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The Role of Facial Emotion Recognition Abilities in Intimate Partner Violence Perpetration

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THE ROLE OF FACIAL EMOTION RECOGNITION ABILITIES

IN INTIMATE PARTNER VIOLENCE

PERPETRATION

A Thesis

by

MARGOT MARTINEZ

Submitted in Partial Fulfillment of the

Requirements for the Degree of

MASTER OF ARTS

Major Subject: Clinical Psychology

The University of Texas Rio Grande Valley

December 2022

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December 2022

ABSTRACT

Martinez, Margot, <u>The Role of Facial Emotion Recognition Abilities in Intimate Partner</u> <u>Violence</u> <u>Perpetration</u>. Master of Arts (MA), December, 2022, 76 pp., 5 tables, 3 figures, references, 101 titles.

Interpreting facial affects is a key aspect in everyday human interaction and intimate partner relationships. Being unable to accurately recognize facial expressions may prompt an inappropriate reaction from the viewer. Limited literature suggests perpetrators of intimate partner violence are less able to accurately recognize facial expressions. The previous body of literature regarding facial affect recognition (FAR) abilities in intimate partner violence failed to take into account the role empathy and emotion regulation play in the relationship between intimate partner violence and FAR abilities. In addition, prior studies investigated these differences in primarily White Non-Hispanic individuals limiting the generalizability of their findings across cultural domains. The current study investigated whether FAR abilities, empathy, and emotion regulation differed between the non-violent control group and the experimental group comprised of individuals court mandated to attend a Batterer Intervention and Prevention Program (BIPP) as well as subgroups of perpetrators. In addition, the moderating role of empathy and emotion regulation in the relationship between FAR deficits and perpetration of IPV was assessed. The sample in the current study consisted of 59 heterosexual men comprised of 30 perpetrators of IPV and 29 nonaggressive control participants collected from a predominantly Hispanic region. Differing abilities in the recognition of fear were found between

the differing samples with the experimental group being less able to identify facial expressions of fear in females. When assessing subtypes of perpetrators, those who perpetrated severe levels of violence against their partner were found to make more mistakes in identifying male expressions of sadness as compared to those who perpetrated minor levels of abuse. Further, exploratory analysis revealed perpetrators of severe IPV received lower scores in the total facial recognition measure, total female expression score, female fear, 'negative' expressions overall, and the female 'negative' cluster as compared to nonviolent control group indicating the deficits in FAR abilities were more pronounced when investigating those who perpetrated severe levels of IPV in contrast to comparing the nonviolent group with perpetrators of IPV overall. In addition, impulse control, a subscale of the emotion regulation measure, was found to be significantly different between the experimental and control group as the experimental sample endorsed more difficulties in this area. Neither of the subscales in an empathy measure were found to be significantly different between the experimental and control group, although differences were found when comparing a subset of the empathy measure, empathetic concern, between the severe IPV to the control group. Finally, neither empathy nor emotion regulation were found to moderate the relationship between FAR abilities and IPV perpetration. The findings of the current study add to the growing body of literature of factors related to IPV perpetration and socialization.

DEDICATION

The completion of my thesis and graduate studies would not have been possible without the unwavering support of my family and friends. Con el apoyo y amor de mis padres, Maria E. Martinez y Ruben M. Martinez, pude seguir adelante y terminar mi maestría apesar de varios obstáculos. It was also through the constant jokes and playful banter with my siblings, Ruben E. Martinez, and Alejandra Martinez, and sister-in-law, Juana Martinez, that I was able to unwind and laugh which kept me from burning out. The patience, understanding, and excitement in my progress of my oldest nephews, Abraham D. Rangel and Ian A. Rangel, enabled me to complete my work and motivated me to keep going. My youngest nephews and niece's giggles and laughs, Jacob, Ruben, Natalie, and Santiago fueled me and brought me joy when I needed it the most. Additionally, I am forever grateful to my friends, Vanessa, Deanna, Mauricio, Frank, Selena, Josie, Lupita, and Isabel, who were always quick to give me advice, guidance, and motivation throughout all my academic endeavors. I am also tremendously grateful to the entire Agado family as they always lent a helping hand and provided me with encouragement to continue when I felt I no longer could. Finally, I do not see myself having been capable to begin or complete my degree without the constant support, love, and guidance of my boyfriend, Rodolfo Agado Jr.

ACKNOWLEDGMENT

I am forever grateful to my mentor and the chair of my thesis committee, Dr. Arthur Cantos, for his guidance and support. His leadership and patience throughout the completion of my thesis has allowed me to appreciate the time and effort undertaking research requires. I greatly appreciate the time and effort he put into ensuring not only my success as a student, but also my development into the researcher I am today. Dr. Cantos' guidance, not only in research, but also in clinical application, were instrumental in my professional development. He served as a kind and compassionate role model, and I will take these experiences with me in the hopes of becoming a caring clinician he would be proud of. I am also grateful to Dr. Jason Popan for his continued guidance throughout the graduate program as an advisor, and for his guidance, both when scheduled and at random times during his office hours. Finally, I am grateful to Dr. Po-Yi Chen for his continued guidance in statistics throughout the thesis process. His dedication to help me was unwavering despite the time differences following his transition to a new academic institution.

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CHAPTER I

INTRODUCTION

The Center for Disease Control and Prevention defines Intimate Partner Violence (IPV) as physical violence, sexual violence, stalking and psychological aggression (including coercive tactics) by a current or former intimate partner (Breiding et al., 2015). IPV is a significant problem within the United States as it is reported that 56.6% of multiracial, 47.5% of American Indian/Alaska Native, 45.1% of non-Hispanic Black, 37.3% of non-Hispanic White, 34.4% of Hispanic, and 18.3% of Asian or Pacific Islander women report to have experienced physical violence, sexual violence, and/or stalking by their intimate partner at one point in their lifetime (Smith et al., 2017). Additionally, an estimated 42.3% of multiracial, 40.5% of American Indian/Alaska Native, 40.1% of non-Hispanic Black, 30.3% of non-Hispanic White, 30.0% of Hispanic, and 13.7% of Asian or Pacific Islander men experienced contact sexual violence, physical violence, and/or stalking by an intimate partner during their lifetimes (Smith et al., 2017).

Within the U.S., IPV creates an estimated financial cost of $103,767 across a female victim's and $23,414 across a male victim's lifetime (Peterson et al., 2018). The aftermath of experiencing IPV for its victims has been associated with increased risk of poor health; depressive symptoms; substance use; and developing a chronic disease, chronic mental illness, and injury (Coker et al., 2002). Most notably, in a study looking at 18 U.S. states from 2003 to 2014, approximately 55% of homicides against women involved an intimate partner (Petrosky et

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al., 2017). When examining the National Violent Death Reporting System (NVDRS) Velopulos et al., (2019) found 1,270 men were possible victims of IPV homicide between 2003 and 2015.

Following an incident of IPV, most perpetrators are court mandated to attend psycho-educational treatments focused on challenging perpetrators' beliefs about power, control, and dominance over their significant other, what some researchers have labeled "one size fits all" programs (Cantos, O'Leary, 2014; Pence & Paymar, 1993). These programs have been found to have minimal effects on recidivism rates for subsets of perpetrators because of their catch all techniques, lack of consideration for the participants' individual characteristics and the multifactorial nature of IPV (Cantos et al., 2019; Babcock et al., 2016). Because of this, researchers theorize providing treatment which takes int account the characteristics within IPV perpetrators, can lead to better treatment outcomes and consequenity potentially minimize recidivism of IPV, protecting previous and potential victims (Cantos, O'Leary, 2014; Babcock et al 2016). Given the impact IPV has for its victims, their families, the perpetrator, and society, and, as the current court mandated program has not been found to be effective for a majority of IPV perpetrators, it is critical to study the perpetrators' heterogeneity as well as the differing risk factors and varying variables that contribute to IPV perpetration. Previous characteristics and variables studied include categorization of perpetrators by subtypes of perpetrators such as generally violent and family only, personality pathology, attachment styles, reactive and proactive aggression, presence or absence of substance abuse, stage of motivation for change of the perpetrator, stage of relationship at the time of perpetration, presence of severe head injury, stake of conformity, among others (Holtzworth-Munroe and Meehan, 2004; Boyle et al., 2008; Cantos, Goldstein, Brenner, O'Leary, & Verborg, 2015; Ehrensaft et al., 2003; Hamberger and

Hastings 1986; Buttell, Muldoon, & Carney, 2005; Fonagy, 1999; Gormley, 2005; Lafontaine & Lussier, 2005; Tweed and Dutton, 1998; Foran & O'Leary, 2008; Stith et al., 2004; Moore et al., 2008; Norcross, Krebs, & Prochaska, 2011; Lorber & O'Leary, 2012; Vickerman & Margolin, 2008; Rosenbaum & Hoge, 1989; Rosenbaum et al., 1994; Mach et al, 2020).

These studies have found significant variability in various aspects key to the reduction of IPV including treatment completion outcomes and recidivism rates demonstrating the heterogeneity of these individuals. One study examining IPV perpetration in two subtypes of perpetrators including those participants with a history of perpetrating violence only against their partner, Family Only (FO), and perpetrators with a history of perpetrating violence against their partner and others, Generally Violent (GV), who attended the same psychoeducational treatment program found those in the GV subgroup recidivated 37.4% of the time as compared to those in the FO subgroup who recidivated 16.6% of the time over a 3-year post probation period (Cantos et al., 2019). Another study investigating differences in IPV found reactive perpetrators were significantly less likely to recidivate IPV perpetration compared to those who perpetrated more proactive aggression after completing the same type of psychoeducational intervention program (Lee, H., Cantos, A.L., Mach, J.L., & Wolff, J., 2018). Notably, Lila, Gracia, and Catala-Minana (2018) found perpetrators of IPV self-reported less physical violence, and a mental health worker assigned to them reported a greater reduction in recidivism risks when they participated in programs which took into consideration their individual characteristics including their motivation to change as well as receiving encouragement to reach their personal goals (Lila, Gracia, and Catala-Minana 2018). In light of this, continued research to learn more about those individual characteristics and the differing aspects related to IPV is necessary to create or incorporate tailor-

made programs to further reduce IPV perpetration. One such area of interest for those studying IPV has been the social behavioral aspect of IPV perpetration.

Researchers have shown interest in understanding when communication and social interactions go astray in intimate partner relationships. Notably, Stith et al. (2008) found communication deficits to be one of the most consistent predictors of IPV perpetration. Further, Adolph (2003) indicated nonverbal communication to be an essential aspect of social interaction with facial expressions holding a prominent role, as being unable to accurately recognize facial affects can lead to inappropriate or ambiguous social interactions. Therefore, continued research of non-verbal communication, such as the perpetrators' ability to read facial expressions, is necessary.

CHAPTER II

REVIEW OF LITERATURE

Facial Affect Recognition

In social contexts, facial expressions can serve as a guide to interpreting what is happening to the people around us and how one chooses to interact, respond, or behave. While studies have found mixed results in how violent men react in relation to a wide range of their partners' behaviors, overall, violent men as compared to non-violent men have been found to react more negatively to perceived 'negative' partner reactions including angry and aversive behaviors and expressions (Boeke and Markman, 1992; Burman, Margolin, and John, 1993; Cordova, et al., 1993; Jacobson et al., 1994; Holtzworth-Munroe and Stuart, 1994; and Burman Margolin, and John., 1993). Given that aggressive men have been found to react negatively to their partners' "negative" emotions and behaviors, a misperception of non-hostile emotions (i.e., fear, sadness, disgust, surprise, and happiness) may potentially place their partners at a higher risk for abuse. Considering this, research is necessary to better understand how aggressive men perceive others' emotions and whether incongruences between their perception and the true expression exist.

Previous studies have found that those individuals who are better able to recognize facial expressions engage in more prosocial behaviors (Marsh, A. A., Kozak, M. N., & Ambady, N. 2007). Contrastingly, research suggests facial expression recognition deficits exist in populations

with a history of perpetrating violent crimes onto others. Stevens, Charman, and Blair (2001) found children with psychopathic tendencies were found to have impairments in recognizing sad and fearful expressions. Gery et al. (2009) found individuals with a history of perpetrating sexual violence against children were less able to accurately identify facial expressions such as anger, disgust, surprise, and fear, as compared to other non-violent inmates and those with no history of incarceration. In addition, Marsh and Blair (2008) found individuals with a history of perpetrating instrumental aggression have deficits in recognizing fearful, sad, and surprised expressions. Similarly, multiple additional studies found male violent offenders mis-categorize facial expressions with their misinterpretations typically leaning to incorrectly assuming hostility (Hoaken et al. 2007; McCown et al. 1986; Sato et al. 2009). More recently, researchers have shown interest in determining whether the trend of facial recognition deficits within violent populations exists in those with a history of perpetrating IPV. Babcock, Green, and Webb (2008) found perpetrators of IPV as a whole were not more likely to mis-categorize facial expressions compared to non-violent individuals and instead found that those categorized as generally violent antisocial presented with deficits in categorizing angry, happy, neutral, and surprised faces but they did not display difficulty identifying fear or sad expressions. However, Nyline (2016) found perpetrators of IPV to be less accurate in identifying fear and sad affects, while they found no differences in their abilities of identifying anger, disgust, happiness, and surprise affects as compared to non-violent groups. Marshall and Holtzworth-Munroe (2010) found an association between perpetration of IPV and a diminished sensitivity to expressions of fear displayed by both their wife and unfamiliar women.

The limited and conflicting existing literature regarding facial emotion recognition abilities in individuals with a history of IPV show further investigation is necessary to form a

better understanding of the social deficits that exist in this population. Further, as social communication is multifaceted, facial emotion recognition abilities cannot be explored independently of other important aspects of social communication including empathy. Per the violence inhibition model, during an interaction, the observation of distress cues evokes empathetic reactions by the observer which may in turn cause the observer to inhibit the behaviors which initially caused these distress cues (Blair, 1995, 2001). Partners who are not receiving these distress cues due to difficulties in facial emotion recognition abilities may not reciprocate with an appropriate empathic reaction.

Empathy

Although a concrete definition of empathy and testing method has yet to be established, Gery et al. (2009) found a recurrent pattern amongst most research investigating empathy where empathy is believed to be made up of multiple components including being able to understand another person's experience, being able to take the perspective of others, and being able to imagine the experiences of others in response to observing their behavioral and emotional cues. Similarly, Davis (1996) model describes empathy as a multimodal reaction involving four domains including antecedents, or involving the aspects of the observer, recipient, and their environment; processes, or the means of producing an empathic outcome; intrapersonal outcomes, or the covert cognitive and emotional reactions of the observer; and interpersonal outcomes, which encompass any related behaviors directed at the recipient. These subcomponents have been associated with playing a role in prosocial behaviors (Eisenberg and Miller, 1987), social bonds (Anderson and Keltner, 2002), moral judgment (Hoffman, 1987) and altruism (Batson, 1991). Moreover, diminished experiences of empathy have been found to be associated with aggressive, delinquent, and antisocial behaviors (Miller and Eisenberg, 1988;

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Jolliffe and Farrington, 2004; Lovett and Sheffield, 2007). When assessing romantic relationships, in non-violent relationships empathy was found to play a role in managing interpersonal situations and was found to be positively correlated to the couples' relationship quality (Ulloa, Hammett, Meda, and Rubalcaba, 2017). Further, empathy was found to be negatively associated with aggressive behavior in violent men (Armenti and Babcock, 2018). Similarly, longitudinal studies found lower rates of empathy to be associated with an increased risk of both verbal and physical aggression towards a romantic partner in community samples and men with a history of IPV (Péloquin et al. 2011; Covell et al. 2007). Jaffe et al. (2015) noted both emotional dysregulation and empathy deficits were found to be associated with aggression. As emotion regulation is theorized to play a critical role in the manifestation of empathy and given the well documented association between aggression and lack of empathy, their interaction requires further investigation when examining individuals with a history of violence.

Emotion Regulation

Gratz and Roemer (2004) define emotion dysregulation as being characterized by not accepting one's own emotional response, having impulse control difficulties, having difficulties in engaging in goal directed behavior, having deficits in emotional awareness, and lacking access to emotion regulation. Roberton et al. (2012) pose those individuals who are less able to control their emotions will be more likely to engage in aggressive behavior. Bushman, Baumeister and Phillips (2001) and Jakupcak (2003) note some individuals will engage in aggressive behaviors in an attempt to regulate their negative emotions. Finkel (2007) suggests self-regulation can help predict whether partners refrain from acting on aggressive impulses throughout their intimate relationship. Multiple studies have found problems with emotion regulation in male college samples to be associated with physical and verbal aggression within their romantic relationships

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(Gratz et al. 2009; Gratz and Roemer 2004; Harper et al. 2005; Shorey et al. 2011). McNulty and Helmuth (2008) found in a sample of newlywed couples, being able to regulate negative emotions had an association with less physical perpetration in the relationship. Stuart et al. (2006) and Bliton et al., (2016) also found positive associations between difficulties with emotion regulation and intimate partner violence. Similarly, Pollard and Cantos (2021) found emotional dysregulation and impulsivity increased the risk of IPV in both males and females. Further, Shorey et al. (2011) suggest successful emotion regulation can protect against violence.

Notably, Guyer et al. (2007) found individuals with severe mood dysregulation demonstrated difficulties in facial affect recognition as compared to those with other mental health issues including attention/deficit hyperactivity disorder, depressive disorder, and conduct disorder, highlighting the importance of considering emotion regulation in association with facial emotion recognition abilities in IPV perpetration. Overall, emotion regulation is an important factor of interaction within romantic partners; therefore, it is important to consider when studying intimate partner aggression, overall behavior, empathy, and facial emotion recognition abilities.

While investigation of these variables' interactions and role within IPV populations alone may be fruitful, it is also necessary to investigate these interactions between subtypes of perpetrators which previous researchers have found to have differing patterns of behavior and recidivism rates such as the GV and FO subgroups.

Perpetrator Typologies

As has been previously established, perpetrators of IPV are a heterogenous group with varying characteristics that affect IPV perpetration, program completion, and recidivism rates.

Because of this heterogeneity, Holtzworth-Munroe et al. (2000) suggest researchers identify

subtypes of batterers and then investigate the variables of interest between batterer subtypes and

a non-violent sample. Holtzworth-Munroe and Stuart (1994) found that severity of violence

perpetrated in a relationship, the existence of violence within and outside of the relationship, and

personality disorders are dimensions that can be used to consistently differentiate perpetrators of

IPV. Using these dimensions, Holtzworth-Munroe and Stuart (1994) created three subtypes of

batterers: family only (FO), borderline/dysphoric (BD), and generally violent or antisocial

(GVA). According to the Holtzworth-Munroe and Stuart (1994) subtype model, FO perpetrators

are found to engage in low severity violent behaviors and they are not violent outside of the

family, BD perpetrators engage in moderate to severe violence mainly to their partner and they

demonstrate the highest levels of emotional volatility, dysphoria, dependency, borderline

personality disorder, and psychological distress, and GVA perpetrators are described as

perpetrators of IPV who engage in moderate to severe violence towards their family and those

outside of their family, they are more likely to be characterized by antisocial personality

disorder, they are more likely to have a substance use disorder, and they are more likely to have a

history of criminal behavior. Using Holtzworth-Munroe and Stuart (1994) typology, researchers

found distinguishing characteristics in these groups of perpetrators including recidivism rates,

criminal history, and treatment completion rates (Huss and Ralston, 2008; Boyle et al., 2008).

Regarding facial affect recognition abilities, Babcock, Green, and Webb (2008) predicted and

found differing facial affect recognition abilities between these perpetrator subtypes.

Specifically, Babcock, Green, and Webb (2008) found the GVA group made more errors in

labeling angry, happy, neutral, and surprised affects. While a useful typology, the replication of

Holtzworth-Munroe and Stuart (1994) typology has been inconsistent (Hamberger et al., 1996;

Holtzworth-Munroe et al., 2000, 2003). In addition, complications arise in consistently and accurately distinguishing between the BD and GVA perpetrators creating difficulties comparing results of studies utilizing this typology system (Waltz et al. 2000). Furthermore, researchers have been met with difficulty administering personality testing reliably, thus affecting the accuracy of distinguishing between typologies (Langhinrichsen-Rohling et al., 2000; Lohr et al., 2005). The current study utilizes the same typology categorization used in Cantos, Goldstein, Brenner, O'Leary, and Verborg (2015), a more easily applied method of distinguishing subgroups of violent men using theoretically important behavioral distinctions. The behavioral based typology classification system has two classifications: FO, perpetrators that are only violent towards their intimate partner, and Generally Violent (GV) perpetrators with history of being violent toward their partner as well as being violent toward other nonfamily members. Given the heterogeneity of IPV perpetrators, the current study will take Holtzworth-Munroe et al., (2000) suggestion of examining IPV between subgroups and use Cantos, Goldstein, Brenner, O'Leary, and Verborg (2015) behavioral typology of GV and FO to distinguish IPV perpetrators. In addition, as using Cantos, Goldstein, Brenner, O'Leary, and Verborg (2015) classification assess who the perpetrator aggresses against (i.e., romantic partner, co-worker, strangers), but not the severity of the aggression perpetrated (i.e., slapping, punching, kicking) as the Holtzworth-Munroe et al., (2000) considers, the current study will also differentiate perpetrators of IPV by the severity of violence they perpetrated (i.e., severe and minor IPV).

The perpetration of IPV is a global issue with varying negative consequences including negative mental health outcomes, suicidal ideation, physical impairments, and death. As current mandated programs have not been found to be effective in reducing the rates of IPV, researchers have embarked in investigating other facets to consider. Significant research has shown both

emotion regulation and empathy to be risk factors of violence, therefore their influence when investigating IPV cannot be ignored. While researchers have investigated numerous different variables in relation to IPV, few studies have investigated the role facial emotion recognition deficits play in perpetration of IPV and how empathy and emotion dysregulation deficits affect the relationship between recognition of facial emotion expressions and perpetration of intimate partner violence. Finally, as IPV perpetrators are known to be a heterogeneous group, continued investigation of differences between both the violent and not violent groups as well as between perpetrator subtypes, including GV/FO and minor/severe classification, is necessary.

CHAPTER III

STATEMENT OF PURPOSE

This study aims to further understand the role facial emotion recognition abilities play in perpetration of intimate partner violence. We aim to determine if differences in facial emotion recognition abilities exist among men with a history of perpetrating violence against their partners and men who have never perpetrated violence against their partners. The study also aims to determine if emotion regulation and empathy moderate the relationship between facial emotion recognition abilities and perpetration and severity of violence. Finally, the study aims to investigate differences in perpetrator subtypes of these same variables.

Hypotheses

Research Question 1

Will differences in facial emotion recognition abilities be found in those with a history of IPV perpetration and those with no history of IPV perpetration?

Hypothesis 1 a: Individuals with a history of IPV perpetration will receive lower scores in a measure of facial emotion recognition abilities as compared to a non-violent control group.

Hypothesis 1 b: Participants with a history of perpetrating IPV will receive lower scores in detecting negative affects (sadness, anger, fear, disgust) as compared to the non violent community sample participants.

Research Question 2

Do differences in facial emotion recognition abilities exist among different types of perpetrators of IPV?

Hypothesis 2 a: Perpetrators categorized as Generally Violent will not perform as well in the facial emotion recognition measure as compared to Family only group.

Hypothesis 2 b: Perpetrators of IPV who self-report to have committed higher levels of aggression against their partners will be less able to accurately read facial expressions as compared to those who self-report to have perpetrated less severe levels of violence towards their intimate partner.

Research Question 3

What are the interrelations among empathy, emotion regulation, and perpetration of violence?

Hypothesis 3 a: Individuals with a history of perpetrating IPV will receive higher scores in measures of emotion regulation difficulties and lower scores in measures of empathy compared to those with no history of IPV perpetration .

Hypothesis 3 b: Individuals with a history of perpetrating severe IPV will receive higher scores in measures of emotion regulation difficulties and lower scores in measures of empathy compared to those with minor IPV perpetration.

Hypothesis 3 c: Perpetrators categorized as generally violent will receive higher scores in measures of emotion regulation difficulties and lower scores in measures of empathy compared to the family only perpetrators.

Research Question 4

How will emotion regulation and empathy affect the relation between facial recogntion abilities and IPV perpetration of violence?

Hypothesis 4 a: Emotion regulation will moderate the association between facial recognition abilities and IPV.

Hypothesis 4 b: Empathy will moderate the association between facial recognition abilities and IPV.

CHAPTER IV

METHODOLOGY

Participants

Participants were recruited from the Rio Grande Valley, a region located in the southern

portion of Texas bordering Mexico. This region in Texas consists of four counties where the

percentage of Hispanic identifying residents range from 88.1% up to 96.3%. The inclusion

criteria for all participants included was 18 years old or older and having a history of being in a

relationship for a minimum of 6 months.

Control participants were recruited through flyers distributed around local community

centers and churches throughout the RGV. The flyer contained information related to their

participation in the study including a list of measures they were required to fill out as well as

details related to the opportunity to win a one of four 25-dollar gift cards. The principal

investigator's (PI) and co-principal investigator's (Co-PI) contact information were included on

the flyer. Interested participants contacted the PI or Co-PI via email or phone and a date and time

to meet via Zoom was established.

The experimental sample participants were recruited from anger management and BIPP

meetings. The Co-PI attended multiple online anger management and BIPP meetings where an

announcement of the opportunity to participate in the research study was given. Attendees of the

meeting were informed that their participation would include completing multiple self-report

measures related to IPV, empathy, emotion regulation, questions related to their relationship history as well as the completion of a facial emotion recognition measure. Participants were also informed of the confidentiality of the study, and they were reassured their decision to participate in the study would not affect their participation in the program they were attending. The Co-PI displayed the flyer containing information related to participation in the study during the presentation allowing the participants to access and take note of the contact information. Interested participants contacted either the PI or the Co-PI via email or telephone and a date and time to meet was established.

A total of 32 participants attending the BIPP groups agreed to participate in the study. Of these participants, one participant was excluded from the analysis as he discontinued his involvement in the study before its completion and an additional participant was excluded due to indicating assaulting a family member and not a romantic partner. A total of 30 participants were recruited from community centers. Of the 30 participants recruited, one participant was excluded due to endorsing a history of physical violence against his romantic partner. The average age for participants in the control group ($n = 29$) was 30.24 years ($SD = 9.87$) while the average age of the experimental sample ($n = 30$) was 38.13 years old ($SD = 10.01$). All experimental sample participants ($n = 30$) identified as Hispanic/Latino, while 96.6 % ($n = 28$) of the control sample identified as Hispanic/Latino while 3.45 % ($n = 1$) identified as Black/African American. All 59 participants identified as Heterosexual. Within the control group, 51.7 % ($n = 15$) indicated being involved in a committed dating relationship, engaged, or married, 3.4% ($n = 1$) reported being single, and 44.8% ($n = 13$) reported being divorced. As for the experimental group, 60 % ($n = 18$) reported being involved in a committed dating relationship, engaged, or married, 33.3% ($n = 10$) noted being single, and 6.7% ($n = 2$) indicated being divorced. In addition, 75.9% ($n = 22$) of

the control group and 66.7% ($n = 20$) of the experimental group reported being with their current

or last partner for more than two years, 6.9% ($n = 2$) of the control group and 13.3% ($n = 4$) of

the experimental group indicated being with their current or last partner for one to two years,

13.8% ($n = 4$) of the control group and 13.3% ($n = 4$) of the experimental sample reported being

with their current or previous partner for six months to one year, and 3.4% ($n = 1$) of the control

group, and 6.7% ($n = 2$) of the experimental sample indicated being with their current or last

partner for one to six months.

Measures

Demographics

Participants completed a demographic survey that consisted of questions inquiring on

their age, sexual orientation, ethnicity, employment status, socioeconomic status, relationship

status, relationship length, and whether they lived with their partner.

Ekman 60 Faces Test

The Ekman 60 Faces Test (E60FT) uses a range of photographs from the Ekman and

Friesen series of *Pictures of Facial Affect* to assess recognition of facial expressions of basic

emotions (Ekman & Friesen, 1976). The Ekman & Friesen (1976) *Pictures of Facial Affect* is

amongst the most widely utilized and validated facial expressions in research which has been

validated across cultures. Preceding the commencement of the 60 test trials participants

completed 6 practice items. A total of 60 black and white pictures depicting the faces of 10

individuals (4 male and 6 female) each displaying six basic emotions (happiness, sadness,

disgust, fear, surprise, and anger) were displayed to the participants. The faces were presented

one at a time for 5 seconds. Following the image, participants were given unlimited amount of

time to decide the emotion that best matched the image they previously observed. The maximum

test score indicating best performance is 60 for all six emotions and 10 for each basic emotion. To further examine facial emotion recognition abilities between IPV and non-IPV participants, total female and male scores were also assessed. For each emotion, the total score for the recognition of female faces was 6 and the total score for the recognition of male faces was 4. To assess 'negative' affects, four subscales of the EK60 (i.e., fear, anger, sadness, and disgust) were added together to create a new variable labeled negative affects. Prior to running testing, participants were assessed for understanding of the words anger, disgust, fear, happiness, sadness, and surprise by asking them to provide examples of each emotion with questions such as: "Tell me about a time you felt happiness, sadness, etc." Participants unable to give an example of the basic emotion were excluded from the study. No participants were excluded for this reason. The E60FT was found to have a good split-half reliability in the total scores ($\alpha > .62$) in a sample of 50 individuals (Young et al., 2002). The internal reliability of the total score was reliable at $\alpha = .65$.

Deficits in Emotion Regulation

Emotional regulation was be measured using the Difficulties in Emotion Regulation Scale a comprehensive, global measure of ER (DERS; Gratz & Roemer, 2004). DERS is a 36-item questionnaire with six subscales: nonacceptance (reflecting nonacceptance of emotional responses); goals (reflecting difficulties engaging in goal-directed behavior in stressful situations); impulse (reflecting impaired ability to control impulsive behaviors when distressed); awareness (reflecting lack of emotional awareness); strategies (reflecting limited access to different er-strategies); and clarity (reflecting lack of emotional clarity). Each question requires the respondent to select how each item on the questionnaire applies to them on a 5-point Likert scale ranging from 1-5 (1 almost never, 2 sometimes, 3 about half the time, 4 most of the time,

and 5 almost always). Participants can score from 36 to 180 with higher scores reflecting more difficulties in emotion regulation. DERS was found to have a very reliable internal consistency (α = .93) and reliable internal consistency in all subscales with a Cronbach's α > .80 for each subscale and the overall DERS has demonstrated good test–retest reliability over a 4–8-week period (Gratz & Roemer, 2004). In the current study, internal consistency for the total measure was very reliable at a .94 while the six subscales Cronbach alpha ranged from α = .83 to α = .94 indicating they ranged from reliable to very reliable.

Interpersonal Reactivity Index

Empathy was measured using the Interpersonal Reactivity (IRI; Davis, 1980). The Interpersonal Reactivity Index is a 28-item questionnaire that has four 7 item subscales of empathy (i.e., perspective taking, fantasy, empathic concern, and personal distress) (Gery et al., 2009). Perspective taking and fantasy measure the cognitive facet of empathy, while empathic concern and personal distress are thought to identify the affective facet of empathy. The perspective taking subscale assesses one's ability to adopt the viewpoint of another person. The fantasy subscale measures one's tendency to identify with fictional characters in movies, television shows, or books. The empathetic concern subscale identifies feelings of sympathy or compassion for another person. The personal distress subscale assesses self-oriented feelings of distress or anxiety in reaction to negative emotions of another (Gery et al., 2009). Each item on the IRI is scored on a 5-point Likert scale ranging from A (does not describe me well) to E (describes me very well). Scores can range from 0 to 112 with higher scores indicating higher levels of empathy (Brown, Harkins, & Beech, 2012). Satisfactory internal (from 0.71 to 0.77) and test–retest (from 0.62 to 0.71) reliabilities have been reported for the four subscales (Davis,

1983). Internal consistency in the current study for the four subscales ranged from α =.7 to α =.81 indicating the internal consistency was reliable.

Conflict Tactic Scale 2

Physical assault against a romantic partner was measured using the Physical Assault Scale of the Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The CTS2 is the revised version of the Conflict Tactics Scale (Straus, 1979, 1990a). The Physical Assault Scale consists of 12 items that assesses the existence and frequency of physically abusive acts in the past year. It is designed to be understood by persons with a sixth-grade reading ability. Respondents are asked to report in a 1 year period whether they engaged or experienced each act with the following response options: (1= "Once in the past year", 2= "Twice in the past year", 3= "3-5 times in the past year", 4= "6-10 times in the past year", 5= "11-20 times in the past year", 6= "More than 20 times in the past year", 7= "Not in the past year, but it did happen before", or 0= "This has never happened"). Straus et al. (1996) found good internal consistency for the Physical Assault Scale with a Cronbach's alpha coefficient of 0.86. In the present study, the internal consistency coefficient was .95, demonstrating very good internal consistency.

In the current study, the twelve items served to assess for a history of IPV perpetration and differentiate between indication of severe or minor IPV perpetration. Participants reporting a history of physical assault perpetration against their partner either in the last year or in the past on any of the 12 items received a score of one where participants who selected "This has never happened" for all 12 items received a score of zero. Control participants who received a score of one were excluded from the main analysis as this indicated a history of IPV perpetration.

The experimental sample was further categorized as having perpetrated minor or severe physical assault using Straus (2004) categorization. The Straus (2004) categorization classifies five items (i.e., "Threw something at my partner that could hurt", "Twisted my partner's arm or hair", "Pushed or shoved my partner", "Grabbed my partner", and "Slapped my partner") as minor physical assault items and seven items (i.e., "Used a knife or gun on my partner" "Punched or hit my partner with something that could hurt", "Choked my partner", "Slammed my partner against the wall", "Beat up my partner", "Burned or scaled my partner on purpose", and "Kicked my partner") as severe physical assault items. Endorsing an incident of abuse occurring in the last year or prior to the last year for a minimum of one item of the severe physical assault items lead to the classification of severe IPV perpetration group while those who endorsed no history of severe abuse were categorized in the minor IPV perpetration group. Experimental participants who received a score of zero for all 12 items associated with perpetrating physical aggression against their romantic partner (n =2) were excluded from the analysis assessing between severe and minor subtypes of perpetrators as their categorization could not be made.

Generally Violent and Family Only Typology

Perpetrators of IPV were classified into two subtypes of perpetrators (FO or GV) using the categorization used by Cantos, Goldstein, Brenner, O'Leary, and Verborg (2015). Information related to aggressive behaviors towards others was collected using self-reported history of violence and Hidalgo County Records Inquiry. Per the Cantos, Goldstein, Brenner, O'Leary, and Verborg (2015) categorization, participants were categorized as GV using their arrest records and/or self-reported aggression where they engaged in at least one or more aggressive acts other than IPV offenses. These offenses or acts included assault, battery, or sexual offenses against

nonintimate partners, armed robbery, or disorderly conduct charges (when non partner violence is not evident). Participants were categorized as FO if they denied a history of violence against others other than IPV offenses. In this study, participants' arrest records and files were coded by three psychology graduate students who were trained by the principal investigator (PI) and a graduate student who previously used the categorization system. After independently rating the participants, the Krippendorff's alpha test was used (Hayes & Krippendorff, 2007) to estimate the inter-coder reliability. The results show that the inter-coder reliability was perfect (a = 1.0) (i.e., the three coders agreed on the categorization of all experimental participants).

Procedure

During the initial contact, participants were informed they would need to utilize a computer, the zoom application, and would need to work in a quiet and secure location where they would not be disturbed throughout the testing. Next, the PI or Co-PI provided the participant a meeting time, zoom meeting ID, password, and individualized ID. The Co-Pi investigator's initials and a number (E.g., MM01) was utilized for the control group ID, while the experimental group participants were given the acronym of experimental group 'EG' along with a number (E.g., EG01). The PI or Co-PI also gathered the participants first name, last name and date of birth which was kept in an encrypted excel file. To secure confidentiality, zoom meetings were password protected and the waiting room was enabled to allow only the participant with access to the link and password into the meeting. Once the participant logged into the Zoom meeting, the proctor enabled the *screen share* option on the zoom preferences which allowed the participant to view the examiners screen. Next, the *remote-control* option was enabled which allowed the participant to manipulate the proctor's computer. The researcher then discussed and explained the consent form. Once consent was obtained, the first item on the

survey asked participants to type in their assigned ID number into a text box. Participants were then presented with screening questions designed to ensure that all participants were over 18 years of age, had been involved in a romantic relationship for a minimum of 6 months, and were not diagnosed with a mental health disorder that would prevent them from participating in the study. Once all screening questions were answered successfully, participants then completed the demographic questionnaire, E60FT, DERS, IRI, and CTS2. Participants in the experimental sample completed additional questions related to aggressive acts against their partner or others using Cantos, Goldstein, Brenner, O'Leary, and Verborg (2015) categorization of FO or GV subtypes. Once the measures were completed, participants were asked to enter their phone number and preferred method of contact into an additional separate Qualtrics link which was later used to notify the 4 winners of the 25-dollar gift card. Criminal records were later accessed and collected from the Hidalgo Country Records Inquiry, a public website.

Data Analysis

Listwise deletion was utilized to address missing data. All statistical analyses were conducted using SPSS version 29 software. First, descriptive statistics were computed for all demographic variables for both the control and experimental sample as well as the severe and minor subgroups. Given the presence of outliers, the suggestion of de Winter, Gosling, and Potter (2016) was taken and Spearman's rank-order correlations were run to examine the relationships between demographic variables (i.e., age) and study variables (e.g., facial recognition sum and subscale scores, emotion dysregulation scores, and empathy scores) for the experimental, control, and total sample. Independent sample t-tests were conducted to determine if age was significantly different between the experimental and control group as well as the minor and severe IPV subtypes.

Next, a series of univariate and multivariate analysis were conducted to examine possible differences between individuals with a history of perpetrating IPV (experimental group) versus the non-violent subgroup (control group) in their scores on a measure of facial emotion recognition, empathy, and emotion regulation. Age was used as a covariate when conducting all univariate and multivariate analyses conducted between the experimental and control sample as an independent sample t-test revealed it was significantly different between the groups.

In addition, a series of univariate and multivariate analysis were conducted to examine possible differences between minor IPV classification and severe IPV classification in their scores on a measure of facial emotion recognition, empathy, and emotion regulation. Age was used not used as a covariate when conducting univariate and multivariate analysis between the severe and minor IPV subgroups as an independent sample t-test revealed it was not significantly different between the subgroups.

Furthermore, a series of exploratory univariate and multivariate analyses were conducted to examine possible differences between the non-violent participants and the severe IPV perpetrators in their scores on a measure of facial emotion recognition, empathy, and emotion regulation. Age was used as a covariate when conducting all univariate and multivariate analysis conducted between the severe IPV group and control sample as an independent sample t-test revealed it was significantly different between the groups.

As the samples were relatively small, we used Dwivedi, Mallawaarachchi, and Alvarado (2017) suggestion and calculated bootstrapped confidence intervals for the pairwise contrasts, based on 5,000 bootstraps. The initial analysis was reported for all analysis as bootstrapping did not cause differing results for any analysis conducted.

Lastly, the PROCESS macro for SPSS was utilized to conduct moderation analyses. Three separate moderation analyses (Model 1) were conducted in PROCESS v4.3. All variables were treated as manifest/observed variables. The magnitude of the indirect effects was examined using the product-of-coefficient approach to calculate standard errors of the indirect effects. In the present study, a 95% confidence interval not containing a zero was considered statistically significant. The models analyzed empathy and emotion regulation moderating the association between the ability to recognize facial expressions and violence perpetration. Using the total sample, the first moderation model evaluated recognition of facial expressions of fear and target group membership (IPV or non-perpetration of IPV) as moderated by the emotion regulation subscale, impulse control, while controlling for age. Next, using those in the control group and severe IPV classification, an exploratory moderation model evaluated recognition of negative facial affect and target group membership (severe IPV or non-perpetration of IPV) as moderated by the emotion regulation subscale, impulse control, while controlling for age. Finally, using the those in the control group and severe IPV classification, an additional exploratory moderation model evaluated recognition of facial expressions overall and target group membership (severe IPV or non-perpetration of IPV) as moderated by the empathy measure subscale, empathetic concern, while controlling for age. No analyses were conducted using the GV and FO subgroup as all participants, except one, were categorized as GV.

CHAPTER V

RESULTS

Descriptive statistics for the clincal and control sample demographics are depicted in

Table 1 in Appendix A.

Results of Spearman's Rank-Order

Spearman's rank-order correlations were run to examine the relationships between study

variables (i.e., facial recognition sum, total subscale scores, emotion dysregulation scores, and

empathy scores) and demographic variables (i.e., age) within the total participant sample,

experimental group sample, and control group depicted in Tables 2 – 4 in Appendix A. Table 2

illustrates the Spearman's rank-order correlations conducted between the demographic variable

of interest (e.g., age) and study variables (i.e., facial recognition sum and subscale scores,

emotion dysregulation scores, and empathy scores) for the total sample collected ($n = 59$). Age

was found to be negatively correlated with the Interpersonal Reactivity Index (IRI) subscale,

personal distress, ($r_s = -.26$, n = 59, p = .049) and the Difficulties in Emotion Regulation Scale

(DERS) subscales: awareness ($r_s = -.26$, $n = 59$, $p = .046$), strategies ($r_s = -.27$, $n = 59$, $p = .036$),

and clarity ($r_s = -.33$, $n = 59$, $p = .011$). In addition, the fear score of the EK60 measure was

found to be significantly correlated with the IRI subscale personal distress, $r_s = .27$, $n = 59$, $p =$

.036. Finally, the IRI subscale, personal distress, was found to be significantly correlated with

the DERS subscales: goals ($r_s = .33$, $n = 59$, $p = .010$), impulse control ($r_s = .27$, $n = 59$, $p =$

.036), awareness ($r_s = .42$, n = 59, $p < .001$), strategies ($r_s = .36$, $n = 59$, $p = .005$), clarity ($r_s = .56$, $n = 59$, $p < .001$), and the DERS total score ($r_s = .52$, $n = 59$, $p < .001$).

Two additional Spearman's rank-order correlation analysis were conducted between the demographic variable of interest (i.e., age) and study variables (i.e., facial recognition sum and subscale scores, emotion dysregulation scores, and empathy scores) for the control and experimental samples (Table 3 and Table 4 respectively). The Spearman's rank-order correlation conducted on the control sample depicted in Table 3 revealed age was negatively correlated with the IRI subscale, personal distress, ($r_s = -.41$, $n = 29$, $p = .027$), as well as the DERS subscales; goals ($r_s = -.38$, $n = 29$, $p = .040$), impulse ($r_s = -.38$, $n = 29$, $p = .040$), strategies ($r_s = -.498$, $n = 29$, $p = .006$), and clarity ($r_s = -.58$, $n = 29$, $p = .001$), as well as the DERS total score ($r_s = -.496$, $n = 29$, $p = .006$). The IRI subscale perspective taking was found to be significantly related to the DERS subscale clarity ($r_s = -.38$, $n = 29$, $p = .043$). While the IRI subscale empathetic concern was found to be negatively correlated with the DERS subscales: goals ($r_s = -.37$, $n = 29$, $p = .046$), awareness ($r_s = -.46$, $n = 29$, $p = .012$), and clarity ($r_s = -.54$, $n = 29$, $p = .002$), as well as the DERS total score ($r_s = -.44$, $n = 29$, $p = .017$). Finally, the IRI subscale, personal distress, was found to be related to the DERS total score ($r_s = .52$, $n = 29$, $p = .004$) and the DERS subscales: strategies ($r_s = .52$, $n = 29$, $p = .004$) and clarity ($r_s = .56$, $n = 29$, $p = .002$).

The Spearman's rank-order correlation conducted on the experimental group depicted in Table 4 revealed the fear subscale score of the EK60 measure was positively correlated with the IRI subscale, personal distress ($r_s = .37$, $n = 30$, $p = .047$) but negatively correlated with the DERS subscale, nonacceptance ($r_s = -.39$, $n = 30$, $p < .040$). In addition, the IRI subscale, personal distress, was found to be positively correlated with the DERS subscales: goals ($r_s = .43$, n = 30, $p = .017$), impulse control ($r_s = .50$, $n = 30$, $p = .005$), awareness ($r_s = .39$, $n = 30$, $p =$

.031), and clarity (r_s = .59, n = 30, p < .001), as well as the DERS total score (r_s = .57, n = 30, p < .001).

Independent sample t-tests were conducted between the experimental and control group as well as the severe and minor IPV subgroups. An independent-samples t-test (α = .05, two-tailed) revealed age was significantly different between the experimental group (M = 38.13, SD = 10.01) and control group (M = 30.24, SD = 9.87), t(57) = -3.05, p = .003, Cohen's d = -.794. As age was found to be significantly different between the groups, it was controlled for in all the main analysis between the control and experimental sample. An independent-samples t-test (α = .05, two-tailed) revealed age was not significantly different between the severe IPV group (M = 38.05, SD = 9.47) and minor IPV group (M = 39.57, SD = 12.67), t(26) = .34, p = .737, Cohen's d = .148, hence it was not controlled for in the analyses between these subgroups.

Research Question 1

To examine Research Question 1 ("Will differences in facial emotion recognition abilities be found in those with a history of IPV perpetration and those with no history of IPV perpetration?") a series of univariate analyses were conducted with the groups (experimental and control) as the independent variable and facial emotion recognition score total and subscale scores (i.e., happiness, sadness, disgust, fear, anger, surprise) as the dependent variable with age as the covariate (α = .05). Means and standard deviations for the experimental and control groups are depicted in Table 5 in Appendix A.

Initially, a one-way between subjects ANCOVA was conducted with groups (experimental and control), as the independent variable and the total score on the EK60 as the dependent variable while controlling for age (α = .05). The results revealed there was no significant effect of having a history of IPV perpetration on their total score on the EK60 after

controlling for age, $F(1, 56) = 2.21$, $p = .14$, $\eta^2 = .038$. Estimated marginal means were slightly higher for the control group ($M = 46.98$, $SE = .94$) than the experimental group ($M = 44.96$, $SE = .92$) but these were not significantly different suggesting the experimental and control group do not demonstrate differences in identifying emotions overall.

Additional ANCOVA's were conducted using groups (experimental and control) as the independent variable and the different subscales of facial recognition of emotions (i.e., anger, disgust, sadness, surprise, fear, and happiness) as the dependent variables while controlling for age ($\alpha = .05$). Similarly, no statistical differences were found between experimental and control sample in the subset of emotion for anger $F(1, 56) = .06$, $p = .81$, $\eta^2 = .001$, disgust $F(1, 56) = .55$, $p = .46$, $\eta^2 = .01$, sadness $F(1, 56) = .10$, $p = .75$, $\eta^2 < .01$, surprise $F(1, 56) = .01$, $p = .92$, $\eta^2 = < .001$, and happiness $F(1, 56) = .23$, $p = .64$, $\eta^2 < .01$ when controlling for age. However, differences were found between groups when considering fear $F(1, 56) = 4.32$, $p < .05$, $\eta^2 = .07$ while controlling for age. Estimated marginal means were higher for the control group ($M = 6.61$, $SE = .41$) than the experimental group ($M = 5.38$, $SE = .40$) indicating the control group performed better that the experimental group in detecting expressions of fear.

To further understand the differences in recognition of facial expressions of fear between the experimental and control groups, analyses were conducted to assess if scores of recognition of fear differed by the gender of the image presented. To assess this, two one-way between subjects ANCOVA's were conducted with groups (experimental and control) as the independent variable and the score of fear for each gender as the dependent variable while controlling for age ($\alpha = .05$). In the first analysis the results revealed there was no significant effect of having a history of IPV when only considering male expressions of fear $F(1, 56) = .65$, $p = .43$, $\eta^2 = .01$, when controlling for age. However, differences were found between groups when considering

facial recognition of female fear $F(1, 56) = 6.50$, $p = .014$, $\eta^2 = .10$ while controlling for age. Estimated marginal means were higher for the control group ($M = 3.89$, $SE = .27$) than the experimental group ($M = 2.91$, $SE = .26$) indicating the control group performed better that the experimental group in detecting expressions of female fear when considering age difference.

Next, we sought to examine whether differences existed between those who have a history of perpetrating IPV and the non-violent group in detecting 'negative' affects (i.e., fear, anger, sadness, and disgust) as a whole. A univariate analysis was conducted with the groups (experimental and control) as the independent variable and the cluster of 'negative' emotions (i.e., sadness, disgust, fear, anger) as the dependent variable with age as a covariate ($\alpha = .05$). The results revealed there was no significant effect of the having a history of perpetrating IPV on their 'negative' emotions score, $F(1, 56) = 2.586$, $p = .113$, $\eta^2 = .044$. While the estimated marginal means for the control group ($M = 28.17$, $SE = .83$) were higher than the experimental group ($M = 26.24$, $SE = 26.24$), the differences were not statistically significant.

Research Question 2

Further, we sought to investigate research question 2 ("Do differences in facial emotion recognition abilities exist among different types of perpetrators of IPV?").

One method of grouping perpetrators that was of interest for the current study was GV and FO subtypes. It was predicted those categorized as GV would receive lower scores on the facial emotion recognition measure as compared to the FO subgroup. Utilizing Cantos, Goldstein, Brenner, O'Leary, and Verborg (2015) categorization method, all but one participant fell under the GV subtype (n = 29) which precluded conducting analyses between these subgroups.

Next, we investigated whether differences in facial emotion recogntion abilities existed between perpetrators with differing histories of violence perpetration (severe versus minor perpetration). Two participants were removed from the experimental sample for this analysis as they denied engaging in any of the behaviors of IPV perpetration in all 12 items of the Physical Assault CTS-2 items. Of the remaining IPV sample (n = 28), seven endorsed perpetrating minor violence against their romantic partner, and 21 reported perpetrating severe IPV throughout the 12 items of the physical assault CTS-2 items. To assess whether differences existed between these subtypes of IPV perpetrators, a series of univariate analyses were performed using minor and severe IPV perpetration as the independent variable and EK60 score total and the six emotion recogntion subscores as the dependent variable.

Initially, to investigate differences between these subtypes of perpetrators, a one-way between subjects ANCOVA was conducted with differing IPV severity (severe and minor), as the independent variable and the total score on the facial recognition measure as the dependent variable (α = .05). The results revealed that there was no significant effect of the differing severity of IPV on the EK60 total score, $F(1, 26) = 3.62$, $p = .07$, $\eta^2 = .12$. Estimated marginal means were slightly higher for the minor severity group ($M = 47.86$, $SE = .1.82$) than the severe IPV group ($M = 43.86$, $SE = 1.05$) but not statistically different. Additional ANOVA's were conducted using severe and minor IPV subgroups as the independent variable and the differing subscales of emotions (i.e., anger, disgust, sadness, surprise, fear, and happiness) as the dependent variables (α = .05). No statistical differences were found between the severe and minor subgroups in their results on recognition of anger $F(1, 26) = 1.135$, $p = .296$, $\eta^2 = .04$, disgust $F(1, 26) = 1.43$, $p = .24$, $\eta^2 = .05$, surprise $F(1, 26) = .38$, $p = .54$, $\eta^2 = .01$, fear $F(1, 26) = .24$, $p = .63$, $\eta^2 < .00$, and happiness $F(1, 26) = 1.23$, $p = .28$, $\eta^2 = .045$. However, the groups

were significantly different in facial recognition of sadness $F(1, 26) = 4.72$, $p = .039$, $\eta^2 = .15$. Estimated marginal means were higher for the minor IPV group ($M = 8.43$, $SE = .72$) as compared to the severe IPV group ($M = 6.62$, $SE = .42$). The minor IPV group performed better than the severe IPV group in detecting expressions of sadness.

To further assess the differences in recognition of facial expressions of sadness between perpetrators with differing histories of violence perpetration (severe versus minor perpetration), analyses were conducted to assess if the recognition of sadness scores differed by the gender of the image presented. To assess this, two one-way between subject ANOVA's were conducted with groups (severe IPV and minor IPV) as the independent variable and the score of sadness for each gender as the dependent variables ($\alpha = .05$). In the first analysis the results revealed there was no significant effect of having a history of perpetrating either minor or severe IPV when only considering female expressions of sadness $F(1, 26) = 2.0$, $p = .169$, $\eta^2 = .071$. However, differences were found between the severe IPV and minor IPV groups in recognition of facial expressions of male sadness $F(1, 26) = 5.534$, $p = .026$, $\eta^2 = .175$. Estimated marginal means were higher for the minor IPV group ($M = 3.00$, $SE = .456$) than the severe IPV group ($M = 1.76$, $SE = .263$). The results indicate those who perpetrated a minor level of IPV performed better than those who had a history of perpetrating severe IPV in detecting expressions of sadness in men.

Next, we sought to examine whether differences existed between perpetrators with differing histories of violence perpetration (severe versus minor perpetration) in detecting 'negative' affects. A univariate analysis was conducted with the differing groups (severe IPV and minor IPV) as the independent variable and the cluster of 'negative' emotions (i.e., sadness, disgust, fear, anger) as the dependent variable ($\alpha = .05$). The results revealed there was no

significant effect of the having a history of perpetrating severe or minor IPV on their 'negative' emotions score $F(1, 26) = 3.135$, $p = .088$, $\eta^2 = .108$. However, when assessing the 'negative' emotions expressed when grouped by gender, significant differences were found $F(1, 26) = 4.27$, $p = .049$, $\eta^2 = .141$ in detecting male 'negative' emotions but not female 'negative' emotions. The estimated marginal means for the male 'negative' emotions cluster was higher for the minor IPV group ($M = 11.286$, $SE = .76$) than the those that fell under the severe IPV subgroup ($M = 9.48$, $SE = .44$). The minor IPV group performed better than the severe group in detecting negative expressions in male images.

Finally, as significant differences in recognizing emotions were found between the IPV perpetrators and the control group well as when comparing the severe and minor perpetration subgroups, exploratory analyses were conducted to assess whether these same differences would be found when examining the non-violent control group (n = 29) and only those in the experimental group who perpetrated severe levels of IPV (n = 21). A series of univariate analysis were conducted with the differing groups (severe IPV perpetrators and control) as the independent variable and the EK60 total score and subscale scores (i.e., happiness, sadness, disgust, fear, anger, surprise) as the dependent variable. As an independent sample t-test ($\alpha = .05$, two-tailed) revealed age was significantly different between the severe IPV perpetrators ($M = 38.05$, $SD = 9.47$) and control group ($M = 30.24$, $SD = 9.87$), $t(48) = -2.81$, $p = .007$, Cohen's $d = -.804$, it was controlled for in all the main analysis between the control and severe IPV group.

Initially, a one-way between subjects ANCOVA was conducted with groups (severe IPV perpetrators and control), as the independent variable and the total score on the EK60 as the dependent variable while controlling for age ($\alpha = .05$). The results revealed a significant effect of having a history of perpetrating severe IPV on their score on the EK60 when controlling for age,

$F(1, 47) = 6.05, p = .018, \eta^2 = .114$. Estimated marginal means were higher for the control group

($M = 47.05, SE = .92$) than the severe IPV group ($M = 43.41, SE = 1.09$) indicating the control

group was better at detecting facial expressions overall as compared to the severe IPV group.

Additional ANCOVA's were conducted with groups (severe IPV perpetrators and control) as the

independent variable and the differing subscales of facial recognition of emotions (i.e., anger,

disgust, sadness, surprise, fear, and happiness) as the dependent variables while controlling for

age ($\alpha = .05$). No statistical differences were found between severe IPV group and control

sample in any of the six subsets of emotion.

Next, explortory analyses were conducted to further asses if facial emotion identification

scores between perpetrators of severe levels of violence and the non-violent control group

differed by the gender of the image presented. A series of univariate analysis were conducted

with groups (severe IPV perpetrators and control) as the independent variable and facial emotion

recognition score total and subscale scores (i.e., happiness, sadness, disgust, fear, anger, surprise)

for both male and female images independently as the dependent variables with age as the

covariate ($\alpha = .05$).

First, a one-way between subjects ANCOVA conducted with groups (severe IPV

perpetrators and control) as the independent variable and the male facial emotion recognition

score total as the dependent variables revealed no significant difference between the groups, $F(1,$

$47) = 3.50, p = .068, \eta^2 = .07$ while controlling for age. Similarly, a series of one-way between

subjects ANCOVA's with the groups (severe IPV perpetrators and control) as the independent

variable and subscale scores displaying male images (i.e., happiness, sadness, disgust, fear,

anger, surprise) as the dependent variables while controlling for age also revealed no significant

differences. When considering only the recognition of female expressions, a one-way between

subjects ANCOVA with groups (severe IPV perpetrators and control) as the independent variable and female facial emotion recognition score total as the dependent variable, controlling for age, revealed a significant difference $F(1, 47) = 5.55, p = .023, \eta^2 = .106$. Estimated marginal means were higher for the control group ($M = 28.88, SE = .62$) than the severe IPV group ($M = 26.55, SE = .73$) indicating the control group was better at detecting facial expressions of women overall as compared to those with a history of perpetrating severe levels of IPV. When assessing the subsets of emotion, no statistical differences were found between the severe IPV perpetrators and control sample in detecting happiness, sadness, disgust, anger, and surprise in female expressions. However, a one-way between subjects ANCOVA with groups (severe IPV perpetrators and Control) as the independent variable and facial emotion recognition of fear in female expressions as the dependent variables, controlling for age, was found to be significantly different, $F(1, 47) = 5.56, p = .023, \eta^2 = .106$. Estimated marginal means were higher for the control group ($M = 3.86, SE = .24$) than the severe IPV group ($M = 2.96, SE = .28$). The findings indicate those who perpetrated more severe levels of IPV were less able to detect facial expression of fear in women as compared to the non-violent control group.

Additionally, further exploratory analyses were conducted to examine whether differences existed between those who have a history of perpetrating severe IPV and the non-violent control group in detecting 'negative' affects. A univariate analysis was conducted with the differing groups (severe IPV and control) as the independent variable and the cluster of negative emotions (i.e., sadness, disgust, fear, anger) as the dependent variable while controlling for age ($\alpha = .05$). The results revealed a significant effect of having a history of perpetrating severe IPV on the negative emotions score, $F(1, 47) = 6.134, p = .017, \eta^2 = .115$. Estimated marginal means were higher for the control group ($M = 28.20, SE = .81$) than for the severe IPV

subgroup ($M = 24.96$, $SE = .97$). The control group performed better than the severe IPV group in detecting negative expressions overall. In addition, when assessing only the negative emotions expressed by the male images, no significant differences were found $F(1, 47) = 3.50$, $p = .068$, $\eta^2 = .069$. However, when assessing the negative emotions expressed by the female images, significant differences were found $F(1, 47) = 5.50$, $p = .023$, $\eta^2 = .105$. Estimated marginal means were higher for the control group ($M = 17.51$, $SE = .53$) than for those that fell under the severe IPV subgroup ($M = 15.53$, $SE = .63$). The control group performed better than the severe IPV group in detecting 'negative' expressions in female images.

Research Question 3

Next, we sought to investigate the interrelations among empathy, emotion regulation, and perpetration of IPV. Initially, we investigated whether IPV perpetrators would endorse higher levels of emotion regulation difficulites as compared to the non-violent control sample on a measure used to assess emotion regulation difficulties as a whole and within six subscales that identify different aspects of emotion regulation (i.e., nonacceptance, goals, impulse, awareness, strategies, and clarity). Higher scores in the DERS total and subscales indicate more difficulty with emotion regulation as a whole and within each of the six different aspects of emotion regulation.

Initially, a one-way between subjects ANCOVA was conducted with groups (experimental and control) as the independent variable and the total score on the DERS as the dependent variable while controlling for age ($\alpha = .05$). The results revealed there were no significant effects of having a history of perpetrating abuse against a partner on their score on the DERS after controlling for age, $F(1, 56) = .34$, $p = .563$, $\eta^2 = .006$. Estimated marginal means for the experimental group ($M = 72.48$, $SE = 4.42$) and control group ($M = 68.67$, $SE = 4.499$) were

not significantly different. Next, a one-way multivariate analysis of covariance (MANCOVA) was conducted to examine differences in the DERS subscales (i.e., nonacceptance, goals, impulse, awareness, strategies, and clarity) between the experimental and control sample while controlling for age. Preliminary checks were performed to assess normality, linearity, homogeneity of variance-covariance matrices, and multicollinearity. Shapiro–Wilk test indicated all six dependent variables were not normally distributed in in both groups ($ps < .05$) indicating the assumption of univariate normality was violated. To examine the assumption of homogeneity of covariance matrices, Box's M test with an alpha level of 0.001 given Tabachnick and Fidell (2001) recommendation. Box's M Test showed no statistically significant difference among the variances ($p = .002$, $\alpha = .001$) indicating the assumption of homogeneity of covariance was met. All Mahalanobis distance values were below 22.46, supporting the assumption of multivariate normality. Box plots indicated multiple univariate outliers indicating the results of the MANCOVA should be taken with caution. Scatterplots indicated the dependent variables were linearly related in both experimental and control group. A correlation matrix was calculated to examine multicollinearity between the dependent variables. All variable combinations had correlations ranging between than 0.1 to 0.8 suggesting the assumption of multicollinearity was met. The assumptions for homogeneity of regression slopes was assessed by rerunning the MANCOVA while including interaction terms between the independent (grouping) variable and covariate (age). The model with covariate-independent variable was not significant $F(6, 50) = .865$, $p = .274$, implying the homogeneity of regression slopes assumption was met.

The main effect for group was significant, $F(6, 51) = 4.53$, $p < .001$, Wilks' Lambda = .65, $\eta^2 = .35$, suggesting the linear combination of the DERS subscales (i.e., nonacceptance,

goals, impulse, awareness, strategies, and clarity) was significantly different between the groups after controlling for age.

To further examine the differences between the experimental and control group on the DERS subscales (i.e., nonacceptance, goals, impulse control, awareness, strategies, and clarity), an analysis of covariance (ANCOVA) was conducted for each dependent variable while controlling for age ($\alpha = .05$). No statistical differences were found between the experimental and control group on the DERS subscales: nonacceptance $F(1, 56) = .21$, $p = .65$, $\eta^2 = .004$, goals $F(1, 56) = 1.16$, $p = .29$, $\eta^2 = .02$, awareness $F(1, 56) = .2.32$, $p = .13$, $\eta^2 = .04$, strategies $F(1, 56) = .36$, $p = .55$, $\eta^2 = .006$, and clarity $F(1, 56) = .77$, $p = .38$, $\eta^2 = .014$ when controlling for age. However, differences were found between groups when considering impulse control $F(1, 56) = 9.32$, $p = .003$, $\eta^2 = .14$ while controlling for age. Estimated marginal means were higher for the experimental group ($M = 11.18$, $SE = .84$) than the control group ($M = 7.4$, $SE = .85$) indicating the IPV perpetrators endorsed more difficulties with impulse control relative to the control group.

Next, we sought to investigate whether differences in empathy existed between the experimental and control sample. Higher scores on the IRI subscales indicate a higher level of a specific aspect of empathy. To examine the scores between the experimental and control group on the IRI subscales (i.e., perspective taking, fantasy, empathic concern, and personal distress), a series of ANCOVA's were conducted with each subscale of the IRI measure as the independent variable while controlling for age ($\alpha = .05$). No statistical differences were found between participants with a history of IPV and those with no IPV in their results on perspective taking $F(1, 56) = 1.08$, $p = .303$, $\eta^2 = .019$, fantasy scale $F(1, 56) = .33$, $p = .566$, $\eta^2 = .006$, empathetic

concern $F(1, 56) = 2.01$, $p = .161$, $\eta^2 = .035$, and personal distress $F(1, 56) = .095$, $p = .759$, $\eta^2 = .002$, when controlling for age.

Further, we sought to investigate whether individuals with a history of perpetrating severe IPV would be found to have more trouble in regulating their emotions as compared to those who endorsed reporting minor IPV perpetration. A series of one-way between subject's ANOVA's were conducted with severity perpetration (severe and minor) as the independent variable, and DERS total score and DERS subscales (i.e., nonacceptance, goals, impulse, awareness, strategies, and clarity) as the dependent variables. No statistical differences were found between participants with a history of minor and severe IPV in their results on DERS total score $F(1, 26) = .017$, $p = .896$, $\eta^2 = .001$, or any of the subscales: nonacceptance $F(1, 26) = .424$, $p = .52$, $\eta^2 = .016$, goals $F(1, 26) = .524$, $p = .476$, $\eta^2 = .02$, awareness $F(1, 26) = .416$, $p = .525$, $\eta^2 = .016$, impulse $F(1, 26) = 1.67$, $p = .208$, $\eta^2 = .060$, strategies $F(1, 26) = .005$, $p = .946$, $\eta^2 < .001$, clarity $F(1, 26) = 1.229$, $p = .278$, $\eta^2 = .045$.

Next, we sought to investigate whether individuals with a history of perpetrating severe IPV endorsed lower scores in measures of empathy compared to those with a minor IPV perpetration. A series of one-way between subjects ANOVA's were conducted with severity perpetration (severe and minor) as the independent variable, and IRI subscales (i.e., perspective taking, fantasy, empathic concern, and personal distress) as the dependent variables ($\alpha = .05$). No statistical differences were found between participants with a history of minor and severe IPV in their results on perspective taking $F(1, 26) = .592$, $p = .448$, $\eta^2 = .022$, fantasy scale $F(1, 26) = 1.799$, $p = .191$, $\eta^2 = .065$, empathetic concern $F(1, 26) = 3.086$, $p = .091$, $\eta^2 = .106$, and personal distress $F(1, 26) = 1.799$, $p = .191$, $\eta^2 = .065$.

One research hypothesis required an investigation of differing emotion regulation and empathy between the GV and FO subgroups of perpetrators, however there were not enough participants that were coded as Family Only perpetrators to allow for this analysis.

Further, exploratory analyses were conducted assessing whether empathy and emotion regulation scores would vary between the control and severe IPV group as their facial recognition scores were found to differ. Initially, a one-way between subjects ANCOVA was conducted with groups (severe IPV and control) as the independent variable and the total score on the DERS as the dependent variable while controlling for age ($\alpha = .05$). The results revealed there was no significant effect of having a history of perpetrating severe IPV on the total score on the DERS after controlling for age, $F(1, 47) = .85$, $p = .361$, $\eta^2 = .018$. Next, a one-way multivariate analysis of covariance (MANCOVA) was conducted to examine differences in the DERS subscales (i.e., nonacceptance, goals, impulse, awareness, strategies, and clarity) between the severe IPV group and control group after controlling for age. The main effect for the grouping was significant, Wilks' Lambda $= .57$, $\eta^2 = .43$, $F(6, 42) = 5.33$, $p < .001$, suggesting the linear combination of the DERS subscales (i.e., nonacceptance, goals, impulse, awareness, strategies, and clarity) was significantly different between the groups (i.e., severe IPV and control) after controlling for age.

To further examine the differences between the severe IPV group and control group on the DERS subscales (i.e., nonacceptance, goals, impulse, awareness, strategies, and clarity), an analysis of covariance (ANCOVA) was conducted for each dependent variable while controlling for age ($\alpha = .05$). No statistical differences were found between the severe IPV group and control group on the DERS subscales: nonacceptance $F(1, 47) = .297$, $p = .59$, $\eta^2 = .006$, goals $F(1, 47) = 1.40$, $p = .243$, $\eta^2 = .03$, awareness $F(1, 47) = .87$, $p = .351$, $\eta^2 = .018$, strategies $F(1, 47) =$

.465, $p = .498$, $\eta^2 = .010$, and clarity $F(1, 47) = .51$, $p = .479$, $\eta^2 = .011$ when controlling for age. However, differences were found in the results of the differing groups when considering impulse control $F(1, 47) = 13.94$, $p < .001$, $\eta^2 = .23$ while controlling for age. Estimated marginal means were higher for the severe IPV group ($M = 12.47$, $SE = 1.02$) than the control group ($M = 7.4$, $SE = .85$). The severe IPV perpetrators endorsed more difficulties with impulse control relative to the control group when taking age differences into account.

Next, we sought to investigate whether differences in empathy existed between those with a history of perpetrating severe levels of IPV and the non-violent control group. A series of ANCOVA's were conducted with the severe IPV and control group as the independent variable, with each subgroup of the IRI (i.e., perspective taking, fantasy, empathic concern, and personal distress) as the dependent variable while controlling for age ($\alpha = .05$). No statistical differences were found between participants with a history of perpetrating severe levels of IPV and control group in their results on perspective taking $F(1, 47) = 2.76$, $p = .103$, $\eta^2 = .056$, fantasy scale $F(1, 47) = .103$, $p = .75$, $\eta^2 = .002$, and personal distress $F(1, 47) = .078$, $p = .781$, $\eta^2 = .002$, when controlling for age. However, differences were found in the results of the different groups when considering empathetic concern $F(1, 47) = 4.42$, $p = .041$, $\eta^2 = .086$. Estimated marginal means were higher for the control group ($M = 22.02$, $SE = 1.085$) than the severe IPV group ($M = 18.35$, $SE = 1.29$) indicating perpetrators of severe IPV endorsed lower levels of empathetic concern relative to the control group.

Research Question 4

The current study also sought to investigate whether emotion regulation moderates the association between FAR abilities and IPV perpetration. The subcale of the emotion regulation subscale, impulse control, was of particular interest in the current analysis as this was found to be

signifcantly different between the experimental and control group. A univariate analysis conducted in the current study found recognition of facial expressions of fear to be the only subtype of emotion that was significantly different between the clincal and control group, this relationship was the only relationship that was examined to be moderated by impulse control. A moderation analysis, depicted in Figure 1 in Appendix B, was conducted using PROCESS to investigate the moderating effect of impulse control on the association between the recognition of facial expressions of fear and IPV (i.e., binary outcome of non-violent vs violent perpetration of IPV) while controlling for age.

The outcome variable for the analysis was target group membership (perpetration or non-perpetration of IPV) and the predictor variable for the analysis was facial recognition of fear, and the moderator variable evaluated for the analysis was impulse control.

The overall model of facial recognition of fear and impulse control when controlling for age was significant $X^2(4) = 23.449$, $p < .001$, McFadden R2 = .287, however, target group membership (perpetration or non-perpetration of IPV) was not affected by the interaction effect between facial recognition of fear and impulse control. $b = -.03$, $Z = -.46$, $p = .65$.

In addition, an exploratory univariate analysis revealed the emotion regulation subscale, impulse control, to be significantly different between the control group and the severely violent IPV group, and an exploratory univariate analysis revealed the severely violent IPV group and control group differed significantly in identifying negative facial affects. Therefore, a moderation analysis, depicted in Figure 2 in Appendix B, was conducted using PROCESS to investigate the the moderating effect of inmpulse control on the association between negative affect clusters and IPV (i.e., binary outcome of non-violent vs severly violent) while controlling for age.

The overall model of facial recognition of negative clusters and impulse control when controlling for age was significant $X^2(4) = 29.431$, $p < .001$, McFadden R2 = .433, however, target group membership (severe IPV or non-perpetration of IPV) was not affected by the interaction effect between facial recognition of negative cluster and impulse control. $b = .04$, $Z = 1.25$, $p = .21$.

Lastly, as neither four subsets of the empathy measure were found to be significantly different between the control and experimental group nor the severe IPV and minor IPV subgroups, moderation analysis were not conducted to examine whether empathy moderates the association between facial recogniton abilities and IPV perpetration within either the total sample or the total experimental sample. However, while conducting exploratory analysis, a univariate analysis revealed the IRI subscale, empathetic concern, to be significantly different between the severe IPV group and the control group. An additional exploratory univariate analysis found recognition of facial expressions overall to be significantly different between the severe IPV group and control group. Therefore, a moderation analysisism, depicted in Figure 3 in Appendix B, was conducted using PROCESS to examine the moderating effect of empathetic concern on the association between facial recognition and IPV (i.e., binary outcome of non-violent vs severly violent) while controlling for age. The outcome variable for the analysis was target group membership (severe IPV or non-perpetration of IPV), the predictor variable for the analysis was facial recognition score total, and the moderator variable evaluated for the analysis was empathetic concern.

The overall model of the facial recognition score and empathic concern when controlling for age was signficant $X^2(4) = 18.98$, $p < .001$, McFadden R2 = .279, however, target group

membership (severe IPV or non-perpetration of IPV), was not affected by the interaction effect between the facial recognition total score and empathic concern $b = -.009$, $Z = -.52$, $p = .60$.

CHAPTER VI

DISCUSSION

The current study sought to investigate whether facial affect recognition (FAR) abilities,

emotion regulation, and empathy differed between men with and without a history of

perpetrating IPV, as well as between subtypes of perpetrators. It was hypothesized perpetrators

of IPV would be less able to differentiate facial expressions correctly as compared to individuals

with no history of IPV perpetration. Further, this hypothesis was extended to subtypes of

perpetrators including GV/FO and severe/minor perpetrator subtypes. Specifically, it was

hypothesized those with a history of perpetrating severe levels of IPV and those categorized as

GV would be less able to correctly identify facial emotion expressions as compared to those with

a history of perpetrating minor IPV and FO subtypes respectively. In addition, the current study

also theorized empathy and emotion regulation would differ between the experimental and

control groups, GV and FO subtypes, and severe and minor perpetrators. It was hypothesized the

IPV group, perpetrators categorized as GV, and perpetrators of more severe levels of IPV would

demonstrate lower levels of empathy and higher levels of emotion dysregulation than the non-

violent control group, FO subgroup, and those who endorsed engaging in only minor IPV

perpetration respectively. Finally, we hypothesized emotion regulation and empathy would

moderate the relationship between facial recognition abilities and IPV perpetration.

Contrary to what was hypothesized, the experimental and control group were not found to

have significantly different results on the measure of facial expression recognition overall, nor in

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identifying all 'negative' affects displayed. However, when considering the different subsets of facial expression, men with a history of perpetrating IPV were found to make more mistakes in identifying facial expressions of fear as compared to the non-violent group. Further analysis found these difficulties in recognition of expressions of fear only surfaced in identifying fear in females but not in males. These findings suggest men with a history of perpetrating IPV may not have an overall difficulty of identifying facial emotion expressions, but rather, their deficits lie in recognition of fear, more specifically, expressions of fear in women. The findings of this study corroborate previous studies which document violent individuals overall demonstrated difficulty identifying expressions of fear (Stevens, Charman, and Blair, 2001; Gery et al., 2009; Marsh and Blair, 2008) and, more specifically, in perpetrators of IPV (Nyline., 2016). Further, the findings in this study also align with Marshall and Holtzworth-Munroe (2010) as they found perpetrators of IPV presented with a diminished sensitivity to expressions of fear displayed by women. However, the findings in this study are contradictory to the findings of Babcock, Green, and Webb (2008) as they found only a subgroup of IPV perpetrators presented with deficits in categorizing other expressions (i.e., angry, happy, neutral, and surprised) but they did not have difficulty when identifying expressions of fear.

As the findings in the current study both corroborate and contradict the findings of past studies, further research is necessary to identify if these findings are generalizable to perpetrators of IPV overall, or, if these findings are specific to the sample collected in this study.

In addition, the current study also aimed to explore differences in FAR abilities between perpetration subtypes including GV/FO and severe/minor perpetrators. When classifying the GV and FO subgroups, all but one participant was identified as GV which prevented conducting analysis on these subgroups.

When comparing the severe IPV and minor IPV subtypes, the findings suggested individuals with a history of perpetrating severe levels of IPV differed from those who perpetrated minor IPV, in recognition of sadness and negative facial expression in males. As no previous research studies have found similar results in which individuals with a history of perpetrating severe levels of violence were less able to correctly identify 'negative' affects expressed by men, more research is necessary to investigate whether these findings are generalizable to other samples or whether the results are specific to the participants collected in this sample.

In addition, exploratory analysis comparing the non-violent control group with those with a history of perpetrating severe levels of IPV revealed the EK60 score, the female expression total score, the female fear expression score, 'negative' expressions overall, and the female 'negative' cluster were significantly different between the groups, as the control group demonstrated higher scores in every analysis. These findings suggest the deficits in FAR abilities were more pronounced in those who perpetrated severe levels of IPV. The findings in these exploratory analyses further emphasize the heterogeneity of IPV perpetrators (Cantos & O'Leary, 2014) and the need to compare perpetrators of IPV by subgroups and their individual characteristics as compared to solely based on IPV perpetration alone.

Overall, the findings in the current study suggest facial affect recognition abilities are different between non-violent individuals and perpetrators of IPV, and between subtypes of IPV perpetrators. Specifically, perpetrators of IPV have greater difficulties with facial recognition of fear in females than non-violent controls. More importantly, these deficits in facial recognition of emotions in females, appear to become more pronounced in those with a history of perpetrating more severe levels of IPV. Severely violent, IPV perpetrators demonstrate difficulties with facial recognition of all negative emotions in females. As communication

deficits have been found to be one of the most consistent predictors of IPV perpetration (Stith et al., 2008) and as facial expressions hold a prominent role in social interactions (Adolph, 2003), the deficits in facial emotion recognition abilities found in the IPV participants of the current study offer more evidence of the existence of social deficits in perpetrators of IPV which may be associated with their engagement in IPV perpetration.

Furthermore, Blair's (1995, 2001) violence inhibition model explains that during socialization, observing distress cues may evoke empathetic reactions which can cause the observer of these distress cues to inhibit the behaviors that initially caused these distress cues to occur. As the findings in this study suggest men with a history of IPV perpetration make more errors in detecting expressions of fear in women, and men with a history of perpetrating severe levels of IPV demonstrate more overall difficulties in detecting negative emotions, it may be inferred that fear, or negative emotions, expressed by their romantic partner during interactions may not be detected or may be mislabeled, and, therefore, this incongruency between the emotion expressed and the emotion perceived can inhibit empathetic reactions which would in turn inhibit further violence, and lead to inappropriate behaviors such as physical aggression.

As the findings indicated more pronounced deficits were found in perpetrators of severe IPV, these subtypes of IPV perpetrators can potentially benefit the most from treatment which focuses on becoming more adept to emotional responses.

As this is the first study of its kind to assess FAR abilities in a majority Hispanic sample (98.31%), further research is needed to investigate if these results are generalizable to other Hispanic samples of IPV perpetrators or IPV perpetrators in general. In addition, as the current study did not assess cultural factors, such as the belief in traditional gender roles and *familismo*, future studies should assess if cultural factors possibly affected these associations. An additional

consideration of the participants of the current study is that they were recruited from the Rio Grande Valley, a border area and has a high influx of immigrants with accompanying specific stressors arising out of the immigration experience. Furthermore, assessing cultural factors is also recommended in future studies as the proportions of GV and FO perpetrators in the current study vary greatly from previous findings using the same categorization system in a predominantly white population. Specifically, the current sample was comprised of a majority Hispanic sample (98.31%), and most perpetrators were categorized as generally violent (96.67%) as compared to Cantos, Goldstein, Brenner, O'Leary, and Verborg (2015) in which 41% were categorized as GV in a population comprised of primarily white men (43.8%).

Contrary to what was hypothesized, subscale scores on a measure of empathy (i.e., perspective taking, fantasy, empathic concern, and personal distress) were not significantly different between the experimental and control group. Similarly, the subscales of the empathy measure were not significantly different between the severe and minor perpetration subgroups. These findings are contrary to previous research findings where empathy was negatively associated with aggressive behaviors, and lower rates of empathy were found to be associated with a higher risk of verbal and physical aggression (Péloquin et al. 2011; Covell et al. 2007; Armenti and Babcock, 2018).

However, consistent with previous findings, the severe perpetrators were identified as showing less empathic concerns than the non-aggressive controls. The empathetic concern subscale identifies feelings of sympathy or compassion for another person. Again, this deficit may fail to provide perpetrators with a mechanism to inhibit their aggression. This finding is consistent with previous research findings highlighting the relation between IPV perpetration and empathy, as a history of engaging in severe levels of IPV were related to lower indication of

empathetic concern compared to a non-violent control group (Péloquin et al. 2011; Covell et al. 2007; Armenti and Babcock, 2018). The findings further emphasize the importance of investigating not only the existence of IPV but the severity of the IPV endorsed in relation to empathy.

Perpetrators of IPV, irrespective of the severity of violence perpetration, were also shown to be more impulsive than the non-aggressive controls. However, when examining the different subtypes of perpetrators, no significant differences were found in emotion regulation as a whole or in any of the subtypes of emotion regulation. The findings of the current study only partially confirmed the hypothesis that individuals with a history of perpetrating IPV would demonstrate more difficulties regulating their emotions, as only one subtype of emotion regulation significantly differed between the groups. The findings of the current sample were similar to those of male college samples assessed in previous research studies where emotion regulation difficulties were found to be associated with engagement of physical aggression within their romantic relationships (Gratz et al. 2009; Gratz and Roemer 2004; Harper et al. 2005; Shorey et al. 2011). Further, these findings were consistent with studies which revealed positive associations between difficulties with emotion regulation and intimate partner violence (Stuart et al., 2006; Bliton et al., 2016). In addition, the findings were similar to the findings of Pollard and Cantos, (2021) as they discovered impulsivity to be associated with IPV perpetration in males. The overlapping evidence of emotion regulation difficulties, and more specifically, deficits related to impulsivity, found in perpetrators of IPV in the current study and previous studies reconfirms the association of emotion regulation abilities and IPV perpetration. Further, these findings emphasize the need to focus on developing interventions   that help exert control over one's own emotional state in individuals with a history of perpetrating intimate partner violence.

Neither emotion regulation difficulties nor empathy were found to moderate the relationship between FAR abilities and IPV perpetration. These findings may suggest additional variables, not investigated in the current study, played a greater role between FAR abilities and IPV perpetration. It may also be that the deficits in impulsivity and empathy exert a direct additive effect on IPV perpetration. Given these findings, future research should investigate other variables that can influence how empathy and emotion regulation affect the relationship between FAR abilities and IPV perpetration. In addition, the lack of significant findings may be reflective of the small sample size utilized in the current sample which may have led to insufficient power to reject the null hypothesis. Therefore, future researchers should consider assessing these same variables as moderators with a larger sample size.

The presents study also revealed multiple significant correlations within the study variables and within the violent and non-violent groups. For instance, in the total sample, the subscale of the EK60 measure, fear, was found to have a weak positive correlation with the IRI subscale, personal distress. These findings were once again found when considering the experimental group but not the control group indicating the more perpetrators of IPV detected fear in facial expressions, the more they indicated experiencing personal anxiety and uneasiness in tense interpersonal settings, one of four domains for the multimodal reaction of empathy according to Davis (1996). These findings are partially in line with the violence inhibition model posed by Blair (1995, 2001) in which being able to observe distress cues, such as expression of fear, evokes an empathetic reaction in the observer.

Additionally, the EK60 fear subscale was found to have a weak negative correlation with the DERS subscale, nonacceptance, within the experimental group and not the control group, indicating the worse perpetrators of IPV did in detecting facial expressions of fear, the higher

their tendency to either react negatively or not accept their own distress. These findings are similar to previous research findings in which individuals with mood dysregulation demonstrated difficulties in recognizing facial affects (Guyer et al., 2007).

Furthermore, the IRI subscale, perspective taking, was found to have a weak negative correlation with the DERS subscale, clarity, in the control group but not the experimental group. In this same sample, the IRI subscale empathetic concern, was found to have a weak negative correlation with the DERS subscale, goals, and a moderate negative correlation with the DERS total score as well as the subscales, awareness, and clarity. While Jaffe et al. (2015) indicated both emotional dysregulation and empathy deficits are found to be associated with aggression, these findings suggest the association of higher levels of empathy and lower levels of emotion regulation may be found in non-violent individuals.

However, in direct contradiction to these findings, a moderate positive correlation was found between the IRI subscale, personal distress, and the DERS total scale and subscales, strategies and clarity, in the non-violent control group. In addition, when considering the experimental sample, the IRI subscale, personal distress, was found to have a weak positive correlation with the DERS subscale, awareness, and a moderate positive correlation with the DERS total score and the DERS subscales: goals, impulse control, and clarity. Overall, these findings suggest in both the violent and non-violent men, being aware of their own feelings of anxiety and uneasiness in tense interpersonal settings is associated with more difficulties in regulating their emotions. As the IRI subscale, personal distress, was the only subscale within the empathy measure to be positively related to DERS total score in both the violent and non-violent group, it may be assumed that this domain of the multimodal reaction of empathy is not an area of struggle for those with high emotion regulation difficulties, or, that high levels of this domain of

empathy is associated with more difficulties regulating one's emotions. As previous researchers have demonstrated empathy to be negatively associated to aggressive behaviors (Armenti and Babcock, 2018), and emotion regulation difficulties to be related to engaging in aggressive behaviors (Roberton et al., 2012), the findings in the current sample indicating one form of empathy to be positively related to a higher degree of emotion regulation difficulties is nuanced.

Despite demonstrating both similar and contradictory findings to previous studies, the correlations between the study variables shed a light into relationships between empathy and emotion regulation, and their interactions within non-violent men and perpetrators of IPV.

Limitations

While the current study adds important information to the understanding of IPV perpetrators, there are several important limitations worth mentioning. First, the current sample involved participants from the Rio Grande Valley, where there is a predominantly Hispanic population limiting its generalizability to other samples. In addition, as the experimental sample was recruited from a court mandated program, this study is not generalizable to community samples, as IPV rates and type may vary by population. Further, the current study sought to investigate clinical samples to accurately represent perpetrators of IPV, however, this led to low participation rates and, therefore a smaller sample size. These small sample sizes may have led to insufficient power leading to a failure to reject the null hypothesis. In addition, aside from age, no other demographic variables were considered or controlled for across the analyses as they were not of interest in the current study, future studies should consider additional demographic variables and their association to IPV. Next, although a main objective in the current study was to investigate differences in facial emotion recognition abilities, emotion regulation, and empathy between subtypes of perpetrators, in the current sample, all but one participant was

labeled GV and, therefore, comparisons between this subtype of perpetrators was not conducted. Further, the current study utilized self-reports for incidents of violence against others which may have led to inaccurate recall, denial, and/or under-representation of violence in both the experimental and control sample. In addition, as the experimental sample was recruited from court mandated programs related to family violence, participants may have felt inclined to respond in a socially desirable manner and underreport incidents of violence. Lastly, another limitation associated with this study is that the increase in familywise error rate across the reported statistical analyses was not controlled. Replications of the findings in this study are encouraged.

Future Directions

The findings and limitations of the current study create a series of directions for future studies. Continued investigations between the different types of IPV perpetrators using the GV and FO categorization and other subtypes of perpetrators can be an area of interest for future researchers. The need to investigate differences between subtypes of perpetrators is especially important as perpetrators of IPV are a heterogenous group, and investigations of how this subgroup of IPV perpetrators and other subgroups vary in facial emotion recognition abilities is limited. As everyday social interactions rely on varying aspects of communication aside from facial expressions (e.g., body language and vocal tone) it is recommended that future researchers investigate these varying socialization cues in addition to FAR abilities. Further, the actors in the images consisted of Caucasian individuals and were presented in black and white. It is recommended futures researchers use measures that detect FAR abilities which contain images that are in color and include images of people from diverse backgrounds as this is a better representation of everyday social interactions. In addition, as deficits in fear were found to occur

more often in individuals with a history of perpetrating IPV than the non-violent control sample, and, as this study is among the few studies to find these results, it is recommended that further research be directed to understand the possible factors associated between IPV perpetration and FAR abilities. This is especially true as empathy and emotion regulation were found to be related to detection of fear but were not found to moderate the relationship between FAR abilities and IPV perpetration as was hypothesized. Specifically, it is necessary to investigate which additional variables can act as an inhibiting or protective factor when deficits of recognizing fear exist. In addition, as a subset of FAR abilities was found to be significantly different between the experimental and control group, future researchers can investigate whether providing training for FAR abilities in general can reduce levels of recidivism in perpetrators of IPV. Furthermore, as the findings note one domain of empathy, personal distress, to be related to emotion regulation difficulties, more research is necessary to investigate this domain of empathy and its relationship to IPV. Finally, given this was the first study of its kind to investigate FAR abilities in a sample of primarily Hispanic individuals, and, as no cultural factors were assessed to investigate their association to IPV perpetration, replication is needed to assess whether the findings are generalizable to other samples of this nature and what role, if any, culture plays in the association between FAR abilities and IPV.

CHAPTER VII

CONCLUSION

A significant number of men and women in the U.S. across varying ethnicities have been victims of intimate partner violence at one point in their lives (Smith et al., 2017). The high number of IPV victims bolsters the need for research to better understand individuals who perpetrate this form of violence as this may serve to create programs that reduce incidents of aggression which, in turn, can reduce the number of individuals who are victims of this form of abuse. As perpetration of IPV is multifaceted and perpetrators are a heterogeneous group, the current study aimed to investigate differences in how individuals with a history of perpetrating IPV interpret facial expressions and how empathy and emotional regulation may or may moderate these relationships. The results revealed perpetrators of IPV as a whole were less able to differentiate facial expressions of fear in women as compared to a non-violent control group. In addition, individuals with a history of perpetrating severe IPV demonstrated more pronounced levels of facial affect recognition deficits as compared to the IPV group overall. Further, difficulties in impulsivity, a subset of emotion regulation, was found to be higher in perpetrators of IPV overall and the empathy subscale, empathetic concern, was found to be lower in those who perpetrate more severe IPV than in the non-violent group. These results suggest perpetrators of intimate partner violence, especially those perpetrating more severe violence, may lack the inhibiting influence of detecting negative emotions, such as fear, in their female victims as well as that of the ability to have feelings of sympathy or compassion for another person.

While the limitations in this current study, namely small sample size, may impact the power of individual analyses, this study provides results that suggest important variables involved in the perpetration of intimate partner violence in a Hispanic sample.

Furthermore, this experimental sample was from the Rio Grande Valley, an area that is comprised of a predominantly Hispanic population. Continued research should be done across cultural domains and regional locations to determine if these findings are found in perpetrators of IPV across locations and cultures, and, if so, emphasize and implement the use of treatment that will help perpetrators better their ability to detect facial emotion expressions, learn to regulate their emotions, and learn to be more empathetic.

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APPENDIX

APPENDIX

Tables

Table 1. *Demographic Variables of Experimental and Control Group and IPV Severity Subtypes*

Full Sample (n = 59)		Control (n=29), n (%)	Experimental (n=30), n (%)	IPV Severity Subtypes (n = 28)	
				Severe (n=21), n (%)	Minor (n=7), n (%)
Variable					
Ethnicity	Hispanic/Latino	28 (96.6)	30 (100)	21 (100)	7 (100)
	Black/African American	1 (3.4)	-	-	-
Racial Identity	White	28 (96.6)	27 (90)	19 (90.5)	6 (85.7)
	Black	1 (3.4)	-	-	-
	Other		3 (10)	2 (9.5)	1 (14.3)
Sexual Orientation	Heterosexual/straight	29 (100)	30 (100)	21 (100)	7 (100)
Relationship Status	Committed dating relationship	6 (20.7)	7 (23.3)	7 (33.3)	-
	Engaged	1 (3.4)	2 (6.7)	-	1 (14.3)
	Married	8 (27.6)	9 (30.0)	5 (23.8)	4 (57.1)
	Single	1 (3.4)	10 (33.3)	7 (33.3)	2 (28.6)
	Divorced	13 (44.8)	2 (6.7)	2 (9.5)	-
Relationship Length	Between 1-6 months	1 (3.4)	2 (6.7)	2 (9.5)	-
	Between 6-12 months	4 (13.8)	4 (13.3)	2 (9.5)	1 (14.3)
	Between 12-24 months	2 (6.9)	4 (13.3)	2 (9.5)	1 (14.3)
	More than 2 years	22 (75.9)	20 (66.7)	15 (71.4)	5 (71.4)
Living With Partner	No	21 (72.4)	4 (13.3)	3 (14.3)	-
	Yes	8 (27.6)	26 (86.7)	18 (85.7)	7 (100)
Length living together	Not living together	21 (72.4)	4 (13.3)	3 (14.3)	-
	Less than a month	-	1 (3.3)	1 (4.8)	-
	Between 1-6 months	-	1 (3.3)	-	1 (14.3)
	Between 6-12 months	-	5 (16.7)	2 (9.5)	2 (28.6)
	Between 12-24 months	-	1 (3.3)	1 (4.8)	-
	More than 2 years	8 (27.6)	18 (60.0)	14 (66.7)	4 (57.1)
Education Level	Other	3 (10.3)	12 (40.0)	8 (38.1)	3 (42.9)
	High School Diploma	13 (44.8)	16 (53.3)	12 (57.1)	4 (57.1)
	Associate Degree	4 (13.8)	2 (6.7)	1 (4.8)	-
	Bachelor's Degree	5 (17.2)	-	-	-
	Master's Degree	3 (10.3)	-	-	-
	Doctorate's Degree	1 (3.4)	-	-	-
Employment Status	Yes	29 (100)	22 (73.3)	13 (61.9)	7 (100)
	No	-	8 (26.7)	8 (38.1)	-
Household Income	Less than $10,000	3 (10.3)	2 (6.7)	2 (9.5)	-
	$10,000- $20,000	-	6 (20.0)	5 (23.8)	1 (14.3)
	$20,000 - $30,000	6 (20.7)	8 (26.7)	6 (28.6)	2 (28.6)
	$30,000-$40,000	4 (13.8)	5 (16.7)	4 (19.0)	-
	$40,000 - $50,000	3 (10.3)	4 (13.3)	1 (4.8)	2 (28.6)
	$50,000 - $60,000	4 (13.8)	1 (3.3)	1 (4.8)	-
	$60,000-$70,000	8 (27.6)	2 (6.7)	2 (9.5)	-
	More than $70,000	1 (3.4)	2 (6.7)	-	2 (28.6)

Table 2. *Correlations of age and study variables across all participants*

Spearman's rho	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Age	-																		
2. EK 60 Total	.09	-																	
3. Anger	.19	.42**	-																
4. Disgust	.06	.49**	-.17	-															
5. Fear	-.08	.65**	.11	.35**	-														
6. Happiness	.16	.50**	.44**	-.04	.09	-													
7. Sadness	.02	.57**	.26*	.07	.07	.37**	-												
8. Surprise	.01	.29*	.11	.02	-.04	.07	.21	-											
9. IRI-PT	-.21	.03	.06	-.16	-.02	.06	.20	-.10	-										
10.IRI-FS	-.20	.06	.03	.05	-.01	.13	-.01	-.03	.45**	-									
11. IRI-EC	.22	.04	.10	.10	.01	<.001	-.03	-.07	.43**	.37**	-								
12.IRI-PD	-.26*	.16	-.08	.21	.27*	-.16	.04	.02	.07	.09	.01	-							
13.DERS-N	.01	-.15	.11	.01	-.24	-.13	.03	-.08	.12	-.03	.11	.24	-						
14. DERS-G	-.10	.06	.08	-.01	-.12	.12	.19	.15	-.11	.02	-.12	.33*	.38**	-					
15. DERS-I	-.01	-.05	.01	-.01	-.01	-.08	-.09	-.02	-.06	.05	-.03	.27*	.41**	.34**	-				
16. DERS-A	-.26*	.06	.04	.14	.23	-.21	-.19	.04	-.16	-.08	-.24	.42**	.14	.09	.28*	-			
17. DERS-S	-.27*	-.02	.09	.05	-.16	-.10	.12	-.01	.01	.22	-.02	.36**	.66**	.54**	.38**	.27*	-		
18. DERS-C	-.33*	.10	-.08	.17	.22	-.14	-.14	.14	-.10	-.02	-.19	.56**	.28*	.40**	.28*	.52**	.47**	-	
19. DERS-Total	-.21	-.02	.13	.05	-.08	-.09	.02	.06	-.004	.06	-.05	.52**	.75**	.67**	.53**	.50**	.82**	.69**	-

PT -Perspective Taking, FS- Fantasy Scale, EC- Empathetic Concern, PD- Personal Distress, DERS-N – Non-Acceptance, G- Goals, I-Impulse, A-Awareness, S-Strategies, C-Clarity

$*p < .05$ (2-tailed). N=59

$**p < .01$ (2-tailed). N=59

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Table 3. *Correlations of age and study variables across all control group participants*

Spearman's rho	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Age	-																		
2. EK 60 Total	.32	-																	
3. Anger	.36	.71**	-																
4. Disgust	.23	.48**	.19	-															
5. Fear	.20	.65**	.39*	.24	-														
6. Happiness	.07	.55**	.66**	.06	.25	-													
7. Sadness	.23	.61**	.39*	.13	.11	.37	-												
8. Surprise	.18	.20	.06	-.02	.05	-.08	.05	-											
9. IRI-PT	-.07	-.20	-.16	-.33	-.10	-.07	.14	-.36	-										
10.IRI-FS	-.17	-.19	-.15	-.28	-.22	-.03	-.01	-.03	.34	-									
11. IRI-EC	.28	-.07	-.16	.03	.07	-.11	.004	-.02	.46*	.14	-								
12.IRI-PD	-.41*	-.20	-.22	-.05	.10	-.22	-.12	-.10	-.10	.07	-.19	-							
13.DERS-N	-.17	-.12	.19	-.03	-.10	-.16	-.03	-.09	.10	-.05	-.11	.26	-						
14. DERS-G	-.38*	.01	.03	-.15	-.16	.04	.25	.18	-.10	.17	-.37*	.26	.34	-					
15. DERS-I	-.38*	-.14	-.04	-.16	.01	-.10	-.21	-.02	.13	.29	-.12	.27	.40*	.22	-				
16. DERS-A	-.11	-.06	.00	-.05	.11	-.12	-.27	-.23	-.28	-.19	-.46*	.32	.22	-.05	.47**	-			
17. DERS-S	.50**	-.08	-.02	-.04	-.16	-.22	.04	-.06	<-.001	.23	-.33	.52**	.64**	.65**	.51**	.23	-		
18. DERS-C	-.58**	-.15	-.27	-.06	-.02	-.23	-.25	.16	-.38*	-.01	-.54**	.56**	.37*	.50**	.47*	.47*	.68**	-	
19. DERS-Total	-.50**	-.08	.02	-.07	-.04	-.1	-.03	-.02	-.09	.13	-.44*	.52**	.74**	.66**	.59**	.43*	.85**	.80**	-

*. p < .05 (2-tailed). N= 29

**. p < .01 (2-tailed). N= 29

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Table 4. *Correlations of age and study variables across all experimental group participants*

Spearman's rho	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Age	-																		
2. EK 60 Total	-.001	-																	
3. Anger	-.04	.21	-																
4. Disgust	-.02	.49**	-.41*	-															
5. Fear	-.09	.63**	-.08	.42*	-														
6. Happiness	.30	.50**	.24	-.12	.07	-													
7. Sadness	-.15	.55**	.20	.04	.03	.40*	-												
8. Surprise	-.29	.38*	.16	.05	-.11	.23	.31	-											
9. IRI-PT	-.17	.20	.27	-.05	-.07	.23	.22	.14	-										
10.IRI-FS	-.17	.32	.16	.30	.16	.30	.01	-.01	.55**	-									
11. IRI-EC	.31	.14	.29	.17	-.05	.13	-.08	-.12	.38*	.52**	-								
12.IRI-PD	-.07	.36	.03	.32	.37*	-.07	.17	.13	.18	.07	.12	-							
13.DERS-N	.12	-.12	.06	.11	-.38*	-.13	.19	-.06	.17	.01	.31	.33	-						
14. DERS-G	.04	.09	.04	.13	-.09	.13	.20	.16	-.08	-.08	.05	.43*	.45*	-					
15. DERS-I	-.03	.23	.17	.17	.24	-.06	.10	-.02	-.10	-.12	.10	.50**	.32	.42*	-				
16. DERS-A	-.26	.15	.14	.30	.18	-.29	-.07	.27	-.06	.05	.002	.39*	.16	.29	.39*	-			
17. DERS-S	-.10	.03	.25	.13	-.20	-.04	.19	.07	.08	.18	.28	.30	.73**	.48**	.26	.38*	-		
18. DERS-C	.06	.23	.08	.34	.32	-.07	-.07	.01	.10	-.01	.18	.59**	.32	.38*	.33	.46*	.29	-	
19. DERS-Total	-.02	.07	.23	.16	-.10	-.08	.10	.15	.07	-.01	.24	.57**	.76**	.72**	.59**	.59**	.79**	.62**	-

*. p < .05 (2-tailed). N=30

**. p < .01 (2-tailed). N=30

Table 5. *Mean Scores in labeling emotions comparing different types of violent and non-violent participants.*

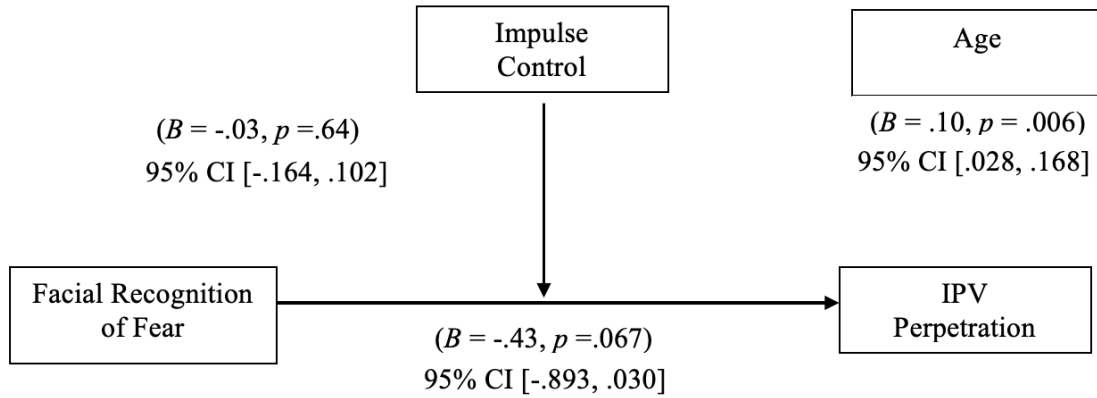| PK 60 Faces	Control (n = 29)		Experimental (n = 30)		Minor IPV (n = 7)		Severe IPV (n = 21)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Total	46.72	4.63	45.20	5.04	47.86	3.71	43.86	5.10
Anger	7.45	1.48	7.60	1.59	8.14	1.86	7.38	1.56
Disgust	6.66	1.54	6.27	2.33	7.14	1.68	5.90	2.55
Fear	6.59	1.72	5.40	2.40	4.86	3.13	5.38	2.20
Happiness	9.66	0.81	9.67	0.96	10.00	0.00	9.52	1.12
Sadness	7.28	1.87	7.17	2.00	8.43	1.27	6.62	2.06
Surprise	9.10	0.90	9.10	0.88	9.29	0.76	9.05	0.92

Figure 1. Moderation Analysis Model 1 for Facial Recognition of Fear Predicting Target Group Membership (Perpetration or Non-perpetration of IPV) Moderated by Impulse Control & Controlling for Age.
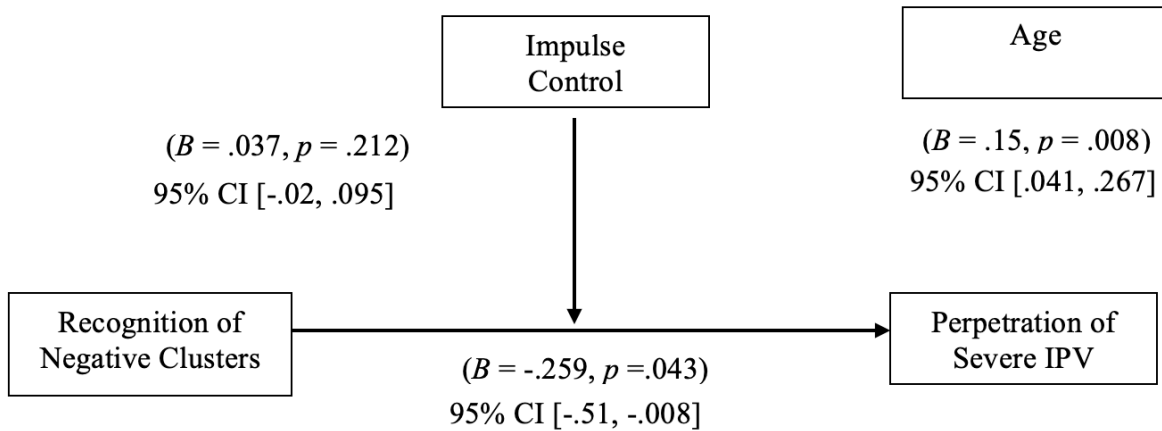

Figure 2. *Moderation Analysis Model 1 for Facial Recognition Negative Emotion Cluster Predicting Target Group Membership (Severe IPV or Non-perpetration of IPV) Moderated by Impulse Control & Controlling for Age.*
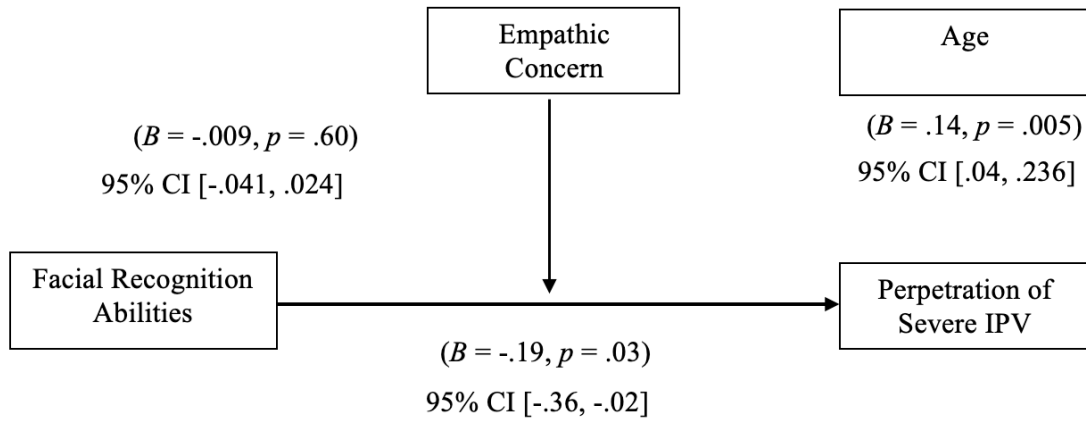
Figure 3. *Moderation Analysis Model 1 for Facial Recognition Predicting Target Group Membership (Severe IPV or Non-perpetration of IPV) Moderated by Empathic Concern & Controlling for Age.*

BIOGRAPHICAL SKETCH

Margot Martinez was born and raised in the Rio Grande Valley, Texas. She began her education at the University of Texas Rio Grande Valley Fall of 2015. Margot 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, Margot joined a research lab under the direction of Dr. Arthur Cantos. Margot became involved in research and attended a conference before the COVID-19 pandemic.

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