes in Arousal and Reactivity Symptoms	176	9.2	6.7
Total PTSD Symptoms Present	176	29.8	20.2
Valid N (listwise)	176		

Table 6.*Correlations among study variables within the total participant sample.*

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Total PTSD Symptoms	176	29.79	20.17	--							
2. Intrusion Symptoms	176	6.33	5.58	.858**	--						
3. Avoidance Symptoms	176	3.27	2.79	.799**	.758**	--					
4. Negative Cognition and Mood Symptoms	176	11.05	7.75	.943**	.731**	.692**	--				
5. Arousal and Reactivity Symptoms	176	9.15	6.68	.875**	.590**	.558**	.788**	--			
6. Gun Attitudes	176	18.72	6.50	.287**	.260**	.297**	.274**	.207**	--		
7. Gun Ownership	176	16.76	1.96	0.105	0.128	.149*	0.072	0.064	.379**	--	
8. Lower Protective Gun Ownership	176	4.43	0.74	0.051	0.076	0.049	0.035	0.029	.271**	.735**	--

** Correlation is significant at the 0.01 level (2-tailed).

Table 7.*Correlations among study variables within the sample of participants identifying as women.*

	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Total PTSD Symptoms	127	33.60	20.83	--							
2. Intrusion Symptoms	127	7.37	5.68	.851**	--						
3. Avoidance Symptoms	127	3.83	2.83	.808**	.746**	--					
4. Negative Cognition and Mood Symptoms	127	12.35	7.84	.949**	.721**	.732**	--				
5. Arousal and Reactivity Symptoms	127	10.05	7.06	.888**	.606**	.570**	.814**	--			
6. Gun Attitudes	127	19.57	6.69	.247**	.224*	.247**	.236**	.187*	--		
7. Gun Ownership	127	16.94	1.94	0.096	0.12	0.093	0.076	0.064	.372**	--	
8. Lower Protective Gun Ownership	127	4.49	0.73	0.022	0.057	0.005	0.016	0.001	.255*	.718**	--

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 8.*Correlations among study variables within the sample of participants identifying as men.*

	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Total PTSD Symptoms	49	19.92	14.38	--							
2. Intrusion Symptoms	49	3.63	4.31	.808**	--						
3. Avoidance Symptoms	49	1.80	2.06	.615**	.664**	--					
4. Negative Cognition and Mood Symptoms	49	7.67	6.44	.905**	.649**	.368**	--				
5. Arousal and Reactivity Symptoms	49	6.82	4.94	.769**	.357*	.313*	.611**	--			
6. Gun Attitudes	49	16.53	5.47	0.208	0.154	0.246	0.213	0.089	--		
7. Gun Ownership	49	16.29	1.94	-0.058	-0.02	0.161	-0.104	0.084	.326*	--	
8. Lower Protective Gun Ownership	49	4.29	0.74	-0.015	-0.012	0.026	-0.046	0.015	0.246	.760**	--

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 9.

Correlations among Protective Gun Ownership, Gun Attitudes, Machismo, Religious Level, Attendance to Place of Worship, and Political Standing variables in the participants who identified as men.

Variable	<i>n</i>	1	2	3	4	5	6	7	8
1. Protective Gun Ownership	49	--							
2. Gun Attitudes	49	0.246	--						
3. Traditional Machismo	49	-.298*	-.547**	--					
4. Caballerismo	49	-0.211	-.293*	0.000	--				
5. Machismo Total Score	49	-.365**	-.613**	.798**	.602**	--			
6. Religious Level	49	-0.257	-.388**	0.118	0.147	0.183	--		
7. Worship Attendance	49	-0.175	-0.077	0.174	0.151	0.226	0.268	--	
8. Political Standing	49	.311*	.505**	-.598**	0.055	-.445**	-.318*	-.414**	--

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Figures

Figure 1.

Frequency at which total participants endorsed gun ownership based on gun type.

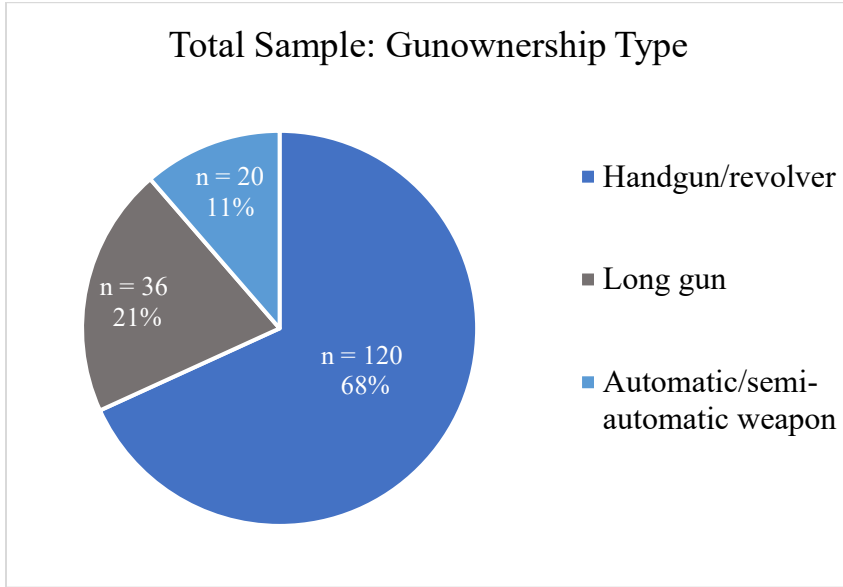


Figure 2.

Frequency at which participants identifying as women endorsed gun ownership based on gun type.

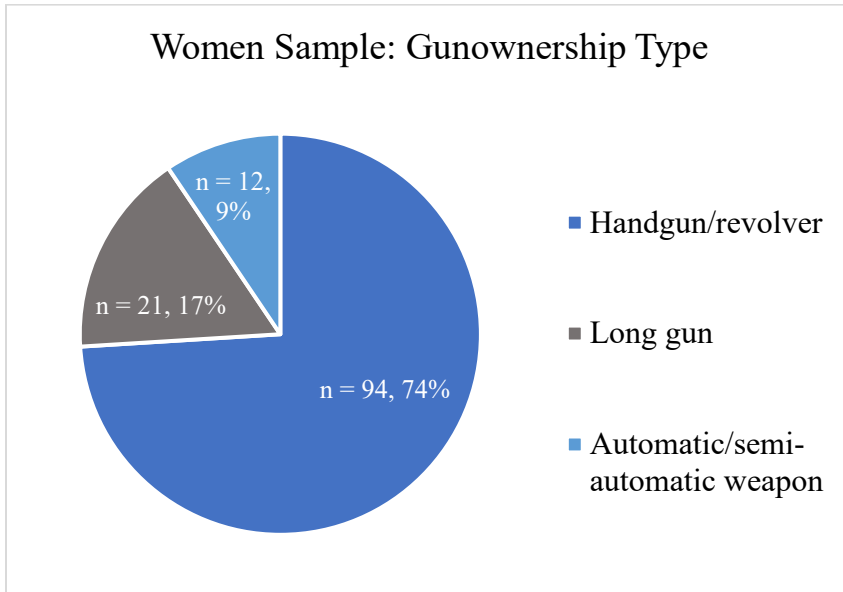


Figure 3.

Frequency at which participants identifying as men endorsed gun ownership based on gun type.

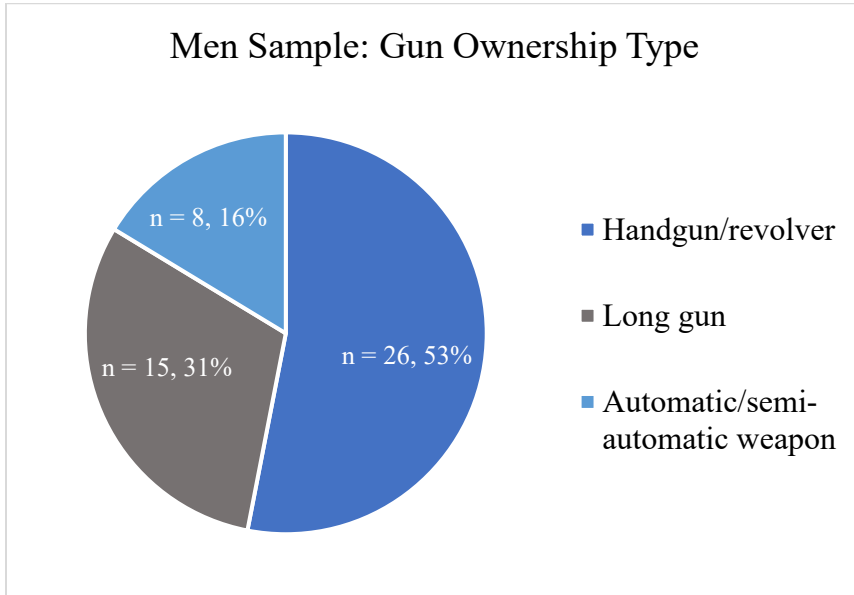


Figure 4.

Frequency at which participants reported owning different gun types for different purposes (i.e., protection, recreation, and collection).

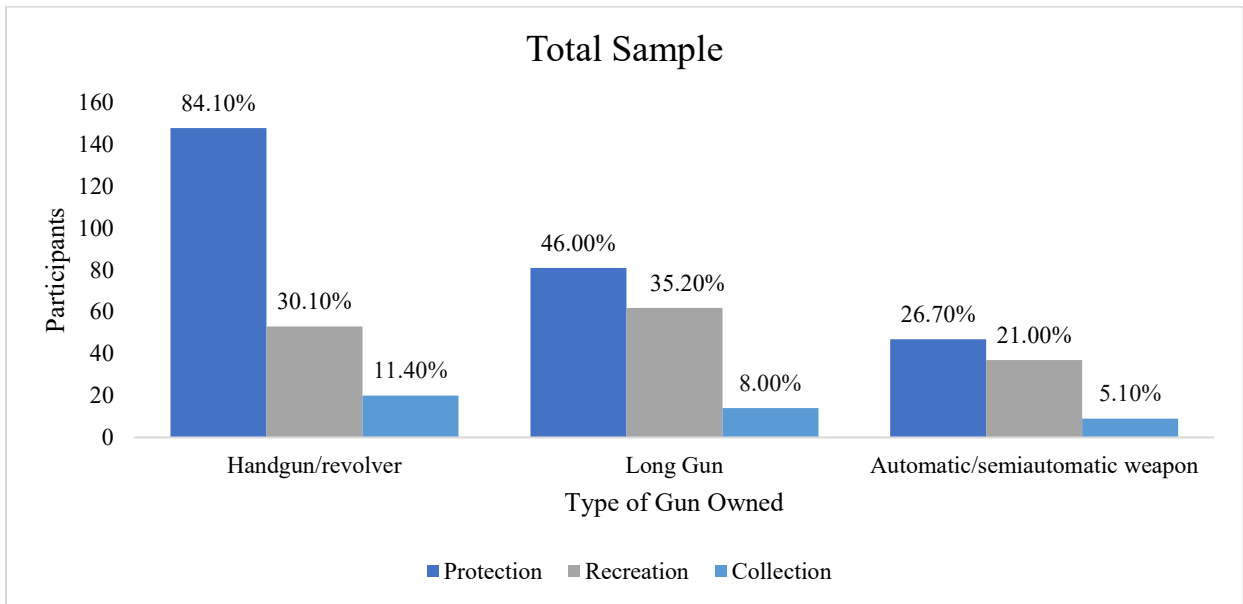


Figure 5.

Frequency at which the participants identifying as men reported owning different gun types for different purposes (i.e., protection, recreation, and collection).

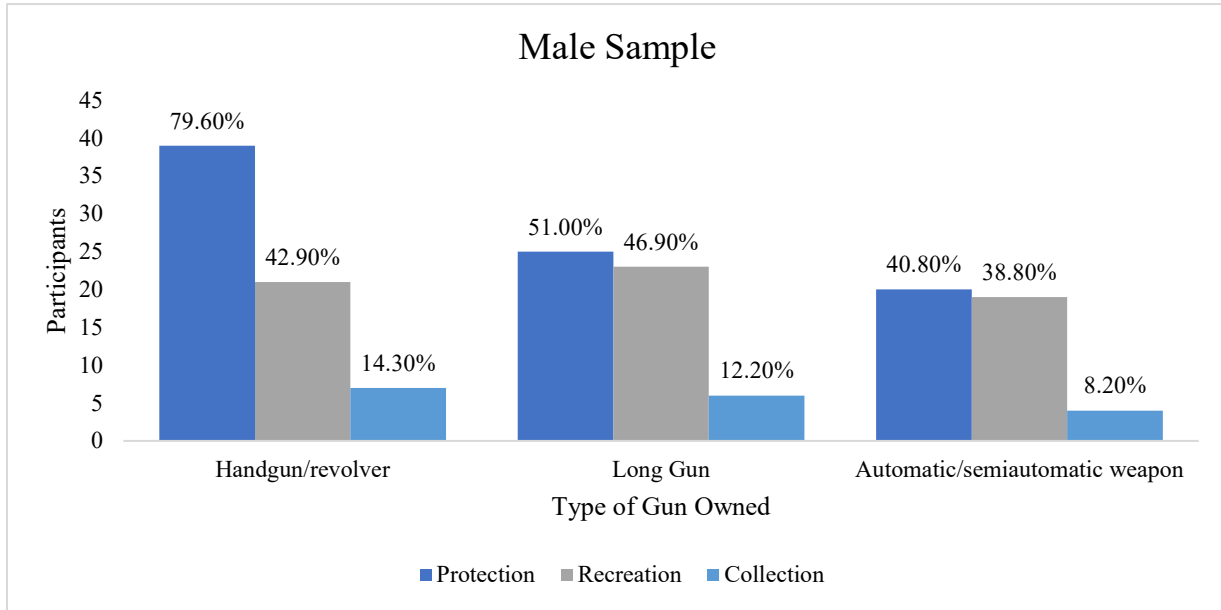


Figure 6. *Mediation Analysis Model 4 for Total PTSD Symptoms and Protective Gun Ownership as Mediated by Attitudes Towards Guns in Women.*

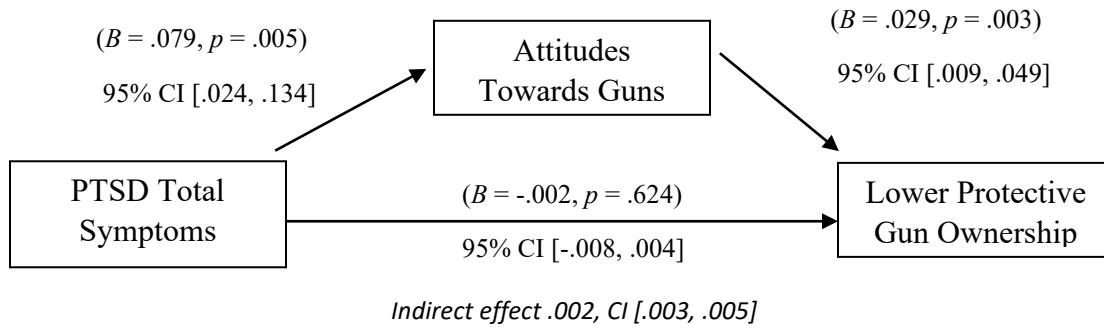


Figure 7. Mediation Analysis Model 4 for PTSD Intrusion/Re-experiencing Symptoms and Protective Gun Ownership as Mediated by Attitudes Towards Guns in Women.

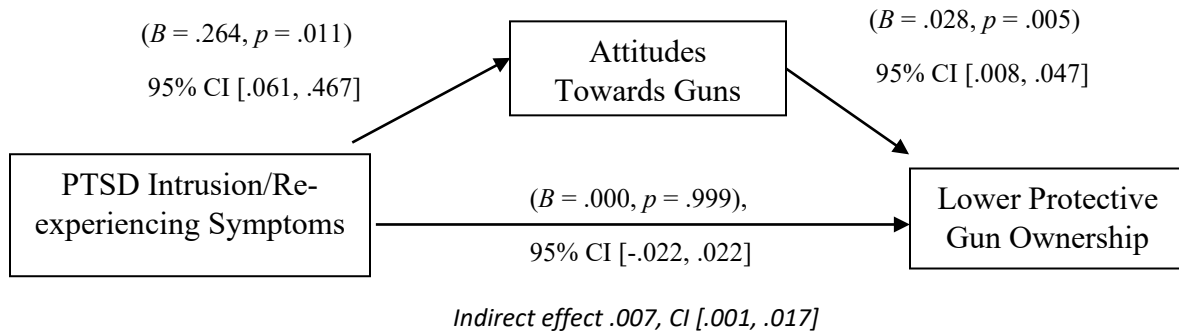


Figure 8. Mediation Analysis Model 4 for PTSD Avoidance Symptoms and Protective Gun Ownership as Mediated by Attitudes Towards Guns in Women.

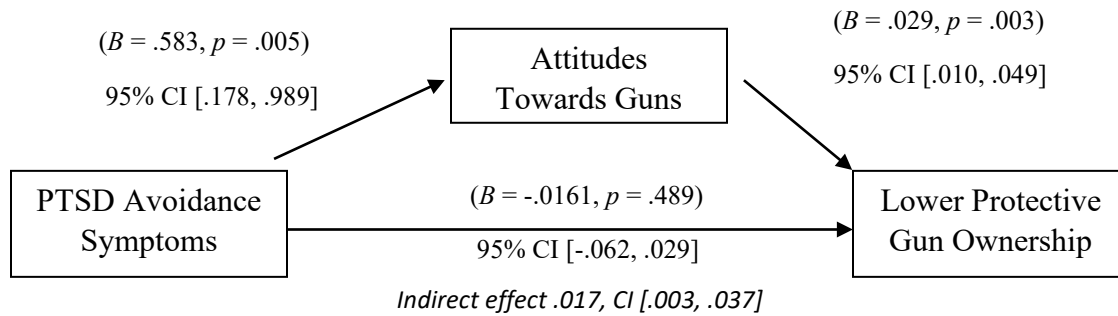


Figure 9. Mediation Analysis Model 4 for PTSD Negative Cognition and Mood Symptoms and Protective Gun Ownership as Mediated by Attitudes Towards Guns in Women.

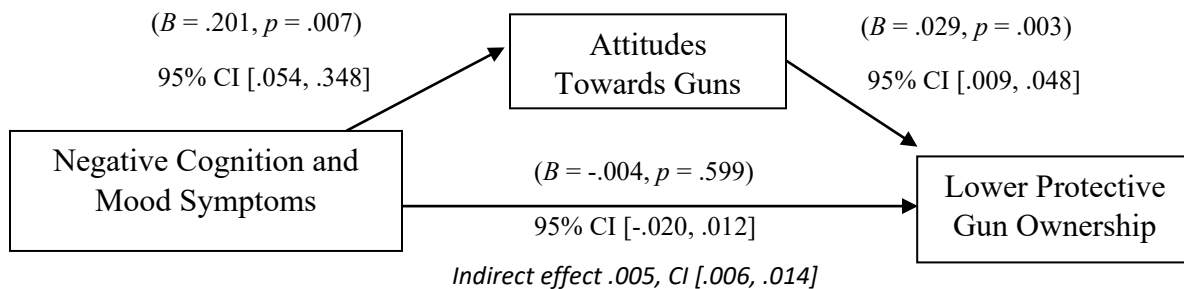


Figure 10. Mediation Analysis Model 4 for PTSD Arousal and Reactivity Symptoms and Protective Gun Ownership as Mediated by Attitudes Towards Guns in Women.

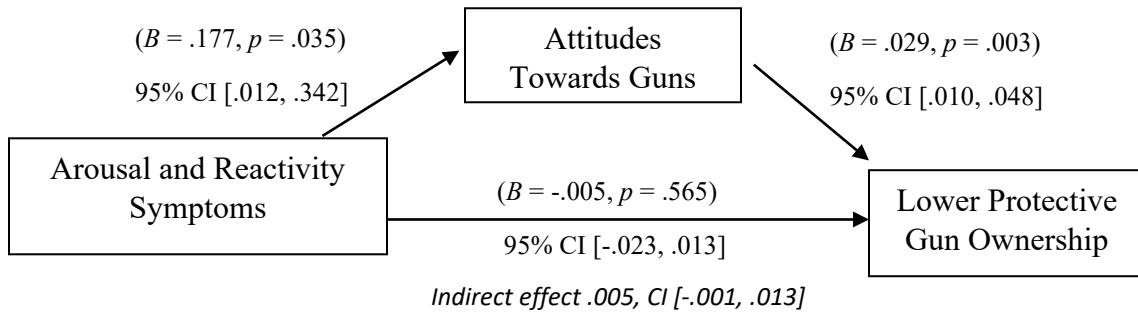


Figure 11. Moderated Mediation Analysis Model 7 for the Conditional Indirect Effects of PTSD Total Symptoms and Attitudes Towards Guns on Protective Gun Ownership via Gender Identity.

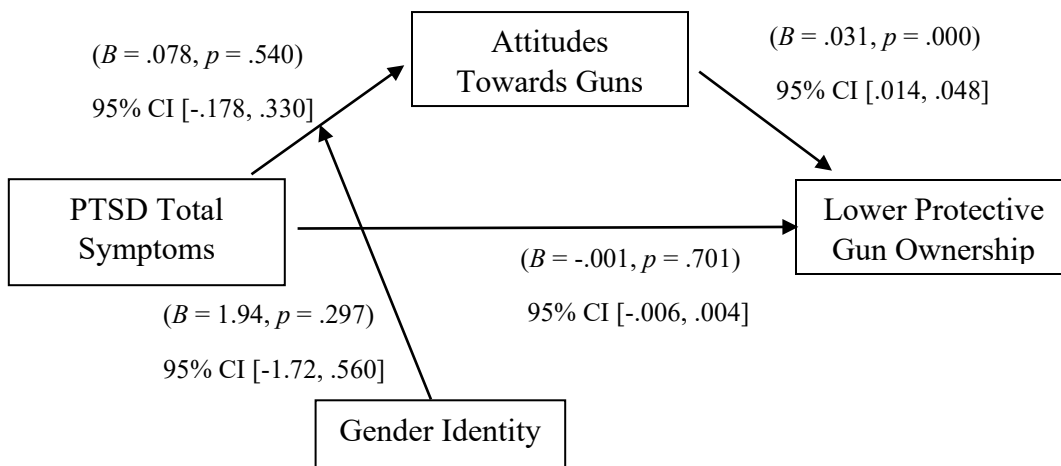
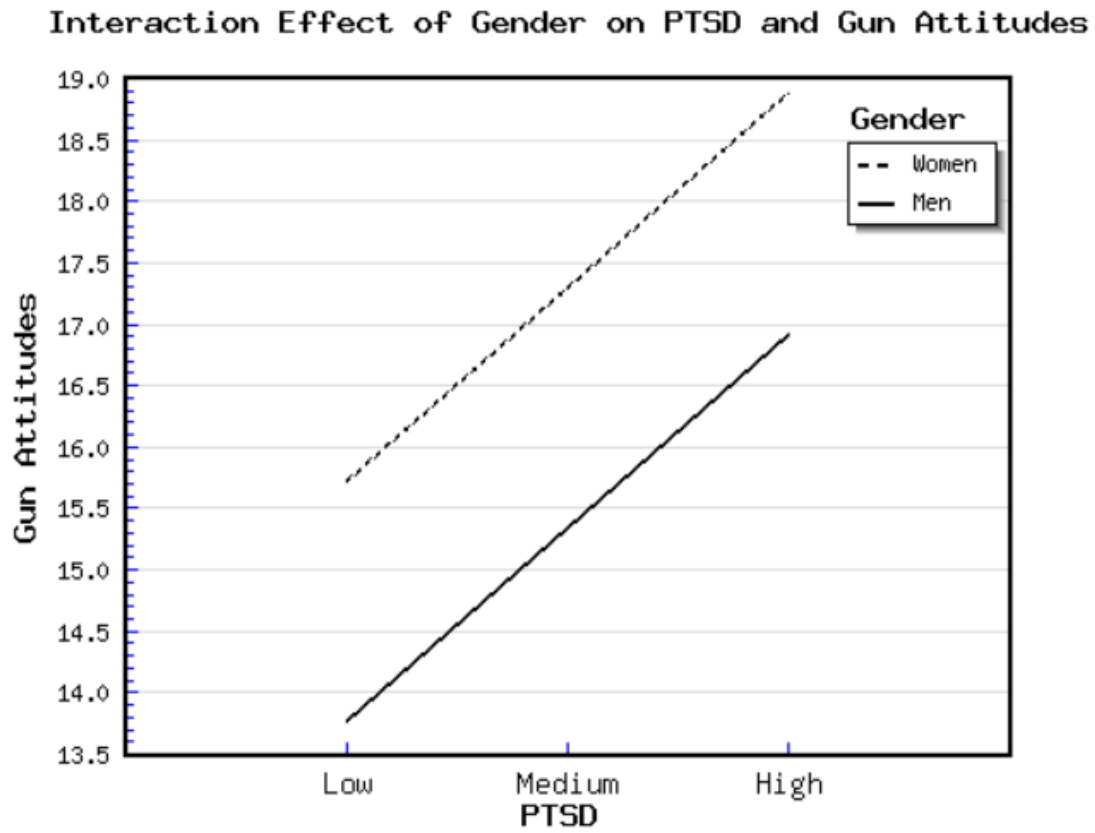


Figure 11b. *Non-significant Interaction Effects of Binary Gender on PTSD Symptoms and Gun Attitudes.*



BIOGRAPHICAL SKETCH

Vanessa Gonzalez was born and raised in the Rio Grande Valley, Texas. Vanessa began her education at the University of Texas-Pan American Fall of 2014 and proceeded to be enrolled at the University of Texas Rio Grande Valley following the merger between the University of Texas-Pan American and the University of Texas at Brownsville. Vanessa completed her Bachelor of Science in Psychology in December of 2017 and pursued a Master of Arts in Clinical Psychology, wherein she graduated in December 2022. She plans to continue her doctoral studies in clinical psychology. During her time as a graduate student, Vanessa joined the Adversities in Childhood and Trauma Studies (ACT) Lab under the direction of Dr. Ruby Charak. Vanessa became involved in research and attended a conference before the COVID-19 pandemic.

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