Mating in Close Proximity: An Investigation of the role of Attachment Styles on IPV Perpetration in the time of COVID-19

by

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“Life is best organized as a series of daring ventures from a secure base” John Bowlby

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Note on Inclusion of Published Work

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Chapter 3

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Declarations

I hereby confirm that I completed this thesis independently, that I have not heretofore presented this thesis to another department or university, and that I have listed all references used, and have given credit to all additional sources of assistance.

Abstract

Intimate partner violence (IPV) is a major public health concern with increasing rates of IPV being seen around the world during the COVID-19 pandemic. To understand the circumstances in which violence is used in intimate relationships and the individual and interpersonal factors that increase the risk of using violence, it is important to understand the adaptive problems toward which coercive tactics tend to be directed.

Previously, IPV has been linked to aspects of romantic attachment, with insecure attachment styles most often linked to higher rates of IPV. To assess the extent to which IPV perpetration is related to attachment styles, Chapter 2 is a cross cultural study to examine the associations between IPV perpetration and romantic attachment dimensions. The results indicate that insecure attachment style is associated with IPV across 57 nations.

Since the onset of COVID-19 there has been a global rise in IPV rates. Chapter 3 explores the effects of COVID-related PTSD on intimate relationships, specifically whether attachment insecurity puts individuals more at risk of perpetrating violence against an intimate partner in the face of a stressful life event. The findings indicate that COVID-related PTSD is associated with increased IPV perpetration *only in securely attached* individuals. Insecurely attached individuals displayed different patterns.

These findings indicate that securely attached individuals and their partners may be particularly susceptible to external life stressors and may be more at risk of perpetrating IPV under heightened and prolonged distress. Chapter 4 explores whether *relationship quality* mediates the attachment-moderated association between COVID-19 related PTSD and IPV perpetration. The findings of the study reveal that insecure individuals who perceive greater relationship quality perpetrate less violence against their intimate partner. The results indicate that relationship quality may serve as a buffer against IPV perpetration but *only in individuals with an insecure* attachment style.

Chapter 5 uncovers the role of partner's attachment style in predicting IPV perpetration during COVID-19. The findings demonstrate that anxious-avoidant couples are more at risk of perpetrating IPV against avoidant partners. Additionally, anxious individuals who are partnered with avoidant individuals report greater relationship commitment regardless of relationship satisfaction. The results suggest that anxious individuals who are in a romantic relationship with an avoidant partner are more at risk of perpetrating IPV and remaining in abusive relationships.

Chapter 6 discusses the implications of the thesis and emphasizes the importance of understanding the precise adaptive design of the psychological mechanisms that generate intimate partner violence behavior- including what cultural, situational, dyadic, and developmental triggers activate its behavioral expression- to strategically improve efforts to reduce violence in our world.

Abbreviations

Acronyms

COVID-19	Coronavirus Disease 2019
DNA	Deoxyribonucleic acid
IPV	Intimate Partner Violence
MTurk	Amazon Mechanical Turk
OPI	Obligatory Parental Investment
PTSD	Posttraumatic Stress Disorder
RQ	Relationship Quality
SES	Socio-Economic Status
STD	Sexually Transmitted Disease
UN	United Nations
WEIRD	Western, Educated, Industrialized, Rich and Democratic countries
WHO	World Health Organization
WHR	Waist-to-Hip Ratio

Chapter 1

General Introduction

1.1 Introduction

Although men and women have different mating strategies in some respects (Schmitt & Buss, 1993), each faces the potent adaptive challenge of successfully rearing offspring to reproductive age. In response to this common challenge, romantic love may have evolved as a commitment device and cooperative arrangement benefiting both men and women by conjointly increasing their reproductive fitness (Kirkpatrick, 1998). However, occasionally sexual conflict permeates intimate relationships and can escalate into violence. Indeed, individuals frequently employ violent behaviors against intimate partners as a response to conflict in their relationships (Magdol et al., 1997; McLaughlin, Leonard, & Senchak, 1992; Straus, 2004). Every year one out of every six couple experiences at least one act of intimate partner violence (IPV) in the US, and 28% of couples in the US report experiencing marital violence at some stage in their marriage (Peters, Shackelford, & Buss, 2002; Schafer, Caetano, & Clark, 1998; Straus & Gelles, 1986). Similar estimates are found in large-scale surveys across various nations (Magdol et al., 1997; Straus, 2004). More recently, during the Covid-19 pandemic, the WHO and

UN announced a significant global rise in domestic violence. Indeed, IPV and sexual coercion are major public health concerns. The key aim of the present thesis is to gain an understanding of the underlying processes and relationship factors that make individuals more susceptible to employ IPV and sexual coercion against an intimate partner. It is envisaged that the knowledge gained from the present thesis will raise awareness about the underlying personal and relational factors that could lead to coercive and violent behavior in romantic relationships to motivate clinical or behavioral interventions that could help both victims and perpetrators of domestic violence.

This chapter reviews prior literature investigating how biology, individual differences, culture, ecology, and intimate relationships can inform IPV perpetration. Section 1.2 outlines the function of romantic pair bonds and mate selection. Section 1.3 reviews the relationship between attachment and maintenance of pair-bonds, and section 1.4 explores the role of attachment in mate retention tactics and sexual conflict. In section 1.5 sex differences and ecological factors in predicting IPV perpetration are discussed. Section 1.6 provides an attachment and evolutionary perspective on stress and mental health outcomes (e.g., PTSD and depressive symptoms). In section 1.7 the role of individual differences (attachment style) and interpersonal factors (relationship quality) in conflict resolution and IPV perpetration is discussed. Section 1.8 reveals the role of partners' attachment style interaction. The concluding sections of the chapter identify gaps in the literature and outstanding questions will be pointed out (section 2). Section 3 concludes with an outline of this thesis.

1.2 Formation of Pair-bonds

Pair bonding, the establishment of monogamous relationships between two non-kin individuals, is a trait that likely evolved to support reproduction and survival of

species, especially those with highly dependent offspring (Kleiman, 1977). In these species, receiving care from both parents benefits offspring, thus fostering attachment bonds between mating partners to ensure mutual investment in their progeny (Eastwick, 2009; Fraley & Shaver, 2000; Hazan & Diamond, 2000; Miller & Fishkin, 1997; Stewart-Williams & Thomas, 2013; Zeifman & Hazan, 2008). Over the course of human evolution, as bipedalism emerged and brain size increased, offspring became increasingly dependent on substantial and intensive parental investment. Consequently, this dependency placed significant demands on maternal time, creating strong selection pressure for bi-parental care (Buss, 1989). Romantic pair bonds may have therefore evolved to enhance the likelihood of humans successfully raising healthy offspring who survive to reproductive age (Geary, 2000; Hurtado & Hill, 1992; Winking, 2006). As a result, the decision of choosing a suitable mate became one of the most pivotal choices for individuals. Optimal mate selection not only ensures reproductive benefits but also provides physical protection and resources provisioning for oneself and one's offspring. Conversely, poor mate choices can result in a high mutation load in DNA, sexually transmitted diseases (STDs), reputational damage, and abandonment (Buss, 2015). These costs and benefits have exerted significant selection pressure throughout human evolutionary history, leading to various individual mating strategies one of which is preferential mate choice.

In his theory of sexual selection, Darwin (1871) proposed that individuals engage in intra-sexual competition (competition within the same sex) to be selected as mates through inter-sexual selection (mate choice by the opposite sex). In general, men and women seek similar traits in a partner. Both sexes prefer partners who are warm, humorous, physically attractive, healthy, possess high social status, and intelligence

(Buss, 2015). However, across various cultures, men tend to emphasize cues related to female fertility, such as youth, physical attractiveness, waist-to-hip ratio (WHR), and breast size (Buss, 1989; Li, Bailey, Kenrick, & Linsenmeier, 2002; Marlowe, Apicella, & Reed, 2005; Conroy-Beam & Buss, 2019; Garza, Heredia, & Cieslicka, 2016), while women prioritize a mate's access to resources, giving importance to age, income, social status, and social dominance (Buss, 1989; Li et al., 2002; Regan, Levin, Sprecher, Christopher, & Gate, 2000; Valentine, Li, Penke, & Perrett, 2014; Garza et al., 2016; Conroy-Beam & Buss, 2019). These gender differences can be explained by parental investment theory (Trivers, 1972), which posits that ancestral sexual encounters may have had different adaptive consequences for human males and females. These consequences may have shaped men's and women's mating strategies and mate selection criteria due to the biological sex difference in obligatory parental investment (OPI). Women's OPI involves nine months of gestation and post-natal lactation, while men's OPI consists solely of providing sperm. This female biased OPI means that women may have evolved a psychology leading them to select as mates those men who possess traits best ensuring the long-term survival of their offspring (i.e., traits related to men's ability and willingness to devote resources). Failing to base mate choice on these factors would have risked wasting women's relatively large OPI.

Assortative mating operates on the assumption that individuals tend to pair with mates of similar mate value (Gangestad & Simpson, 2000). Mate value represents one's desirability in the mating market to the opposite sex (Sugiyama, 2005) and encompasses various aspects, including age, socio-economic status (SES), intelligence, sense of humor, personality, creativity, friendliness, and physical attractiveness (Li et al., 2002). Evolutionary biology suggests that different aspects of mate value are more important for

each sex. For instance, Li and Kenrick (2006) used a mate-screening paradigm in which they provided participants "mate budgets" to allocate traits of potential mates. They found that, when budgets were limited, men consistently prioritized traits associated with physical attractiveness, unlike women. Men consider attractiveness a necessity in a mate (Eastwick & Finkel, 2008), only considering other traits like kindness, humor, and intelligence after meeting the minimum attractiveness standard (Li et al., 2002).

From an evolutionary perspective, these sex differences reflect adaptations that motivate preferences toward mates maximizing reproduction and offspring survival (Symons, 1979). Specifically, women's reproductive success may be predicted by their health and fertility status, while men's reproductive success may be better predicted by his ability to provide resources, social status, and prestige to their offspring (Buss, 1989). Consequently, women are expected to prefer mates willing and capable of providing for their offspring's survival, while men should prefer mates who signal fertility (i.e., youth, physical attractiveness; Buss, 1995).

Partner traits theorized to promote reproductive success and signal high mate value (Eastwick & Finkel, 2008; Fletcher, Simpson, Thomas & Giles 1999) may increase sexual interest in pursuing individuals with these characteristics and enhance the desire to form bond with them (Fletcher, Kerr, Li, & Valentine, 2014; Lemay, Clark, & Greenberg, 2010).

Considerable evidence suggests that individuals tailor their mating strategy based on their own mate value. This means that individuals with high mate value may have higher standards when selecting a romantic partner (Buss & Shackelford, 2008; Conroy-

Beam & Buss, 2019; Edlund & Sagarin, 2010; Fales et al., 2016). For instance, wealthier men and attractive individuals tend to have stronger stronger preferences for mates who are attractive or have a healthy BMI (Fales et al., 2016).

In addition to sex-based mate selection, ecological factors can also influence mate choice. For example, during times of resource scarcity, individuals may prioritize securing a mate who offers material benefits such as food, shelter, or protection from potential threats. In cultures with scarce resources, parental investment becomes crucial for the survival of offspring to reproductive age. Indeed, there is evidence that both men and women from resource-scarce environments place a higher emphasis on traits related to resources (Pillsworth, 2008) and parental investment (Lee & Zietsch, 2011).

In cultures with limited resources, men were found to prefer mates with larger breast size (Swami & Tovée, 2013), and both men and women tend to prefer mates with a higher body mass index (BMI; Lee, Brooks, Potter, & Zietsch, 2015). Fat deposits are seen as proxies for access to resources and ability to withstand food shortages, making these signals particularly relevant during resource scarce times. Moreover, Tovée and colleagues (2006) demonstrated that men who relocated from rural South Africa (a low-resource ecology) to the United Kingdom (a high-resource ecology), reported a decline in BMI preference in a mate. This adaptation in mate preference showcases the dynamic nature of human mating strategies, which can flexibly adjust to different ecological contexts.

1.3 Pair-Bond Maintenance

Once a suitable mate is found, sexual desire and repeated intimate physical contact with this partner may motivate a person to invest more time to progress from initial

encounters to a steady relationship and develop an attachment bond (Birnbaum & Gillath, 2006; Gillath et al., 2008). Fisher (1998, 2000) demonstrated that there are different neural activities associated with pair bonding suggesting that there are proximate mechanisms which promote the development and maintenance of relationships (model of mating, reproduction, and parenting). According to this model, mating behaviors are guided by lust, attraction, and attachment. Whereas the lust and attraction systems function to locate sexual opportunities and direct a person's attention toward specific mates, the attachment system is distinguished by the maintenance of close proximity, feelings of comfort and security, and feelings of emotional dependency (Carter, 1998; Insel, Winslow, Wang, & Young, 1998). This is conceptually similar to Bowlby's attachment theory (1969), which posits that internal working models represent the caregiver-child-bond and eventually guide the formation and maintenance of romantic pair-bonds by motivating and regulating behavioral and cognitive responses to specific social circumstances (Shaver & Hazan, 1987). The proximal functions of the attachment system reflect social regulation of emotional responding (i.e., turning to attachment figure and deriving comfort and security from partners, especially in times of threat; Fraley & Davis, 1997). This mid-level evolutionary theory explains that the adult attachment system (Bartholomew & Horowitz, 1991; Fraley & Shaver, 2000; Shaver & Hazan, 1987) evolved to facilitate pair-bonding (Fraley & Shaver, 2000; Hazan & Diamond, 2000; Shaver, Hazan, & Bradshaw, 1988) and ensure the survival of offspring to reproductive age (Hazan & Diamond, 2000; Hazan & Zeifman, 1999).

There are two primary attachment dimensions underlying attachment bonds to romantic partners: attachment avoidance and attachment anxiety (Brennan & Shaver, 1995; Fraley, Waller, & Brennan, 2000). According to Bowlby (1988), these internal working models portray the extent to which individuals perceive themselves worthy of

love and attention from others and the extent to which they perceive others to be supportive of them. This work has been further extended by Bartholomew and Horowitz (1991) who used a two-dimensional model (model of self and model of other) which results in four attachment styles depending on individuals' views of themselves and others. For example, a secure attachment style reflects a positive view of both the self and other, whereas the preoccupied style, reflects a negative view of the self but a positive view of other (characterized as anxious/ambivalent in Bowlby's model). However, the avoidant style is separated into dismissing attachment, whereby model of self is positive, but model of other is negative, and fearful attachment, whereby both model of self and model other are negative. Each attachment style is linked to unique behavioral and cognitive patterns in response to pair-bond threats (Shaver & Mikulincer, 2007). For example, a preoccupied attachment style is characterized by hyperactivation of the attachment system (Cassidy, 2000). This has been linked to hypervigilance to cues of abandonment or rejection by an intimate partner (Mikulincer & Shaver, 2007), increased sexual motivation (Davis et al., 2006), and chronic jealousy (Sharpsteen & Kirkpatrick, 1997). Moreover, individuals with a preoccupied attachment tend to look for validation from others and may therefore seek excessive closeness from their intimate partners (Griffin & Bartholomew, 1994). Conversely, a dismissing attachment style is characterized by hypoactivation of the attachment system (Cassidy, 2000). This has been linked to efforts to shun emotional and physical intimacy in order to avoid being abandoned or rejected (Shaver & Mikulincer, 2008). Dismissing individuals tend to be self-reliant and independent (Edelstein & Shaver, 2004). Finally, fearful attachment is associated with a deep-rooted sense of unworthiness and high dependency on validation from others similar to those with a preoccupied attachment. However, fearful individuals tend to evade romantic intimacy due to their negative expectations of others, similar to

individuals with dismissing attachment style. Men and women with anxious attachment report excessive dependence on their partners, fear of abandonment and rejection, jealousy, and discomfort with closeness (Babcock, Jacobson, Gottman, & Yerington, 2000; Dutton, 1995; Dutton, Saunders, Starzomski, & Bartholomew, 1994; Levy et al., 2005; Mauricio et al., 2007).

The degree to which the attachment system is activated in romantic relationships influences the ways in which individuals respond to distressing situations and relationship threats (Bowlby, 1982; Pietromonaco & Barrett, 2000; Shaver & Mikulincer, 2007; Simpson & Belsky, 2008) and may further guide the development of reproductive strategies (Chisholm, 1996; Del Giudice, 2009). The dimensions of attachment insecurity are characterized by distinct characteristics and behavioral patterns within romantic relationships (Shaver & Mikulincer, 2008) and have been shown to predict the quality of romantic relationships (Li & Chan, 2012). For example, people who have a secure attachment style tend to experience more relationship satisfaction and higher levels of commitment than those who have an insecure attachment style (Frei & Shaver, 2002; Tucker &Anders, 1999). In addition, individuals with a secure attachment tend to experience less conflict in their relationships (Campbell, Simpson, Boldry, & Kashy, 2005; Simpson, Rholes, & Phillips, 1996), and seem to be more resistant to relationship dissolution (Davila & Bradbury, 2001; Kirkpatrick & Davis, 1994). Securely attached individuals were also found to report less depressive symptoms (Carnelley, Pietromonaco, & Jaffe, 1994; Hankin, Kassel, & Abela, 2005), higher self-esteem (Bartholomew & Horowitz, 1991), and cope better in times of stress (Berant, Mikulincer, & Shaver, 2008).

Conversely, anxious attachment has been negatively associated with relationship satisfaction and trust (Levy & Davis, 1988; Simpson, 1990). Such individuals further struggle to disengage from signals of relationship threats (Mikulincer, Gillath, & Shaver, 2002), and were found to resort to controlling or coercive behaviors to seek proximity to and support from romantic partners (Mikulincer & Shaver, 2007; Shaver & Mikulincer, 2008), whereas individuals with an avoidant attachment style seek independence and are motivated to evade emotional and physical intimacy thereby decreasing proximity to their romantic partners (Edelstein & Shaver, 2004; Shaver & Mikulincer, 2008). Such individuals also tend to discount information about relationship threats (Dewitte & De Houwer, 2008; Dykas & Cassidy, 2011; Simpson, Griskevicius, & Kim, 2011). These findings extend to same sex relationships (Fingerhut & Peplau, 2013; Mohr, Selterman, & Fassinger, 2013). Indeed, similar associations between attachment security and relationship quality (Elizur & Mintzer, 2003; Kurdek, 2002; Mohr, Selterman, & Fassinger, 2013), commitment (Kurdek, 1997, 2002; Mohr et al., 2013), communication patterns (Gaines & Henderson, 2002) and partner violence (Craft, Serovich, McKenry, & Lim, 2008) have been found in studies investigating LGB (lesbians, gay, bisexual) individuals.

1.4 Mate Retention and Sexual Conflict

While finding and securing a romantic partner is a crucial aspect of mate selection, individuals must also actively work to maintain their romantic relationships to reap the potential benefits of long-term commitment. Given the substantial investments of time and resources in developing and sustaining these relationships, along with the significant fitness costs associated with losing a valued partner, the fear of relationship loss can trigger substantial anxiety and concern (Campbell & Ellis, 2015). Consequently, sexual

conflict is expected to be a common and inherent aspect of intimate pair-bonds. From an evolutionary standpoint, sexual conflict typically revolves around resources essential for the success of long-term relationships (Buss, 2017). Both men and women have evolved a variety of strategies to acquire these reproductively relevant resources, either to benefit their intimate partner (benefit-provisioning tactics), or at the expense of their partner (cost-inflicting tactics; Buss & Shackelford, 1997). Benefit-provisioning tactics in intimate relationships involve investments of time, resources, and effort to maintain exclusive sexual access to one's partner. These tactics may include giving gifts, enhancing one's appearance for a romantic partner, and offering compliments. In contrast. cost-inflicting tactics encompass manipulation, monopolization of time, verbal derogation (i.e., psychological abuse) as well as sexual and physical assault (i.e., intimate partner violence and sexual coercion). These tactics are especially likely to be employed in situations where there is a high subjective probability of losing one's partner to potential rivals, with the aim of preventing the dissolution of the relationship (Buss & Shackelford, 1997).

An evolutionary perspective suggests that cost-inflicting tactics although maladaptive, have evolved to solve specific problems such as presence of mate poachers, potential or actual sexual infidelity, resource infidelity or deprivation, mate value discrepancies, the presence of stepchildren, and the threat of relationship termination (Buss & Shackelford, 1997). Violence toward intimate partners is therefore hypothesized to be context-specific such that it may be an alternative means of solving adaptive problems (Buss, 1988; Buss & Shackelford, 1997a, 1997b; Daly, Wilson, & Weghorst, 1982; de Miguel & Buss, 2011; Goetz, Shackelford, Starratt, & McKibbin, 2008; Shackelford, Goetz, Buss, Euler, & Hoier, 2005). For example, Graham-Kevan and Archer (2009) found that individuals lower in mate value use more controlling and

aggressive behaviors toward intimate partners suggesting that when individuals perceive higher mate value discrepancy, they may resort to IPV perpetration as a way to deter their partner from the temptation to be unfaithful or dissolve the relationship (e.g., Wilson & Daly, 1993).

From an evolutionary perspective, especially in men, warding off mate poachers and limiting a woman's potential sexual contact with other men would have increased a man's paternity probability, which would have translated into increased reproductive success. Indeed, male sexual jealousy has been shown to greatly predict sexual conflict and physical abuse in relationships (Daly & Wilson, 1988b, Wilson & Daly, 1992), and is the most frequently cited cause of spousal homicide world-wide (Daly & Wilson, 1988a, 1988b; Shackelford, 2000). Conversely, women generally resort to homicide as a means of defending themselves or as a last resort after suffering abuse for a prolonged period of time (Daly & Wilson, 1988a). Feeney (1999) further suggested that coercive sexual behavior may be a means for men, who struggle to articulate their need for attention and reassurance, to gain proximity to a partner.

From an evolutionary perspective, these differences in attachment styles may function to monitor and evaluate anticipated or present threats that could pose risks to romantic relationships (Fraley & Shaver, 2000; Hazan & Diamond, 2000; Kirkpatrick, 1998). This could suggest that for individuals with an insecure attachment, the use of aggression and coercion could be desperate attempts to access and maintain reproductively relevant resources from romantic partners (Buss & Duntley, 2008). It follows, that attachment theory provides a unique framework to the study of IPV and sexual coercion. Indeed, it has been consistently shown that violent men and women tend to have preoccupied and fearful attachment styles (Bond & Bond, 2004; Henderson,

Bartholomew, Trinke, & Kwong, 2005; Schumacher, Feldbau-Kohn, Smith Slep, & Heyman, 2001; Stith, Smith, Penn, Ward, & Tritt, 2004). Specifically, anxious attachment styles have been associated with both male and female IPV perpetration (Babcock, Jacobson, Gottman, & Yerington, 2000; Dutton, Saunders, Starzomski, & Batholomew, 1994; Gormley & Lopez, 2003; Tracy et al., 2003; West & George, 1999).

1.5 Sex Differences in IPV Perpetration

Sex differences in IPV have been a popular subject of controversy and academic debate (e.g., Kimmel, 2002; Saunders, 2002; Straus, 1999). For example, crime and feminist researchers suggest that IPV is significantly more frequently employed by men than by women, with some estimates revealing that men carry out more than 90% of violent acts against a partner (Straus, 1999; Dobash & Dobash, 2004). From a feminist perspective, it is argued that women employ acts of violence against their partners only in self-defense. Indeed, A meta-analysis of longitudinal studies showed that about 30% of women worldwide have experienced some form of violence from an intimate partner during their lifetime (Devries et al., 2013). In addition, Garcia-Moreno and colleagues (2006) showed that in rural areas and cities across 10 countries women aged 15-49 (N=24,097) reported a lifetime prevalence of physical and sexual violence from an intimate partner (see Alhabib, Nur, & Jones, 2010 for similar findings). Given that such studies show that physical and sexual abuse largely involves male perpetrators, the feminist perspective argues that IPV must be a consequence of patriarchy (e.g., Dobash & Dobash, 1981). The patriarchal framework emphasizes the masculine nature of IPV (social role theory; Eagly, 1987) and suggests that it results from the societal power of men (Dobash & Dobash, 1977). However, such studies tend to use data from clinic or domestic violence shelters which investigate “intimate terrorism” and is for the most part

male perpetrated. In that context, women are always shown to be the victims of domestic abuse, despite the fact that men can be victims of female IPV and sexual coercion perpetration (Hines & Douglas, 2009; Hines, 2015). Moreover, the notion that women are less likely to initiate violence and only use it as a means of defense (Makepeace, 1986) has also been debated. Specifically, "common couple violence", which results from conflict within romantic pair bonds, is often found in younger-aged samples. This kind of violence, although less severe, tends to be perpetrated equally by both men and women (Straus & Gelles, 1986). Indeed, it has been shown that 50% of violent couples were shown to be bi-directionally violent (Archer, 2000). However, when women commit domestic violence, it does not usually end up with their partner being seriously hurt and those cases may therefore not appear in clinical or police records (Archer, 2000).

An additional gender-neutral approach is provided by family studies which investigate men and women as both perpetrators and victims of IPV and sexual coercion. Indeed, family conflict studies reveal that men and women tend to perpetrate violence against an intimate partner at similar rates (symmetry). One such finding was demonstrated in a meta-analytic review of 82 studies, further suggesting that women may even be slightly more likely to employ IPV than men (Archer, 2000). Additionally, Straus (2007) showed that women perpetrate physical violence against their intimate partners at equal or higher rates than men and that motives for IPV tend to be aligned between the sexes. Further studies show that women tend to be more aggressive in intimate relationships and are more likely to perpetrate domestic violence (Bell & Naugle, 2007; Harned, 2001). Additional evidence that IPV perpetration is gender neutral comes from numerous studies revealing the existence of IPV among gay and lesbian couples (Rolle, et al., 2018).

It is therefore necessary to explore both men and women as perpetrators of IPV and sexual coercion. However, when investigating gender differences in IPV, the different domains of IPV should be distinguished in that gender symmetry may not extend to other forms of aggression or abuse against a partner. For example, although there are some studies indicating that women commit sexual coercion (Struckman-Johnson & Anderson, 1998), and international data from official police and court reports revealed that 4-5% of sexual offences were committed by women (Cortoni, Hanson, & Coache, 2010), sexual assault against an intimate partner largely involves male perpetrators (e.g., Goetz & Shackelford, 2006; Hadi, 2000). This is in line with Burch and Gallup's (2019) findings that sexual jealousy may lead to increased mate guarding and sexual violence in men. Moreover, male violence toward their female partner was found to shift from sexual coercion to physical assault when she was pregnant. This implies that aggression in men increased when they were suspicious of female infidelity and potentially raising unrelated offspring.

Indeed, from an evolutionary psychological perspective, one of the most serious threats to men's reproductive success is cuckoldry as this not only puts men at risk of losing an opportunity of reproduction, but moreover of investing resources in unrelated offspring (Goetz & Shackelford, 2006). As such, violence in men may function as a strategy to dominate and control a woman's sexuality to prevent her from infidelity and may therefore provide reproductive benefits for men. Indeed, Stieglitz and colleagues (2018) demonstrated that IPV predicted greater marital fertility among Tsimané forager-horticulturalists of Bolivia, and Kanazawa (2008) demonstrated that violent men and battered women from Britain and the US have significantly more sons. This may

further support the evolutionary argument that IPV could have evolved as an adaptive strategy under certain circumstances (Buunk & Massar, 2019).

However, women also have been found to perpetrate abuse against an intimate partner due to jealousy and anger (Harned, 2001). Given that from an evolutionary perspective, a threat to women's reproductive success could mean loss of paternal investment, women have evolved to be especially sensitive to cues that suggest that their intimate partner's commitment is fading. In response to such threats, a woman could resort to mate-guarding strategies to prevent her intimate partner from leaving the relationship for another woman and depriving her and her offspring of resources (Goetz & Shackelford, 2006). In that case, violence in women may function as a mate-guarding strategy in response to emotional jealousy and during times of conflict. An evolutionary perspective therefore views these situations as recurrent adaptive problems and raises the possibility that IPV and sexual coercion perpetration may have evolved as a context-dependent solution to deal with these problems.

In that respect, an evolutionary perspective seems to complement these other theoretical perspectives on intimate partner violence (e.g., Shorey, Cornelius, & Bell, 2008) by emphasizing context-dependent determinants (e.g., self-defense and relationship threats) related to intimate partner violence (Wilkinson & Hamerschlag, 2005), and suggesting that control over women's sexuality and reproduction is a central motive of men's coercive behavior (Buss & Schmitt, 2017). For instance, it may be possible that violence evolved as a situation-dependent solution to those problems, such as to center or limiting a woman's autonomy to maintain control and retain her as a romantic partner. Therefore, by offering a functional analysis of recurrent adaptive

problems and outlining the preliminary factors that can lead to IPV and sexual coercion, an evolutionary perspective may provide a comprehensive framework for existing gender differences in IPV and sexual coercion perpetration. This theme will be further explored in Chapter 2.

In addition, there is evidence that resource scarcity is associated with an increase in intimate partner violence (e.g., in the US, Flynn & Graham, 2010 and in Turkey, Balci & Ayranci, 2005). Flynn and Graham (2010) concluded that this relationship was mediated by stress. Indeed, factors such as economic deficits, alcohol and drug abuse can contribute to psychological stress, which in turn increases the risk of employing violence against an intimate partner. An evolutionary psychological perspective compliments this "stress hypothesis" by explaining that a man's failure to provide resources can lead to marital dissatisfaction and marital conflict (Buss, 1989b). Indeed, men who cannot provide resources may resort to cost-inflicting tactics to retain their romantic partners (Wilson & Daly, 1993). This is of particular importance in light of the recent COVID-19 pandemic.

1.6 Attachment Perspective on Stress

Once Covid-19 was pronounced a pandemic, countries have adopted severe measures such as social distancing, isolation, and quarantine to slow down and contain its spread (van Gelder et al., 2020; Campbell, 2020). Although these essential public health strategies were paramount for infection control, they required individuals to stay home leading not only to fear and worry about health, but moreover about economic consequences (e.g., rising unemployment figures; Kennedy, 2020), shortages of essential

resources, and childcare obligations as the result of school closures. Moreover, the uncertainty surrounding the duration of the lockdown and the progression of the pandemic with a depletion of social support due to isolation, or intensified proximity and contact between couples and families, individuals world-wide have been placed into a prolonged period of stress. Indeed, the average stress level related to COVID-19 as well as the general stress level in American adults was significantly higher than the average stress level reported in the previous year (Annual Stress in America, 2019; Kennedy, 2020) and a tracking poll showed that 53% of adults in the US reported that Covid-19 has had a negative impact on their mental health (KFF, 2020). The American Psychological Association (APA) further predicted that the negative mental health impact of the pandemic could be severe and long-lasting.

Previous and recent evidence suggest that isolation and quarantine experiences can have psychological consequences such as high levels of anxiety, anger, confusion, and stress (Brooks, Webster, Smith, Wessely, Greenberg et al., 2020). For example. studies conducted in China showed that people's fear of the unknown nature of Covid-19 was associated with mental disorders (Shigemura et al., 2020) and those affected, demonstrated several symptoms of mental trauma including depression, post-traumatic stress, and anger (Brooks et al., 2020; Rubin & Wessely, 2020; Wang et al., 2011). Indeed, there has been a significant increase of anxiety and depression since the onset of Covid-19 (Usher et al., 2020).

However, stress does not only impact individuals personally but moreover takes a toll on their interpersonal relationships. For instance, stress has been linked with intimate partner violence (IPV; Cano &Vivian, 2001; Capaldi et al., 2012; Frye & Karney, 2006; Langer et al., 2008; Mason & Smithey. 2012; Roberts et al., 2011; van Gelder et al., 2020). IPV refers to any behavior carried out to inflict physical harm to romantic partners

(Anderson & Bushman, 2002; Baron & Richardson, 1994) and is a public health and human rights issue worldwide (Magdol et al., 1997; McLaughlin, Leonard, & Senchak, 1992; Straus, 2004). Indeed, since social isolation and stay-at-home measures came into force to slow down the spread of Covid-19, countries around the world have reported a significant increase in domestic abuse cases (Campbell, 2020; Peterman et al., 2020; van Gelder et al., 2020). For instance, domestic abuse cases rose threefold in Wuhan, the first province in China under mass quarantine (Allen-Ebrahimian, 2020), and Europe saw a significant increase of domestic violence with several reports of homicide related to family violence (Bradbury-Jones & Isham, 2020; Wagers, 2020). The National Domestic Abuse Hotline in the UK reported a 25% increase in calls since the Covid-19 lockdown (Kelly & Morgan, 2020) and both Italian and French governments commissioned hotels to shelter the rising number of individuals fleeing abusive homes (Davies & Batha, 2020). In addition, the US saw a rise from 21% to 35% domestic violence cases across several states (Wagers, 2020) and Google reported a 75% increase of domestic abuse support searches (Poate, 2020). An evolutionary perspective on stress may provide a framework for understanding the increases in IPV perpetration during Covid-19.

1.7 Evolutionary Perspectives of Stress

In addition to reproduction and energy acquisition, defensive behaviors (e.g., fight and flight), a set of responses to threat stimuli have evolved to ensure survival (Gilbert, 2001). For instance, when individuals encounter certain threats such as to their health, resources or relationships, an effective defence response enables the individual to escape, avoid or adjust to the stressors (Nesse, 2000; Rosen & Schulkin, 1998). From this perspective, fear, and anxiety function to signal a threat in the environment which then trigger certain adaptive defence responses (Nesse, 2001; Bateson et al., 2011). Because

most defence responses are inexpensive and protect against potential harms, an optimized stress and defence system will express many alarms even when they may be unnecessary in some circumstances. This is referred to as the smoke detector principle (Nesse, 2005; Stein & Bouwer, 1997), which explains that even when danger is rare it may be beneficial to experience anxiety frequently, because the costs of failing to detect actual dangers outweigh the costs of being unnecessarily anxious (Nesse, 2005).

However, when individuals are motivated by external or internal cues to escape, seek support or protest, but are not able to, their defence system will remain active. In such cases, individuals may not come to terms with the stressful event and risk entering a dysregulated state characterized by excessive rumination, desires to fight or escape with no solution in sight which could result in maladaptive anxiety disorders (McGuire & Troisi, 1998; Nesse, 2001).

1.8 Stress Regulation and the Attachment System

During evolutionary history, infants heavily relied on primary caregivers for their survival to reproductive age. Attachment theory therefore posits that infants are born with an innate psycho-biological system (the attachment system; Bowlby, 1973) which gets activated during times of stress and functions to motivate proximity-seeking to an attachment figure for safety, comfort, and support (Bowlby, 1969, 1982; Mikulincer & Shaver, 2007). Once this is achieved and the infant feels safe, the attachment system is deactivated. If the attachment figure is consistently available and responsive to the infant's needs, a secure attachment orientation develops over time which is characterized by a sense of safety, experiences of reassurance effective stress-response regulation (Bowlby, 1973; Bretherton & Munholland, 2008).

Conversely, when an infant's needs for safety and protection are not met by the attachment figure, the attachment system remains activated. Over time, worries and insecurities about proximity seeking can lead to an insecure attachment orientation, which may increase distress and lead to the use of defence strategies. The two dimensions of an insecure attachment style are anxiety and avoidance.

Anxious attachment represents the degree to which individuals are preoccupied with personal relationships and are monitoring events for signs of threats. Because anxious individuals are uncertain about whether they can rely on attachment figures, they tend to feel distressed and insecure in their personal relationships and are therefore more likely to use hyperactivating coping strategies such as protest behaviors to seek proximity and reassurance from intimate partners (Bowlby, 1973). As a result, their attachment system is chronically activated (Mikulincer & Shaver, 2007). Conversely, those who score low on anxiety (secure attachment) tend to feel secure about their relationships and do not worry about being rejected or abandoned by intimate partners.

Avoidant attachment represents the degree to which individuals are comfortable with intimacy in personal relationships. Because individuals who score high on avoidant attachment believe that proximity-seeking to attachment figures is not possible, they are motivated to use deactivating coping strategies (Mikulincer et al., 2003) whereby individuals distance themselves and suppress negative thoughts and emotions to promote independence, control, and autonomy in personal relationships (Mikulincer & Shaver, 2007). Conversely, people low on avoidance (securely attached individuals) tend to be comfortable with intimacy and dependency in their relationships. Although several studies report that women often score higher on anxiety whereas men score higher on avoidance, these gender differences are small, and do not seem to impact relationship outcomes (Shaver & Mikulincer, 2007).

1.8.1 Predicting PTSD and Depression from Attachment Styles

Attachment strategies have been shown to influence the appraisal of negative events (Alexander, Feeney, Hohaus, & Noller, 2001; Berant, Mikulincer, &. Florian, 2001; Birnbaum, Orr, Mikulincer, & Florian, 1997; Mikulincer & Florian, 1998) and how individuals cope with threats has been associated with their attachment style. For instance, individuals who are relatively secure tend to cope with threats by effectively seeking out others for support (Mikulincer & Florian, 1995, 1998; Mikulincer et al., 1993). Such individuals also have a strong sense of self-efficacy, reliance on problem-solving coping strategies for managing personal and interpersonal stressors, as well as positive affect (e.g., Birnbaum, Orr, Mikulincer, & Florian, 1997; Collins & Read, 1990; Lussier, Sabourin, & Turgeon, 1997; Mikulincer, 1998; Mikulincer & Florian, 1995).

Individuals who score high on attachment anxiety or avoidance (insecure attachment style) have developed different strategies to cope with stress. For instance, anxious attachment has been linked to distress-intensifying appraisals whereby threats are experienced as extreme and coping resources as deficient (Mikulincer & Shaver, 2013; Shaver & Mikulincer, 2007). Moreover, whereas individuals with an anxious attachment style tend to seek help from others to regulate negative emotions during distress, those with an avoidant attachment style are more likely to take their distance from others in times of distress (e.g., Collins & Feeney, 2000; Mikulincer, 1998; Mikulincer, Florian, & Weller, 1993; Mikulincer, Orbach, & Iavnieli, 1998; Ognibene & Collins, 1998; Pietromonaco & Feldman Barrett, 2000; Simpson, Rholes, & Nelligan, 1992). However, the findings for how individuals with an avoidant attachment respond to adversity are less consistent. For instance, some studies found that avoidant individuals show distress-

intensifying and pessimistic patterns of appraisal when confronted with traumatic life events, which is similar to people with an anxious attachment style (e.g., Berant et al., 2001; Mikulincer & Florian, 1998).

Indeed, Mikulincer and colleagues (2004) proposed that avoidant deactivating strategies seem to collapse under chronic and demanding stressful conditions, causing avoidant individuals to have higher levels of distress than anxious individuals. This suggests that prolonged and intense stress could alter characteristic defences in people with an avoidant attachment, which could lead them to employ defences that are characteristic of those of individuals with an anxious attachment.

Insecure attachment-based coping strategies have been further linked to hyperactivating behaviors such as chronic hypervigilance of the environment, a lack of self-efficacy, and internalizing problems – all of which tend to reinforce stress and have been previously associated with low resilience (Cicchetti, 2010). Therefore, individuals with an insecure attachment style may be more at risk of developing anxiety disorders such as depression (e.g., Carnelly, Pietromonaco, & Jaffe, 1994) and PTSD (e.g., Bartholomew, 1990; Riskind et al., 2004; Safford, Alloy, Crossfield, Morocco, & Wang, 2004; Williams & Riskind, 2004).

Indeed, insecurely attached individuals are more likely to become emotional, argumentative, controlling, and intrusive under distress (Kunce & Shaver, 1994; Mikulincer et al., 1993). Specifically, those who score high on anxious attachment report more intense emotions, greater fluctuations in their emotions, as well as greater emotional reactivity to distress (e.g., Collins & Read, 1990; Hazan & Shaver, 1987; Pietromonaco & Feldman Barrett, 1997). Moreover, Simpsons and colleagues (1996) found that individuals experienced greater distress and emotional reactivity even when the context

was not experimentally defined as threatening. This suggests that individuals higher in anxious attachment may perceive a variety of contexts as threatening (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Mikulincer, Gillath, & Shaver, 2002; Simpson, Rholes, & Phillips, 1996).

1.8.2 Predicting IPV from PTSD and Depression

Anxiety disorders such as post-traumatic stress disorder (PTSD) or depression are consequences of heightened and prolonged arousal of ineffective or dysfunctional defence responses to chronic stress and typically follow major negative life events (Gilbert, 2001; Mineka and Zinbarg, 1996; Rosen & Schulkin, 1998). However, from an evolutionary psychological perspective, PTSD and depression are independent strategies used in response to adversity. For instance, whereas PTSD should induce action preceding an adversity and has been associated with increased aggression (e.g., meta-analysis, Orth & Wieland, 2006; Taft et al., 2011), depression should induce a lack of action (Brown, Harris, & Hepworth, 1995) when it would be otherwise too energetically expensive or risky (Nesse, 2002; Nettle & Bateson, 2012). Indeed, a readjustment study using a sample of Vietnam veterans found that about a third of participants with PTSD perpetrated IPV at three times the rate of those without PTSD and the general public (Orcutt et al., 2003).

An alternative coping strategy from a failure to control stress can be depression (Gilbert, 2006; Nesse, 1999). This has been referred to as ‘learned helplessness (Miller & Seligman, 1975; Peterson et al., 1993) and is in line with the arrested defences model (Dixon, 1998; Gilbert, 2001) which maintains that if innate defences (e.g., fight or flight) are aroused but not acted on (e.g. suppressed anger) or if they fail to reduce the experienced threat, they can result in chronic stress activation in these systems (Gilbert,

2006; Tooby & Cosmides, 2008). Indeed, unlike PTSD, depression was found to decrease aggressive responses and increase provisioning of social benefits in times of conflict (Hagen, 1999, 2002; Hagen & Thomson, 2004; Shaver, & Tancredy., 2001; Sheeber, Hops, & Davis, 2001; Watson & Andrews, 2002). Moreover, Hagen (1999) proposed that depression could be a social manipulation strategy to elicit help from others in times of need by demonstrating that postpartum depression tends to occur in women who experience a lack of support from their partner. Although it follows that both PTSD and depression are triggered by an overarousal of stress and a failure to deactivate and regulate the stress system preceding an adversity (Gilbert, 2001; Mineka and Zinbarg, 1996; Rosen & Schulkin, 1998), individuals vary in their sensitivity to threats and arousal of negative emotions.

1.8.3 Predicting IPV from Attachment Styles

Stress has been consistently associated with violence in intimate relationships and some studies suggest that stressful experiences can increase the likelihood of couples' physical and psychological IPV (MacEwen & Barling, 1988; Neidig et al., 1986). For instance, when newlywed couples experienced acute stress (e.g., encountering unexpected expenses, having a school application rejected, being passed over for a work promotion) both husbands and wives were more likely to employ psychological IPV (Frye & Karney, 2006). Higher chronic stress in husbands was further associated with IPV perpetration (Frye & Karney, 2006). Married couples who experienced external stressors (e.g., related to work, finances, relationships) were further found to be more likely to engage in verbal aggression towards each other (Bodenmann et al., 2010). Moreover, for newlywed couples increases in chronic stress (e.g., related to health, family/friends/in-laws, work, or school) were related to increased IPV perpetration (Langer et al, 2008).

Combined, these studies suggest that stress can indeed have negative consequences for individuals in intimate relationships and may provoke IPV.

Individual differences in attachment could explain how individuals regulate their anger in times of stress (Bowlby, 1973). For example, greater dysfunctional anger has been previously reported by individuals with an insecure attachment (Kobak, Sudler, & Gamble, 1991; Mikulincer, 1998). According to Bowlby (1973), anger may function as an adaptive protest reaction to others (e.g., Mikulincer, 1998). From this perspective, just like an infant's vocalization of anger and protest behaviors may draw the attachment figure closer, individuals with an insecure attachment who experience anxiety or anger due to heightened stress may resort to similar defences that could lead to conflict escalation and violence (Tolmacz, Bachner-Melmam, Lev-Ari, & Almagor, 2022). Moreover, provided that negative affect had been previously associated with violence (Shorey et al., 2015), people with an insecure attachment style who are less likely cope well with the demands of stress, may experience increased negative affect and greater frustration which could make them more susceptible to employing IPV toward intimate partners in times of distress (Weidemann & Chopik, 2022).

Indeed, it has been consistently shown that individuals with an insecure attachment style tend to be more violent (Bond & Bond, 2004; Henderson, Bartholomew, Trinke, & Kwong, 2005; Schumacher, Feldbau-Kohn, Smith Slep, & Heyman, 2001; Stith, Smith, Penn, Ward, & Tritt, 2004). Specifically, anxious attachment has been associated with IPV perpetration (Babcock, Jacobson, Gottman, & Yerington, 2000; Barbaro et al., 2019; Dutton, Saunders, Starzomski, & Batholomew, 1994; Gentzler & Kerns, 2004; Sommer, Babcock, & Sharp, 2017; Velotti et all., 2018; Velotti et al., 2022; West & George, 1999). However, a meta analysis (Velotti et al., 2022) demonstrated that while significant effect sizes for anxious attachment in relationship to IPV were

consistent, effect sizes for avoidant attachment in relationship to IPV were inconsistent. A recent study suggested that attachment anxiety and avoidance may interact to predict IPV perpetration in men (Barbaro et al., 2018). Although several empirical studies focused exclusively on male perpetrators in relation to attachment orientation and IPV, gender-neutral studies investigating the role of attachment representations in association with IPV perpetration have shown no gender differences (e.g., Archer, 2000; Hines, 2015; Rolle et al., 2018). Empirical evidence demonstrates that insecure attachment predicts IPV perpetration in both men and women (Finkel, 2007).

Although the link between insecure attachment and IPV has been well established, few studies have examined the specific stressors and life events that can trigger stress defences in individuals (Byun, 2012; Elkins et al., 2013; Finkel, 2007; Finkel & Eckhardt, 2013; Langhinrichsen-Rohling et al., 2012a; Whitaker, 2013) that could induce the employment of IPV perpetration. This theme will be explored in Chapter 3.

1.9 The role of Relationship Quality

Relationship quality plays a protective role in individuals' well-being and health during times of stress (Pietromonaco & Collins, 2017). Therefore, maintaining intimate relationships may be crucial to face challenging life events such as the COVID-19 pandemic. Specifically, lockdown measures required couples to balance childcare and work obligations while isolated from social and sometimes necessary financial resources. However, anxiety due to economic insecurity and social loss could interfere with relationship quality, especially for those with pre-existing vulnerabilities, such as insecure attachment style (Pietromonaco & Overall, 2020). According to Pietromonaco and Overall (2020) attachment insecurity may play an important role in determining

how individuals adapt to stress from the pandemic. Indeed, attachment insecurity is a well-studied personal vulnerability that has been consistently associated with poor relationship quality and problematic dynamics during stressful times that strain relationship functioning (Joel et al., 2020; Mikulincer & Shaver, 2007; Simpson & Rholes, 2017). This theme will be explored in Chapter 4.

1.9.1 Enduring Vulnerabilities: Own and Partner Attachment Insecurity

Attachment anxiety stems from inconsistent caregiving in childhood that can promote specific behaviors in adult intimate relationships. For example, individuals with an anxious attachment style tend to be fueled by fears of abandonment and rejection from intimate partners and expect partners to be unresponsive. Consequently, these individuals persistently seek closeness and reassurance from intimate partners, which can come across as needy or clingy (Mikulincer & Shaver, 2003). Anxious individuals' fears can be exacerbated by heightened distress, and they may react to threatening events with destructive reactions, which are associated with several relationship problems such as poor communication, jealousy, unrealistic expectations, poor relationship quality and increased conflict (Campbell et al., 2005; Jayamaha et al., 2017; Overall et al., 2014; Simpson et al., 1996).

Conversely, attachment avoidance stems from neglectful caregiving in childhood that can promote deep-rooted beliefs that intimate partners cannot be trusted (Mikulincer & Shaver, 2003). Such distrust motivates avoidant individuals to avoid closeness and intimacy (Pietromonaco & Barrett, 1997; Tan et al., 2012). Consequently, avoidant individuals tend to suppress distress and reject support from intimate partners (Girme et al., 2015; Simpson et al., 1992), withdraw when their partner needs support

(Simpson et al., 2002). Further, these individuals tend be more withdrawn, unresponsive, and may be hostile in conflict (Overall et al., 2013, 2015; Simpson et al., 1996). These distancing strategies can lead to several relational problems, such as poor communication and power struggles, as well as poor problem resolution and poor relationship quality (Overall et al., 2013, 2015; Tan et al., 2012).

The typical reactions to distressing events by individuals with attachment anxiety or avoidance are likely to disrupt relationship functioning during the COVID-19 pandemic. Additionally, because partners' attachment insecurity either anxious or avoidant may create problems for individuals, relationship functioning may be further impacted by one's partner's attachment style. For example, individuals with highly anxious partners may face excessive reassurance seeking, and destructive responses during challenging times. Consequently, during conflict individuals with highly anxious partners may find it challenging to be responsive, seek support from partners and resolve relationship problems (Beck et al., 2013; Jayamaha et al., 2016, 2017; Overall et al., 2015), and in turn may be less satisfied and committed (Butzer & Campbell, 2008; Carnelley et al., 1996; Overall et al., 2015). Whereas individuals with highly avoidant partners may endure partners' distancing strategies that reduce support and intimacy, create more hostile and dissatisfying interactions, and ultimately lower commitment and satisfaction (Beck et al., 2013; Butzer & Campbell, 2008; Carnelley et al., 1996; Girme et al., 2015; Overall et al., 2013, 2015; Simpson et al., 2002, 2007; Tan et al., 2012). As such, partners' attachment insecurity may hinder adaptation to COVID-19 lockdowns and predict poorer relationship quality. This theme will be further explored in Chapter 5.

2 Outstanding Questions and Future Research

In summary, addressing social adaptive problems necessitates the deployment of various strategies, with violence being just one of them (Buss & Duntley, 2011). To gain insights into the contexts where violence becomes a factor in intimate relationships and to identify the personal and interpersonal elements that heighten the propensity for its use, it is crucial to delineate the adaptive problems that typically trigger coercive tactics. Within romantic relationships, these adaptive problems appear to revolve around the fear of losing a partner, along with the subsequent loss of essential resources tied to the intimate pair-bond. Additionally, there are events that pose a threat to the preservation of these resources (Buss, 2017). By revealing the adaptive design of the psychological mechanisms that generate intimate partner violence behavior (including what cultural, situational, dyadic, and developmental triggers activate its behavioral expression), this work can strategically improve efforts to reduce violence in our world.

While there is evidence supporting these evolution-based hypotheses, many of these theories remain underexplored. To comprehensively explore when and why violence emerges in intimate relationships, as well as to understand the individual and interpersonal factors contributing to a person's predisposition for violence, it becomes imperative not only to outline the adaptive problems triggering coercive tactics but also to pinpoint the precise circumstances prompting individuals to resort to violence. This section outlines some of the gaps in the existing literature and proposes potential methodologies to address the outstanding questions.

2.1 Question 1: Can gender differences in IPV and sexual coercion perpetration be found world-wide?

As discussed, there has been a debate regarding sex differences in IPV and sexual coercion perpetration. Chapter 2 explores this topic further by testing whether these differences exist across 57 nations. In line with the previous literature derived from research in family conflict and evolutionary psychology, the study presented in this chapter hypothesizes that women would perpetrate physical violence against an intimate partner more than men and conversely, and that men perpetrate more sexual coercion against intimate partners than women.

2.2 Question 2: Is insecure attachment associated with IPV/sexual coercion world-wide?

Most studies that have investigated differences in attachment styles related to IPV and sexual coercion perpetration have used WEIRD samples. The study presented in Chapter 2 further investigates the associations between insecure attachment and IPV and sexual coercion perpetration across 57 nations. Based on the previously established associations between attachment anxiety and IPV perpetration, it is suggested that there may be a difference between men and women in insecure attachment and the use of aggression such that men who perpetrate IPV and sexual coercion against a female partner would have a fearful attachment (negative model of self and negative model of other) whereas women who perpetrate IPV and sexual coercion against a male partner would have an anxious attachment (negative model of self and positive model of other).

2.3 Question 3: Are people with an insecure attachment more susceptible to using IPV during stressful life events (Covid-19 pandemic)?

According to previous research, IPV tends to increase during humanitarian crises (Chandan et al., 2020; Roesch et al., 2020; Stark & Ager, 2021). Indeed, the WHO and the UN reported a significant global rise in domestic violence in the face of Covid-19 (World Health Organization, 2020). Given that previous research has linked the perpetration of sexual violence to several aspects of romantic attachment, with anxious/preoccupied attachment styles most often linked to IPV and sexual coercion, it is important to understand the individual differences in stress responses and how COVID-19 can exacerbate mental health factors that are associated with IPV. The study presented in chapter 3 investigates whether anxious attachment predicts higher event-related anxiety (e.g., PTSD, depression) and sexual conflict (i.e., IPV perpetration).

2.4 Question 4: Does COVID-related PTSD erode secure attachment functioning?

It has been previously shown that PTSD may erode the functioning of a secure attachment style (Mikulincer, 2014). For example, Mikulincer and colleagues (2014) showed that ex-war soldiers who were kept in captivity reported less secure attachment functioning and became more insecurely attached. It may therefore be that chronic and prolonged PTSD may disrupt the normal functioning of secure attachment. However, more research is needed to determine whether this is the case especially if this can be translated to different kinds of trauma. The study presented in chapter 3 investigates this topic further by assessing whether chronic and prolonged stress due to COVID-19 may impact secure individuals' behavior and response to conflict.

2.5 Question 5: Does relationship quality buffer the relationship between PTSD and IPV perpetration?

The COVID-19 pandemic has provided changes and challenges to individuals and couples alike. Specifically, the stay-at-home and social distancing measures have posed unique challenges to how people and couples interact (e.g., Balzarini et al., 2020). These significant life changes and new stressors such as remote working, lack of privacy, increased childcare obligations due to home-schooling, and financial stressors such as unemployment from COVID-19 may have negatively impacted intimate relationships. Building on the study presented in chapter 3, the study presented in chapter 4 investigates whether the relationship between higher COVID-related PTSD and IPV perpetration is mediated by relationship quality. Specifically, the study aims to assess whether relationship quality could serve as a buffer against COVID-related PTSD and IPV for individuals who have an insecure attachment.

2.6 Question 6: Does partner's attachment style play a role in individuals' employment of IPV?

The anxious-avoidant trap has been well established (Alison et al., 2008), meaning that couples consisting of one anxious and one avoidant partner tend to fail to meet each other's attachment needs for closeness vs. distance. Such failure to achieve distance regulation may result in escalating conflict and IPV. From this perspective, IPV may be a maladaptive means of regulating closeness and distance to intimate relationship partners (Pistole, 1994). Specifically, these discrepancies between partners' preferences for intimacy may act as catalysts for the employment of IPV (Dutton, 1988). It may therefore be that the struggles over closeness and distance in intimate relationships have been exacerbated by the strict lockdown and stay-at-home measures

due to the COVID-19 pandemic. The aim of the study presented in chapter 5 is to test whether individuals' own, and their partner's attachment insecurity represent key pre-existing vulnerabilities in response to COVID-related stress that could affect their relationships quality and in turn increase IPV.

3. Thesis Overview

This thesis presents four empirical chapters investigating the role of attachment style in intimate relationship quality and conflict, specifically how different forms and levels of attachment security link to patterns of intimate partner violence (IPV). IPV is a major public health concern, with increasing rates of IPV being seen around the world during the COVID-19 pandemic (Lyons & Brewer, 2022).

In Chapter 1, I will review previous research that has linked the perpetration of IPV and other forms of sexual violence to aspects of romantic attachment, with anxious/preoccupied attachment styles most often linked to higher rates of IPV (Velotti et al., 2022).

The study presented in Chapter 2, is a secondary analysis of samples derived from the ISDP-2 (International Sexuality Description Project, Schmitt, 2005). The aim of the study was twofold: First, sex differences in IPV and sexual coercion perpetration were investigated. Second, the associations between the attachment dimensions (both model of self and model of other) and IPV and sexual coercion perpetration were examined. It was hypothesized that anxious attachment (i.e., possessing a negative model of self) would be associated with both IPV and sexual coercion perpetration. Additionally, gender differences across the anxious attachment dimension, such that anxious attachment (preoccupied vs. fearful) were predicted to differ among men and women in association with IPV perpetration. We found that insecure attachment style was associated with IPV

across 57 nations. The research represents the first cross-cultural investigation into individual differences in romantic attachment in association with IPV and sexual coercion perpetration.

In Chapter 3, I explore the effects of COVID-19 on intimate relationships, specifically on links between attachment security and IPV perpetration. The aim of the study was to investigate whether attachment insecurity makes individuals more susceptible to perpetrate violence against an intimate partner in the face of a stressful life event. The study has been published in *Archives of Sexual Behavior* (Gottlieb & Schmitt, 2023) as part of a special COVID-19 issue. In this study, we investigated whether COVID-related anxiety and depression during the pandemic predicted increased IPV perpetration and whether this relationship was moderated by attachment style. Given that from an evolutionary psychological perspective, anxiety should function to increase activity preceding a stressful event, whereas depression should function to decrease activity following a stressful event, it was expected that higher COVID-related anxiety (as indexed via post-traumatic stress disorder; PTSD) would *activate* IPV perpetration and that higher COVID-related depression would *deactivate* IPV and that these relationships would be moderated by insecure attachment. Our findings indicated that higher COVID-related stress was significantly associated with increased IPV perpetration *only in securely attached* individuals, whereas depression was significantly linked with decreased IPV perpetration *only in securely attached* individuals. Insecurely attached individuals displayed different patterns. These unexpected but important findings suggest those with secure attachment styles and their partners may be particularly susceptible to external life stressors and may be more at risk of perpetrating IPV under heightened and prolonged distress. Our findings are discussed within evolutionary frameworks of

attachment and the adaptive functions of anxiety and depression. The present findings may serve to raise awareness and motivate clinical or behavioral interventions to more efficiently help both victims and perpetrators of IPV stay safe while staying home.

Chapter 4 is a follow up study using the same data collected during the first few months of the pandemic (during the global lockdown). This study investigated whether *relationship quality* mediates the attachment-moderated association between COVID-19 related PTSD and IPV perpetration. The results of the study indicated that relationship quality may serve as a buffer against IPV perpetration but *only in individuals with an insecure* attachment style. This finding may have important clinical implications as it suggests that helping insecure individuals be more satisfied with their romantic relationship could reduce their employment of IPV.

In Chapter 5, I investigate the role of partner's attachment style in two aspects of relationship quality evaluations: satisfaction and commitment, and IPV perpetration during COVID-19. Individuals with an insecure attachment style, specifically those with an anxious attachment style, are characterized by a hypervigilance to relational threats and tend to monitor and seek constant reassurance and proximity to intimate partners. Therefore, individuals with an anxious attachment style who are partnered with someone avoidant should report greater relationship quality and commitment due to more time spent together in lockdown, however they should also report increased IPV due to discrepancies in their needs for closeness to their intimate partners. The key finding of the study revealed that anxious individuals who are partnered with avoidant individuals experience higher levels of relationship commitment while also reporting higher levels of IPV perpetration. These results suggest that anxious attachment may not only promote IPV, but moreover the maintenance of abusive relationships.

Chapter 6 summarizes the results from the empirical chapters and concludes this thesis, which investigated how individual's attachment styles impact IPV perpetration, and consequently shape relationship functioning in the time of COVID-19. The key findings of this thesis are that cross-culturally, both men and women with an insecure attachment style may be more susceptible to employ violence during conflict (study 1). However, under heightened levels of COVID-related PTSD, individuals with a relatively secure attachment style tend to perpetrate significantly higher levels of violence against intimate partners whereas insecure individuals employ IPV regardless of COVID-related PTSD (study 2). It may be that relationship quality serves as a buffer for IPV in insecure individuals who experience heightened COVID-related PTSD (study 3). Finally, positive, or negative evaluations of relationship quality may be related to how insecure individuals' attachment needs are met by romantic partners. Anxious individuals are more at risk of perpetrating IPV. This risk increases when they are in intimate relationships with avoidant partners as they may not be able to meet the anxious partner's attachment needs. However, anxious individuals are more committed to avoidant partners which could trap them in dysfunctional relationships and ultimately lead to abuse. As such, the interplay of attachment styles in a couple could be crucial in reducing IPV (study 4).

Overall, this thesis highlights the importance of understanding the underlying individual and interpersonal working models in the context of chronic life stressors such as the COVID-pandemic. The results suggest that insecure attachment styles may not only promote IPV but moreover may influence the maintenance of abusive and dysfunctional relationships. As such, this work is improving people's lives by revealing the (not always obvious or conscious) psychological mechanisms that impart violence on our world.

Chapter 2

Where in the World Does Attachment Insecurity Most Lead to Intimate Partner Violence and Sexual Coercion Perpetration? Cross-Cultural Evidence across Seven Major World Regions

2.1 Study 1

2.1.1 ABSTRACT

Intimate partner violence (IPV) and sexual coercion are major public health concerns. Previous research has linked the perpetration of sexual violence to several aspects of romantic attachment, with anxious/preoccupied attachment styles most often linked to IPV and sexual coercion. In the present research, findings from the International Sexuality Description Project 2—a survey study of more than 35,000 people from 58 nations—revealed that women are universally more likely to perpetrate IPV against intimate partners, whereas men are universally more likely to perpetrate sexual coercion against intimate partners. Similar to previous attachment results from Western cultures, both men and women with an anxious/preoccupied attachment style (particularly those possessing a negative "model of self") tended to more often perpetrate IPV and sexual coercion against intimate partners across most cultures. Unlike previous attachment findings, we found there may be universal gender differences in the association of "model of other" with IPV and sexual coercion. This study highlights the importance and utility

of combining cross-cultural and evolutionary approaches to understanding human romantic relationships.

2.1.2. INTRODUCTION

Intimate partner violence (IPV) and sexual coercion are common forms of relational aggression (Archer, 2019; Straus, 2004). From an evolutionary perspective it is possible these coercive tactics have a functional design, serving as strategically adaptive responses to specific types of conflict within romantic relationships (Magdol et al., 1997; McLaughlin, Leonard, & Senchak, 1992). In order to prevent physical and sexual abuse from occurring, it is important to understand the proximate factors that underly the special psychological design of IPV and sexual coercion. Doing so may help to reveal the key developmental, situational, and dyadic factors that can help us reduce the tendency for individuals to resort to aggressive behaviors in their intimate relationships. One of the most important factors in the special design of relational aggression appears to be the sex of the perpetrator (Archer, 2000; Dobash & Dobash, 2004; Straus, 1999).

Sex Differences in IPV/Sexual Coercion Perpetration

Sex differences in IPV have been a contested area of research for several decades (e.g., Kimmel, 2002; Saunders, 2002; Straus, 1999). Crime and feminist researchers often suggest IPV is more frequently employed by men than by women, with some estimates revealing that men carry out more than 90% of violent acts against a partner (Straus, 1999; Dobash & Dobash, 2004). From a feminist perspective, it is typically argued that women employ acts of violence against their partners only in self-defense. Indeed, a meta-analysis of longitudinal studies showed that about 30% of women worldwide have experienced some form of violence from an intimate partner

during their lifetime (Devries et al., 2013). In addition, a lifetime study by Garcia-Moreno and colleagues (2006) showed that in rural areas and cities across 10 countries women aged 15-49 (N = 24,097) reported a lifetime prevalence of physical and sexual violence from an intimate partner (see Alhabib, Nur, & Jones, 2010 for similar findings). Given such studies show physical and sexual abuse largely involves male perpetrators, feminist perspectives often argue that IPV is primarily a consequence of patriarchy (e.g., Dobash & Dobash, 1980). The patriarchal framework emphasizes the masculine nature of IPV (social role theory; Eagly, 1987) and suggests that it results from the societal power of men (Dobash & Dobash, 1977).

However, such studies tend to use data from clinic or domestic violence shelters which investigate "intimate terrorism" and is for the most part male perpetrated. In that context, women are always shown to be the victims of domestic abuse, despite the fact that men can be victims of female IPV and sexual coercion perpetration. Moreover, the notion that women are less likely to initiate violence and only use it as a means of defense (Makepeace, 1986) has also been debated. Specifically, "common couple violence", which results from conflict within romantic pair bonds, is often found in younger-aged samples. This kind of violence, although less severe, tends to be perpetrated equally by both men and women (Straus & Gelles, 1986). Indeed, it has been shown that 50% of violent couples were shown to be bi-directionally violent (Archer, 2000; Straus, 2007). However, when women commit domestic violence, it does not usually end up with their partner being seriously hurt and those cases may therefore not appear in clinical or police records (Hines, Brown, & Dunning, 2007).

An additional gender-neutral approach is provided by family studies which investigate men and women as both perpetrators and victims of IPV and sexual coercion. Indeed, family conflict studies reveal that men and women tend to perpetrate

violence against an intimate partner at similar rates (symmetry). One such finding was demonstrated in a meta-analytic review of 82 studies, further suggesting that women may even be slightly more likely to employ IPV than men (Archer, 2000). Additionally, Straus (2007) showed that women perpetrate physical violence against their intimate partners at equal or higher rates than men and that motives for IPV tend to be aligned between the sexes. Further studies show that women tend to be more aggressive in intimate relationships and are more likely to perpetrate domestic violence (Bell & Naugle, 2007; Cross et al., 2011; Harned, 2001).

It is therefore necessary to explore both men and women as perpetrators of IPV and sexual coercion. However, when investigating gender differences in IPV, the different domains of IPV should be distinguished in that gender symmetry may not extend to other forms of aggression or abuse against a partner. For example, although there are some studies indicating that women commit sexual coercion (Anderson & Struckman-Johnson, 1998), and international data from official police and court reports revealed that 4-5% of sexual offences were committed by women (Cortoni, Hanson, & Coache, 2009), sexual assault against an intimate partner largely involves male perpetrators (e.g., Finkelhor & Yllo, 1985; Goetz & Shackelford, 2006; Hadi, 2000). Evolutionary psychological explanations may provide a comprehensive framework for existing gender differences in IPV and sexual coercion perpetration.

Evolutionary Perspectives on Sex Differences in IPV/Sexual Coercion Perpetration

Humans have evolved a range of tactics to obtain reproductively relevant resources to either the benefit of their intimate partner (benefit-bestowing tactics), or at the expense of their intimate partner (cost-inflicting tactics; Buss, 1992; Frieze, 2005). Cost inflicting tactics in intimate relationships may involve psychological abuse, sexual

violence, rape, physical violence, and even murder (Buss, 1992; Frieze, 2005). Moreover, the evolutionary cost-benefit analysis holds that men's use of violence can lead to successful reproductive benefits (Kanazawa, 2005; Stieglitz et al., 2018). Indeed, Stieglitz and colleagues (2018) demonstrated that IPV predicted greater marital fertility among Tsimané forager-horticulturalists of Bolivia. Further studies showed that violent men and battered women from Britain and the US had significantly more sons than daughters (Kanazawa, 2005; 2008). As such, it may be argued that IPV could have evolved as an adaptive strategy under certain conditions (Buunk & Masser, 2019; Buss & Duntley, 1998). For instance, Burch and Gallup (2019) found that sexual jealousy led to increased mate guarding and sexual violence in men. Moreover, male violence toward their female partner shifted from sexual coercion to physical assault when she was pregnant. This implies that aggression in men increased when they were suspicious of female infidelity and potentially raising unrelated offspring. Indeed, from an evolutionary psychological perspective, one of the most serious threats to men's reproductive success is cuckoldry as this not only puts men at risk of losing an opportunity of reproduction, but moreover of investing resources in unrelated offspring (Buss & Duntley, 1998; Harned, 2001). As such, violence in men may function as a strategy to dominate and control a woman's sexuality in order to prevent her from infidelity.

However, women also have been found to perpetrate abuse against an intimate partner due to jealousy and anger (Harned, 2001). Given that a threat to women's reproductive success is the loss of paternal investment, women have evolved to be especially sensitive to cues that suggest that their intimate partner's commitment is fading. In response to such threats, a woman could resort to mate-guarding strategies to prevent her intimate partner from leaving the relationship for another woman and

depriving her and her offspring of resources (Buss, 1992). In that case, violence in women may function as a mate-guarding strategy in response to emotional jealousy and during times of conflict. An evolutionary perspective therefore views these situations as recurrent adaptive problems and raises the possibility that IPV and sexual coercion perpetration may have evolved as a context-dependent solution to deal with these problems. The question then becomes whether there are individual differences that make men and women more susceptible to perpetrating violence against intimate partners.

Attachment Theory and IPV/Sexual Coercion Perpetration

Attachment theory proposes that internal representations or working models of close attachment relationships begin in childhood and are incorporated into an individual's developing personality structure (Bowlby, 1973). Eventually these working models guide the formation and maintenance of romantic pair-bonds by motivating and regulating behavioral and cognitive responses to specific social circumstances (Hazan & Shaver, 1987). There are two primary attachment dimensions underlying attachment bonds to romantic partners: attachment avoidance and attachment anxiety (Brennan, Clark, & Shaver, 1998; Fraley, Waller, & Brennan, 2000). According to Bowlby (1988), these internal working models portray the extent to which individuals perceive themselves worthy of love and attention from others and the extent to which they perceive others to be supportive of them. This work has been further extended by Bartholomew and colleagues (1990; 1991) who used a two-dimensional model (model of self and model of other) which results in four attachment styles depending on individuals' views of themselves and others. For example, a secure attachment style reflects a positive view of both the self and other, whereas the preoccupied style,

reflects a negative view of the self but a positive view of other (characterized as anxious/ambivalent in Bowlby's model). However, the avoidant style is separated into dismissing attachment, whereby model of self is positive, but model of other is negative, and fearful attachment, whereby both model of self and model other are negative. Each attachment style is linked to unique behavioral and cognitive patterns in response to pair-bond threats (Shaver & Mikulincer, 2008). For example, a preoccupied attachment style is characterized by hyperactivation of the attachment system (Cassidy, 2000). This has been linked to hypervigilance to cues of abandonment or rejection by an intimate partner (Mikulincer & Shaver, 2007), increased sexual motivation (Davis, Shaver, & Vernon, 2004), and chronic jealousy (Sharpsteen & Kirkpatrick, 1997). Moreover, individuals with a preoccupied attachment tend to look for validation from others and may therefore seek excessive closeness from their intimate partners (Griffin & Bartholomew, 1994). Conversely, a dismissing attachment style is characterized by hypoactivation of the attachment system (Cassidy, 2000). This has been linked to efforts to shun emotional and physical intimacy in order to avoid being abandoned or rejected (Shaver & Mikulincer, 2008). Dismissing individuals tend to be self-reliant and independent (Edelstein & Shaver, 2004). Finally, fearful attachment is associated with a deep-rooted sense of unworthiness and high dependency on validation from others similar to those with a preoccupied attachment. However, fearful individuals tend to evade romantic intimacy due to their negative expectations of others, similar to individuals with dismissing attachment style. Men and women with anxious attachment report excessive dependence on their partners, fear of abandonment and rejection, jealousy, and discomfort with closeness (Babcock, Jacobson, Gottman, & Yerington, 2000; Dutton, 1995; Dutton, Saunders, Starzomski, & Bartholomew, 1994; Levy et al., 2005; Mauricio et al., 2007). Moreover, attachment anxiety has been linked to the use of

controlling and coercive behavior in romantic pair-bonds (Barbaro et al., 2018; Davis et al., 2004; Shaver & Mikulincer, 2008), the use of negative behaviors towards a romantic partner (Barbaro, Pham, Shackelford, & Zeigler-Hill, 2016), as well as the use of sex for manipulation (Davis et al., 2004). These variations in attachment bonds may function to evaluate and monitor anticipated or present risks of romantic relationship threats (Fraley & Shaver, 2000; Hazan & Diamond, 2000; Kirkpatrick, 1998). Feeney (1999) further suggested that coercive sexual behavior may be a means for men, who struggle to articulate their need for attention and reassurance, to gain proximity to a partner

It follows, that attachment theory provides a unique framework to the study of IPV and sexual coercion. Indeed, it has been consistently shown that violent men and women tend to have preoccupied and fearful attachment styles (Bond & Bond, 2004; Henderson, Bartholomew, Trinke, & Kwong, 2005; Schumacher, Feldbau-Kohn, Smith Slep, & Heyman, 2001; Stith, Smith, Penn, Ward, & Tritt, 2004). Specifically, anxious attachment styles have been associated with both male and female IPV perpetration (Babcock, Jacobson, Gentzler & Kerns, 2004; Gottman, & Yerington, 2000; Dutton, Saunders, Starzomski, & Batholomew, 1994; Gormley & Lopez, 2003; Tracey et al., 2003; West & George, 1999). Several studies also demonstrate that in men, attachment anxiety and avoidance are associated with employing physical violence and coercive strategies toward intimate partners (Smallbone & Dadds, 2000, 2001; Tracey et al., 2003). Indeed, attachment avoidance has only been associated with IPV perpetration in men, but not in women (McKinley et al., 2007; Spidel et al., 2007). Additionally, one study by Barbaro and colleagues (2018) suggests that attachment avoidance may be predictive of male sexual coercion perpetration but only in interaction with relatively high attachment anxiety, which is characterized as fearful attachment. These studies

demonstrate that attachment anxiety, specifically fearful attachment (negative model of self and negative model of other) may be particularly indicative of male IPV and sexual coercion perpetration. Conversely, anxious attachment, specifically preoccupied attachment (negative model of self and positive model of other) may be particularly indicative of female IPV and sexual coercion perpetration.

Ecological Variability in IPV/Sexual Coercion Perpetration and Attachment Dimensions

A variety of cultural differences have been associated with IPV. For instance, a country's GDP rate could be a factor in explaining sex differences in IPV perpetration in that a country's developmental status influences the degree of equality between the sexes (United Nations Development Programme, 2013). Indeed, Archer (2006) suggests that in societies with higher individualism and gender equality, aggression seems to be more equally distributed across the sexes. Moreover, there seems to be a rate increase of female perpetration of IPV in nations with more gender equality (Archer, 2006). Sex differences in IPV have also been related to individualist and collectivist countries with effect sizes showing more female perpetration of violence relative to men in individualist countries (Archer, 2006). Additionally, in high power distance countries the use of violence is viewed as the essence of power, whereas in low power distance cultures it is viewed as a breakdown of power (Hofstede, 2001). A cross-cultural study (16 nations) found that the lower the women's power was in a nation, and the more collectivist the culture, the more in the male direction was the sex difference in physical aggression (Archer, 2006a). Moreover, it has been argued that IPV is more frequent in cultures where the use of aggression and violence toward intimate partners is socially

more acceptable (Jewkes, 2002). This is in line with the cultural spillover theory which holds that the prevalence of socially accepted and legitimate violence could explain the prevalence of illegitimate violence in a nation. For example, Lysova and Straus (2019) using a sample of university students from 32 nations, found that the more socially acceptable violence was in a society, the greater was the probability of IPV. This was stronger for women than men.

From an evolutionary perspective, variability in response to ecological conditions can impact various adaptive outcomes based on different ecological circumstances and cues. For example, competition among men is aggravated where resources are scarce, and where there are fewer women than men of reproductive age (Operational Sex Ratio, OSR; Emlen & Oring, 1977; e.g. Campbell, 1995; Daly & Wilson, 1988; Den Boer, 2002; 2004; Schuster, 1983; 1985). Indeed, intrasexual competition and low mate value were associated with IPV for both men and women (Buunk & Masser, 2019). D'Alessio and Stolzenberg (2010) further suggested that a high sex ratio increased male-on-female IPV. However, an interesting finding of their study showed that male IPV perpetration was higher in cities where more women work, suggesting that male intrasexual competition may be increased when women are exposed to other men at work, which could elicit male-on-female IPV (D'Alessio & Stolzenberg, 2010). Additionally, where resources are located in one place, polygyny may also be more likely. In fact, it has been shown that polygyny is associated with a higher likelihood of experiencing and accepting IPV (Abramsky et al., 2011; Amo-Adjei & Tuoyire, 2016; Uthman et al., 2019). For instance, Behrman (2019) investigated the relationship between polygyny and IPV in Nigeria and found that

polygyny was linked to higher probabilities of women's reports of recent emotional and physical IPV.

The current research represents the first cross-cultural investigation into individual differences in romantic attachment in association with IPV and sexual coercion perpetration. Using a sample from 57 nations derived from the ISDP-2 (Schmitt, 2005), the aim of the present study is twofold: First, we investigate sex differences in IPV and sexual coercion perpetration.

Hypothesis 1: Women score higher than men on IPV perpetration.

Hypothesis 2: Men score higher than women on sexual coercion perpetration.

Second, we examine the associations between the attachment dimension (model of self and model of other) and IPV and sexual coercion perpetration. Based on the previously established associations between attachment anxiety and IPV perpetration, we hypothesize that anxious attachment (negative model of self) will be associated with both IPV and sexual coercion perpetration. Additionally, we predict that there will be gender differences across the anxious attachment dimension, such that anxious attachment (preoccupied vs. fearful) will differ among men and women in association with IPV perpetration.

Hypothesis 3: Romantic attachment will be associated with physical IPV perpetration.

- 3a: Negative model of self will be associated with IPV perpetration in both men and women.
- 3b: Negative model of other (fearful attachment) will be associated with physical IPV perpetration in men.
- 3c: Positive model of other (preoccupied attachment) will be associated with physical IPV perpetration in women.

Hypothesis 4: Romantic attachment will be associated with sexual coercion perpetration.

- 4a: Negative model of self will be associated with sexual coercion perpetration in both men and women.
- 4b: Negative model of other (fearful attachment) will be associated with sexual coercion perpetration in men.
- 4c: Positive model of other (preoccupied attachment) will be associated with sexual coercion perpetration in women.

2.1.3 METHOD

Participants

The research presented in this article stems from the ISDP-2 project, a collaborative endeavour involving more than 100 scientists specializing in social, behavioral, and biological fields from 57 nations (Schmitt, 2005). A comprehensive account of the methodology and sampling techniques employed in ISDP 2 has already been extensively documented elsewhere (Schmitt et al., 2017). Therefore, in this article, we offer a concise overview of its measures and outline the process by which we generated the new world regions utilized in our study.

The ISDP-2 included samples from 57 nations organized into 7 world regions (total N = 7395 men and 11,138 women). However, not every nation filled out the IPV and sexual coercion questionnaires. Specifically, Iranian data from the ISDP 2 were eliminated from the current analysis due to participants not filling out the necessary measures. Thus, 56 nations

constituted the current set of national samples. Participants included in the present study were heterosexual men and women in current romantic relationships.

The North American world region (*N* = 1745 men and N = 3358 women) included multiple samples from the United States and Canada, and one sample from Mexico.

The Central/South America world region (*N* = 740 men and 809 women) was comprised of samples from Chile, Argentina, Brazil, Colombia, Costa Rica, and Ecuador.

The North/West European world region (*N* = 1329 men and 2434 women) included samples from the United Kingdom, Austria, Germany, Iceland, Denmark, Finland, Norway, and Switzerland.

The Eastern European included samples from Croatia, Czeck Repuclic, Estonia, Hungry, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia, Slovenia (*N* = 1253 and 1381 women).

The Mediterranean world region (*N* = 1111 men and 1561 women) included samples from Cyprus, Greece, Israel, Italy, Lebanon, Malta, Portugal, Spain and Turkey (*N* = 1111 men and 1561 women).

The African world region (*N* =360 men and 481 women) included samples from Ethiopia, Nigeria, South Africa, Swaziland, Tanzania, Zimbabwe.

The South and Southeast and East Asia world region (*N* = 644 men and 725 women) included samples from Bangladesh, China, Indonesia, Japan, Malaysia, Philippines, South Korea, Taiwan.

Side note: The ISDP-2 Project consists of 58 nations, however the present study excluded samples from Israel, India, and Iran due to incomplete measures.

Procedure

As set out in Schmitt et al (2004), researchers hailing from cultural regions where

English was not the primary language were tasked with employing a translation/back-translation process and to administer the ISDP-2 survey in their respective native languages. This procedure typically involved the primary collaborator translating the survey measures into the participants' native language and subsequently having a second person perform a back-translation into English. Discrepancies between the original English and the back-translation were subject to discussion, and consensus was reached regarding the most suitable translation approach, following the principles of Brislin (1980). It's important to note that the translators for ISDP-2 were not professional translators, raising questions about the quality of the translations. As shown in Table 1, the ISDP-2 survey underwent translation into 30 distinct languages.

Measures

Participants underwent an assessment using the Relationship Questionnaire (Bartholomew & Horowitz, 1991), a two-dimensional, four category measure of adult romantic attachment. This measure includes a secure attachment item, which participants rated on a 7-point Likert-type scale, ranging from 1 *(doesn't describe me*) to 7 (*very accurately describes me*). Items include statements such as: "It is easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me." Higher scores on this secure scale indicate that a participant holds internal working models reflecting a positive Model of Self and a positive Model of Other in relationships.

The Relationship Questionnaire incorporates three items to measure insecure romantic attachment styles. The first item asses dismissing romantic attachment, where higher scores indicate a positive Model of Self, but a negative Model of Other: "I am comfortable without close emotional relationships. It is very important to me to feel

independent and self-sufficient, and I prefer not to depend on others or have others depend on me." The second item evaluates preoccupied romantic attachment, with higher scores indicating a negative Model of Self but a positive Model of Other: "I want to be completely emotionally intimate with others, but I find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them". The third item measures fearful romantic attachment, with higher scores indicating a negative Model of Self and a negative Model of Other: "I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will get hurt if I allow myself to get too close to others".

An overall Model of Self scale is computed by adding a participant's secure and dismissing scores and then subtracting the combined preoccupied and fearful scores (see Griffin & Bartholomew, 1994). The Model of Other scale is calculated by summing the secure and preoccupied scores and then subtracting the combined dismissing and fearful scores. Despite not being the most recent or advanced measure of romantic attachment, the Relationship Questionnaire was selected for its brevity, prior use in multiple studies, and its suitability for examining the connection between internal working models and external cultural criteria (Bartholomew, 1994; Griffin & Bartholomew, 1994). Furthermore, it is the only attachment measure among popular options that demonstrates independence from self-deceptive biases (Leak & Parsons, 2001).

For the assessment of physical violence frequency, the Conflict Tactics Scale (CTS; Straus, 1979) was employed. The CTS comprises 18 distinct behaviors categorized into three subscales: reasoning, verbal aggression, and physical violence. Participants rated the frequency of these behaviors on a 6-point scale, ranging from "Never" to"More

than once a month", considering both themselves and their partners over the past 12 months within their current relationship. The CTS has been widely used in various studies exploring topics such as attachment and intimate partner violence (Babcock et al., 2000; Bookwala, 2002; Henderson et al., 1997; Kesner & McKenry, 1998; Mauricio & Gormley, 2001).

To assess the frequency of sexual coercion, the Aggressive Sexual Behavior Inventory (ASBI; Mosher, 1988), a 20-item scale was employed. The ASBI is measured on a continuum of sexual aggression that ranges from verbal manipulation to physical aggression in order to obtain sexual access. Participants rated how frequently they engaged in these various forms of sexual coercion, and each behavior was rated on a 7-point Likert-type scale.

2.1.4 RESULTS

Descriptive statistics, means and standard deviations for the study variables are presented in Table 1 and 2. To determine the magnitude of gender associated with IPV perpetration, an ANCOVA was performed controlling for age provided it has been previously identified as a demographic predictor of relationship violence (see Wilson & Daly, 1993b). The outcome variable (IPV) was positively skewed, such that 36% of participants reported zero instances of perpetrating IPV (M = .33, SD = .51, *skewness* = 2.91 (>.08), *kurtosis* = 12.28 (>3). A square root transformation was therefore performed to reduce the skew (M = 1.14, SD = .19, *skewness* = 2.13, *kurtosis* = 5.74).

Table 1. Sex Differences in Self-Reported Use of Intimate Partner Violence across Seven Major World Regions

	Men			Women			Main Effect of Sex	
World Region	*M*	*SD*	*N*	*M*	*SD*	*N*	*F*	*Partial* η^2
North America	1.11	.16	1585	1.14	.19	3098	37.20***	.008
Central/South America	1.07	.13	615	1.11	.16	625	13.29***	.001
North/West Europe	1.10	.14	1189	1.14	.16	2180	43.16***	.013
Eastern Europe	1.16	.22	1138	1.20	.23	1307	8.93**	.004
Mediterranean	1.13	.19	899	1.11	.22	305	7.54**	.003
Africa	1.12	.21	464	1.15	.20	1330	11.02***	.001
South/Southeast Asia and East Asia	1.10	.19	413	1.17	.22	540	8.93**	.011

Note. Main effects of sex controlled for age. To reduce skew, the dependent variable was transformed via square rooting. ** = $p < .01$, *** = $p < .001$.

Table 2. Sex Differences in Self-Reported Sexual Coercion across Seven Major World Regions

	Men			Women			Main Effect of Sex	
World Region	*M*	*SD*	*N*	*M*	*SD*	*N*	*F*	*Partial* η^2
North America	1.50	.18	1661	1.44	.09	3190	191.42***	.038
Central/South America	1.54	.15	648	1.50	.15	648	16.60***	.013
North/West Europe	1.48	.12	1262	1.44	.07	2277	112.70***	.031
Eastern Europe	1.54	.17	1182	1.48	.13	1274	107.98***	.042
Mediterranean	1.71	.21	983	1.54	.31	288	69.87**	.091

Africa	1.60	.27	474	1.45	.09	1329	18.73***	.092
South/Southeast Asia and East Asia	1.54	.23	408	1.53	.21	555	230***	.018

Note. Main effects of sex controlled for age. To reduce skew, the dependent variable was transformed via square rooting. ** = $p < .01$, *** = $p < .001$.

Supporting *Hypothesis 1*, women were found to be significantly more likely to perpetrate violence against an intimate partner than were men across all world regions with the exception of the Mediterranean region where men were found to perpetrate violence against a partner more often than women. The effect sizes ranged from none to small such as in the North/West European world region (*partial eta squared* = .013). An additional ANCOVA was performed to test the magnitude of gender associated with sexual coercion. Given that the outcome variable (sexual coercion) was positively skewed, such that 60% of participants reported zero instances of perpetrating sexual coercion ($M = 1.25$, $SD = .59$, skewness = 4.03 (>.08), kurtosis = 20.24 (>3)), a square root transformation was performed to reduce the skew ($M = 1.49$, $SD = .16$, skewness = 3.39, kurtosis = 13.72). Supporting *Hypothesis 2*, consistent across all seven world regions, men were found to be significantly more likely to perpetrate sexual coercion against an intimate partner than were women ($p < .001$). The effect sizes ranged from small to medium, such as in the Mediterranean world region (*partial eta squared* = .091) and the African world region (*partial eta squared* = .092).

Correlational analyses were conducted to examine the relationship between IPV perpetration and attachment style in men and women (see Table 3). Results indicated that model of self was consistently negatively correlated with IPV in both men and women

except for Eastern European men, indicating a relationship between positive model of self and IPV, although this was not significant. This association was highly significant in women across the North American (*Rho* = -.11, $p < .001$) and North-West European world regions (*Rho* = -.15, $p < .001$), as well as in both men (*Rho* = -.08, $p < .05$) and women (*Rho* = -.06, $p < .05$) within the Mediterranean world region. Supporting *Hypothesis 3a*, this suggests that universally, a negative model of self may be a potential predictor of IPV perpetration in both men and women.

In addition, we found that in men across five out of the seven world regions, model of other was negatively correlated with IPV perpetration, except for Africa and Asia. Although these relationships were not statistically significant, the findings generally point into the predicted direction, suggesting that men who have a negative model of other are more likely to employ IPV. As such, a fearful attachment style (negative model of self and negative model of other) could potentially predict IPV perpetration in men (*Hypothesis 3b*).

Conversely in women, we found that model of other was positively associated with IPV perpetration across four out of the seven world regions, except for North-West Europe, Eastern Europe, and Africa. Although this association was only significant in the Mediterranean world region (*Rho* = .06, $p < .05$), the findings may imply that women who have a positive model of other may be more likely to employ IPV. Consequently, a preoccupied attachment (negative model of self and positive model of other) may be a potential predictor in IPV perpetration (*Hypothesis 3c*).

Table 3. Associations between Romantic Attachment and IPV

	Men	Women	Men	Women
World Region	Model of Self	Model of Self	Model of Other	Model of Other
North America	-.04	-.11***	-.03	.03
Central/South America	-.02	-.04	-.07	.06
North/West Europe	-0.5	-.15***	-.05	-.03
Eastern Europe	.01	-.01	-.01	-.01
Mediterranean	-.08*	-.06*	-.01	.06*
Africa	-.03	-.03	.04	-.04
South/Southeast Asia and East Asia	-.04	-.02	.02	.07

Note. Controlled for age. Dependent variable was square-root transformed prior to analyses. *p < .05. **p < .01. ***p < .001.

Next, we investigated the relationship between sexual coercion perpetration and attachment style in men and women using additional correlational analyses (see Table 4). Results showed that model of self was negatively correlated with sexual coercion perpetration in both men and women consistently across six world regions except for men across Eastern Europe and women across Africa. This association was significant in the North American world region in both men (*Rho* = -.06, $p < .001$) and women (*Rho* = -.08, $p < .001$), as we well as in men within the Mediterranean world region (*Rho* = -.07, $p < .001$). Supporting *Hypothesis 4a*, this suggests that generally, a negative model of self is a potential predictor of sexual coercion perpetration in both men and women. In addition,

we found that in men across six world regions with the exception of Central/South America, model of other was negatively correlated with sexual coercion perpetration. Although these relationships were only statistically significant in men across North-West Europe and Asia, the findings point into the predicted direction, suggesting that men who have a negative model of other are more likely to employ sexual coercion against an intimate partner. As such, a fearful attachment style (negative model of self and negative model of other) could potentially predict sexual coercion perpetration in men (*Hypothesis 3b*). In women, model of other was positively associated with sexual coercion perpetration across five world regions. This relationship was significant in women within the Mediterranean world region (*Rho* = .06, $p < .05$), however in North-West Europe women's model of self was significantly negatively correlated with sexual coercion perpetration (*Rho* = -.06, $p < .01$). Therefore, although the findings for the most part indicate that women with a preoccupied attachment (negative model of self and positive model of other) may be more likely to employ sexual coercion against an intimate partner (*Hypothesis 3c*), there could be cultural differences in women's anxious attachment dimension in association with sexual coercion perpetration.

Table 4. Associations between Romantic Attachment and Sexual Coercion

	Men	Women	Men	Women
World Region	Model of Self	Model of Self	Model of Other	Model of Other
North America	-.08**	-.06***	-.05	.03
Central/South America	-.05	-.01	.05	.02
North/West Europe	-0.1	-.04	-.12***	-.06**

Eastern Europe	.00	-.05	-.04	.05
Mediterranean	-.07*	-.05	-.01	.06*
Africa	-.11	.02	-.05	-.03
South/Southeast Asia and East Asia	-.08	-.01	-.10*	.03

Note. Controlled for age. Dependent variable was square-root transformed prior to analyses. *p < .05. **p < .01. ***p < .001.

In summary, a negative model of self was found to be a robust and universal indicator of both IPV and sexual coercion perpetration in both men and women. In addition, our results suggest that there may be sex differences in model of other in association with both IPV and sexual coercion perpetration, however given there were some significant differences in model of other across certain cultures, model of other may not be a robust indicator of IPV or sexual coercion perpetration. Overall, these results propose that an anxious attachment, therefore a lack of secure base, could be the main indicator for both IPV and sexual coercion perpetration.

2.1.5 DISCUSSION

Romantic attachment theory has been repeatedly shown to be linked to IPV and sexual coercion perpetration (Velotti et al., 2018). The current research investigated the associations between romantic attachment styles and both IPV and sexual coercion perpetration against intimate partners across seven world regions comprised of 57 nations across seven major world regions including North America, Central/South America, North-West Europe, Eastern Europe, Mediterranean, Africa and Asia.

First, we hypothesized that there would be sex differences in the use of IPV and sexual coercion between men and women. As anticipated, we found that across all cultures with the exception of Africa, women were significantly more likely to perpetrate violence against an intimate partner than were men. Our findings provide strong support for previous research showing that women are more likely than men to employ violence against their intimate partners (Archer, 2000), and accord with previous findings indicating that indeed women tend to be more violent in intimate relationships (Bell & Naugle, 2007; Cross et al., 2011). It could be argued that women feel safer to employ IPV in intimate relationships, because the consequences, such as facing retaliation from their intimate partner, may be lower (Fiebert & Gonzalez, 1997). Additionally, it may be that women do not face the same severe societal consequences, such as condonation or punishment for IPV as men (Fiebert & Gonzalez, 1997). However, socio-cultural norms cannot explain why these sex differences occur universally. Instead, these findings fit within an evolutionary psychological line of reasoning.

Second, the present findings demonstrate that across all cultures, men tend to be significantly more likely than women to perpetrate sexual coercion against an intimate partner. From an evolutionary perspective, in particular men's use of sexual aggression against women functions to retain control over their sexuality in order to increase their own reproductive success by warding off mate poachers, thereby preventing cuckoldry and infidelity (Buss, 1994; Smuts, 1995; Wilson & Daly, 1996). Consequently, sexual coercion perpetration in intimate relationships has been argued to resort from sexual jealousy and possessiveness and may function as a means of sperm competition (Goetz & Shackelford, 2008; Wilson & Daly, 1996). In fact, it has been shown that pregnancy is more likely to occur as a consequence of rape (Gottschall & Gottschall, 2003). Therefore, a functional perspective agrees with feminist conclusions on the motives of sexual

coercion perpetration by men against women. However, although men were found to employ sexual coercion against intimate partner significantly more than women, it cannot be ignored that women also reported using sexual aggression against intimate partners. As such, our findings provide additional evidence that women, particularly those younger in age across all cultures, resort to both IPV and sexual coercion perpetration. As such, our results contradict the gender biased notion that women tend to not perpetrate violence against intimate partners. Moreover, provided that men in so-called egalitarian cultures (e.g., North-West Europe) were found to perpetrate sexual coercion against an intimate partner significantly more than women, the feminist notion that sexual coercion is the result of sex roles or patriarchy (e.g., Dobash & Dobash, 1981; Eagly, 1987) cannot be supported.

We further hypothesized that an anxious attachment style (negative model of self) would be associated with both IPV and sexual coercion perpetration in both men and women. Indeed, we found that individuals who employed IPV had a negative model of self except for men in Eastern Europe. Our findings accord with previous research that found IPV perpetration to be associated with anxious attachment style (see Velotti et al., 2018 for a systematic review).

Combined these findings provide cross-cultural evidence supporting theoretical perspectives on romantic attachment which suggest that the attachment system regulates emotional and behavioral reactions to acute or ongoing relationship threats in order to maintain romantic pair-bonds (Barbaro et al., 2016, 2018; Fraley & Shaver, 2000; Hazan & Diamond, 2000; Kruger et al., 2013). Specifically, individuals with an anxious attachment style tend to seek reassurance from their intimate partner which can manifest in desperate efforts to gain control over or seek proximity to their intimate partner. These

individuals may be hypervigilant to relationship threats and may find it difficult to disengage from signs of threats to their pair-bond (Mikulincer, Gillath, & Shaver; Rholes & Simpson, 2004). Indeed, our findings suggest that hyperactivating strategies associated with attachment anxiety could trigger IPV and sexual coercion perpetration. For instance, if anxiously attached individuals who have a negative model of self, perceive a threat to the security of their relationship, they may use violence in an effort to maintain their romantic pair-bond. As such, having a negative model of self (anxious attachment) may increase an individual's probability of using IPV and sexual coercion perpetration when confronted with a relationship threat. We therefore propose the Sexually Agentic Desperation Theory (SAD Theory), whereby individuals with an insecure base (negative model of self) would resort to violence against an intimate partner as a desperate strategy for conflict resolution.

In addition, we anticipated that there would be gender differences in model of other, specifically that a negative model of other would be associated with IPV perpetration in men, and a positive model of other would be associated with IPV perpetration in women. Indeed, we found that across six out of seven world regions, men who scored high on IPV had a negative model of other, whereas across five out of seven world regions, women who scored high on IPV had a positive model of other. When combined with a negative model of self, these findings point in the expected direction that men who perpetrate violence against an intimate partner tend to have a fearful romantic attachment style, whereas women who perpetrate violence against an intimate partner tend to have a preoccupied romantic attachment style. This was especially the case for women in the Mediterranean world region. However, this may not be generalizable across all cultures. For instance, in Africa men who were more likely to

perpetrate violence against an intimate partner had a positive model of other, whereas women in Africa who reported IPV perpetration had a negative model of other. Likewise, in North/West Europe, women had a negative model of other. Although these were not significant, there may be cultural differences in model of other and IPV perpetration.

We found similar results for model of other in association with sexual coercion perpetration. Indeed, a significant negative model of other could be found in male perpetrators of sexual coercion in the North-West European and Asian world regions, and a significant positive model of other was indicative of women's use of sexual coercion in the Mediterranean world region. However, women in the North-West European sample who reported employing sexual coercion against an intimate partner were found to have a significant negative model of other.

Previously, Schmitt and colleagues (2005) demonstrated that in certain cultures such as in Africa and Asia, people tend to have an anxious attachment style, whereas in West Europe, people tend to have a dismissing romantic attachment style. This may be due to local ecologies factors or geographic variations. For example, people who are exposed to high levels of stress in their environment such as in several African cultures could be more susceptible to developing an anxious attachment style. Similarly, given that in collectivist cultures an individual's romantic validation relies heavily on the opinion of others (Markus & Kitayama, 1991), Asian men and women may develop a more preoccupied attachment style (negative model of self and positive model of other). This may explain some of the cultural differences we found in model of other in association with both IPV and sexual coercion perpetration. Indeed, given that in the Asian world region, men who reported perpetrating sexual coercion against intimate

partners, were found to have a significantly fearful romantic attachment (negative model of self and negative model of other), it may be that a negative model of other may drive sexual coercion perpetration in men across Africa and Asia, as well as in women across North-West Europe.

As such, model of other may be an important indicator of IPV and sexual coercion perpetration. If this is the case, our findings would be consistent with the evolutionary psychological perspective that sex differences in IPV and sexual coercion perpetration may have different consequences and vary in function. For instance, whereas men may employ IPV and sexual coercion to dominate and control a woman's sexuality, women may use IPV and sexual coercion as a tactic to retain their mates. We therefore suggest that not only a low mate value (Buunk & Masser, 2019), but moreover a higher mate value discrepancy between a woman's self-perceived mate value and that of her partner's, could elicit female perpetrated IPV and sexual coercion. Overall, these findings demonstrate the importance of investigating sex differences in attachment dimensions when exploring IPV and sexual coercion perpetration against intimate partners.

Implications

The present study adds to the literature on the associations between romantic attachment bonds and IPV and sexual coercion perpetration by providing important data from 7 major world regions. Given the severity of negative outcomes associated with IPV and sexual coercion perpetration, an understanding of the etiology of violent behavior employed by both men and women is essential in order to prevent their occurrence. We provided strong evidence that across cultures, individuals who have a negative model of self (anxious attachment) are more likely to perpetrate violence against intimate partners, which is in line with previous research suggesting that such

individuals are more likely to be hypervigilant to threats to their intimate relationships and therefore may resort to controlling and violent behaviors in an attempt to gain assurance from a romantic partner, or maintain a romantic pair bond (Shaver & Mikulincer, 2008). This knowledge could be applied by clinicians and counselors in treating individuals who indicate having a negative model of self as they may be at risk of resorting to violent behaviors when confronted with a relationship threat or conflict, which could result in severe emotional as well as physical harm to intimate partners. For instance, clinical efforts could entail increasing an individual's positive attitudes toward the self through the use of attachment priming which has been shown to be highly effective in individuals with anxious attachment styles (Gilath & Karantzas, 2019). Therefore, clinical settings may benefit from administering attachment measures in order to identify the model of self and general attachment style of individuals with a history of IPV or sexual coercion perpetration behavior (Meyer & Pilkonis, 2002).

Moreover, our finding that women perpetrate violence against intimate partners significantly more than men, indicates that also men can be victims of domestic abuse. This stresses the importance for researchers to investigate male victims of IPV. Indeed, it has been shown that male perpetrated violence is perceived as fundamentally different from violence perpetrated by women, which generally is evaluated as being less harmful to victims (Broussard, Wagner, & Kazekis, 1991). In some countries, even the law is found to employ terminology that tends to be gender-biased (Keenan & Maitland, 1999). In the UK, for instance, rape is defined in a way that makes it impossible for women to be perpetrators (Sexual Offences Act, 2003). The notion that women do not employ violent behaviors or only do so in self-defense, not only deprives women of agency, but also deprives male victims of IPV and sexual coercion of credibility.

Moreover, although we found that men employ sexual coercion perpetration more than women, women also reported to perpetrate sexual coercion against intimate partners. Therefore, the debate should not be about which gender perpetrates more violence against an intimate partner, but rather about what can be done to prevent abuse from occurring. As such, health professionals need to advocate policies that address IPV and sexual coercion perpetration by both men and women.

Limitations and Future Directions

The implications of the present findings should be interpreted with respect to the limitations of the study. For instance, the ISDP2 consisted of convenience samples, and therefore our findings may not account for demographic variations (e.g., ethnic, religious or political) within each world region represented in the ISDP2. Although we controlled for age, future research should explore different sampling methods such as national or representative samples, in order to determine whether the sex differences in IPV and sexual coercion, as well as universal patterns found in attachment styles in association with IPV and sexual coercion are indeed replicable across different nations and demographics (Eid, Langeheine, & Deiner, 2003). An additional limitation of our sample is that it mainly consisted of college students. Although community members were included on occasion, it could be possible that the patterns and universals found in the present study are only representative of college-aged as well as educated populations.

Moreover, given that individual differences in attachment styles have important implications for adaptation in different domains of life and can be activated in response to different ecological conditions (Belsky et al., 1991), future research could investigate environmental factors, such as socioeconomic status (SES) or morbidity-mortality rates

(Ellis et al., 2009) within a fast life history framework. Indeed, a fast life history was previously found to be associated with IPV (Buunk and Masser, 2019), and anxious romantic attachment in adulthood has been linked to unpredictable early environments (Barbaro & Shackelford, 2016).

Given that all measures had to be translated into 30 languages, it may be that some translations were poor or even may have failed to convey the intended meaning of the key measures of our study. Although the translation/back-translation procedure used for the ISDP2 is commonly applied by cross-cultural psychologists and tries to maintain the integrity and meaning of the original measures (Church, 2001), it cannot be ruled out that there may be aspects of the measures that are culture-specific and therefore could have been lost in translation in certain cultures (Van de Vijver & Leung, 1997).

It may also be worth mentioning that there are strong social conventions in some cultures such as North America, which prohibit men to perpetrate violence against a female partner, and therefore male perpetrators are viewed more negatively (Straus, Kantor, & Moore, 1997). Consequently, the sex differences in IPV and sexual coercion perpetration found in our study should be interpreted with awareness of participant's willingness to disclose perpetrating IPV and sexual coercion against intimate partners. In addition, there could have been cultural differences in social desirability which may have affected participants' answers. As such, future cross-cultural psychology studies could use additional measures such as social desirability or impression management. Consequently, researchers need to be mindful of drawing broad conclusions based solely on our limited self-report data.

In addition, the CTS-scale (Straus, 1979) we used to assess IPV counts only the frequency of violent acts reported by participants, and therefore does not provide any information about the intent or the context in which those acts occurred. This means that although we found that women perpetrate significantly more IPV than men, we cannot entirely rule out the notion that women only use violence against intimate partners in self-defense. Indeed, a co-evolutionary perspective argues that female perpetrated IPV may be a co-evolved defense (Buss, 1992). Therefore, future research may benefit from investigating bidirectional or women-initiated IPV (Frieze, 2005).

Finally, given the correlational and cross-sectional design of our study, the current findings cannot provide support for strong statements of causality. In order to explore the directionality of effects, future research investigating romantic attachment styles in the context of IPV, and sexual coercion perpetration could employ an experimental or longitudinal design.

2.1.6 CONCLUSION

The current study provides critical empirical data to the research on physical and sexual abuse in intimate relationships by revealing universal patterns across 7 major world regions on sex differences and romantic attachment style in IPV and sexual coercion perpetration. The results indicate that women, more than men, perpetrate IPV against intimate partners, whereas men, more than women perpetrate sexual coercion against intimate partners- these sex differences are statistically significant and appear cross-culturally. Additionally, the results indicate that both men and women with anxious attachment styles (negative model of self) are more likely to perpetrate IPV and

sexual coercion against intimate partners. This finding is robust and appears to be universal. The results further suggest that there may be sex differences in the dimension of anxious attachment in association with IPV and sexual coercion perpetration such that in men, a fearful attachment style (negative model of self and negative model of other) could indicate IPV and sexual coercion perpetration, whereas in women, a preoccupied attachment style (negative model of self and positive model of other) may indicate IPV and sexual coercion perpetration. However, future research is needed to further investigate these sex differences. The results of the present study highlight the important roles of 1) sex differences associated with IPV and sexual coercion perpetration, and 2) model of self – which appear to be robust and universal indicators of IPV and sexual coercion perpetration in romantic relationships. The present findings could have important implications for clinicians and health professionals.

Chapter 3

When Staying Home is Not Safe: An Investigation of the Role of Attachment Style on Stress and Intimate Partner Violence in the Time of COVID-19

3.1 Study 2

3.1.1 ABSTRACT

Intimate partner violence (IPV) is a major public health concern, with increasing rates of IPV being seen around the world during the COVID-19 pandemic. Previous research has linked the perpetration of IPV and other forms of sexual violence to aspects of romantic attachment psychology, with insecure anxious/preoccupied attachment most often linked to higher rates of IPV. Stressful events typically activate the attachment system and may either aggravate or disrupt its regulatory functioning. In the present study, we investigated whether COVID-related PTSD and depressive symptoms were associated with increased IPV perpetration and whether this relationship was moderated by levels of attachment security. Our findings indicated that higher COVID-related PTSD was significantly associated with increased IPV perpetration in securely attached individuals, whereas depressive symptoms were significantly associated with decreased IPV perpetration in securely attached individuals. IPV perpetration by insecure individuals was consistently high regardless of COVID-related PTSD or depressive symptoms. These findings suggest that COVID-related PTSD may erode adaptive attachment functioning, particularly among the previously secure, which can have important consequences for secure individuals and their intimate partners. The present findings may explain some of the recent increase of IPV cases world-wide and serve to raise awareness and motivate clinical interventions to more efficiently help both victims and perpetrators of IPV stay safe while staying home.

"The stark nakedness and simplicity of the conflict with which humanity is oppressed - that of getting angry with and wishing to hurt the very person who is most loved."

— John Bowlby

3.1.2 INTRODUCTION

Once COVID-19 was pronounced a pandemic, countries began to adopt extreme behavioral interventions such as mandating physical distancing, encouraging social isolation, and at times implementing full community quarantines to slow down and contain its spread (Campbell, 2020; van Gelder et al., 2020). Although these essential public health strategies were paramount for infection control, they required individuals to remain for long periods inside their homes. This residential isolation was accompanied not only by fear and worry about one's personal health, but also by concerns about negative economic consequences (e.g., rising unemployment figures; Kennedy, 2020), shortages of essential resources (Mannelli, 2020; McMahon, Peter, Ivers, & Freeman, 2020; and heightened family burdens such as increased childcare obligations resulting from school closures (Canady, 2020; Kowal et al., 2020; Wang et al., 2020).

This prolonged and intense period of social seclusion inside the home, combined with uncertainty surrounding the duration of the lockdown and the progression of the pandemic, appears to have amplified general stress levels for most adults. For instance, the average stress level related to COVID-19, as well as the general stress level in American adults, was significantly higher than the average stress level reported in the previous year (Annual Stress in America, 2019; Kennedy, 2020). A tracking poll showed that 53% of adults in the US reported that COVID-19 has had a negative impact on their mental health (KFF, 2020).

Several studies from around the world seem to confirm that social isolation and quarantine experiences related to COVID-19 have had negative psychological consequences, including heightening levels of anxiety, depression, anger, confusion,

and stress (Brooks et al., 2020). Fear regarding the unknown nature of COVID-19, for instance, was associated with increased mental health disorders (Shigemura et al., 2020), with those affected across a range of other cultures demonstrating several symptoms of mental trauma including depression and post-traumatic stress disorder (PTSD) (Brooks et al., 2020; Rubin & Wessely, 2020; Sun et al., 2020; Tang et al., 2020; Wang et al., 2020). In a study of university students in China, the prevalence of PTSD and depression one month after the pandemic was 2.7% and 9.0%, respectively (Tang et al., 2020). A longitudinal survey of the general population in China found increased levels of PTSD symptoms during the initial outbreak as well as 4 weeks later (Wang et al., 2020). Significant increases of PTSD and depression since the onset of COVID-19 have also been found in Italy (Forte et al., 2020), Spain (González-Sanguino et al., 2020), the UK (Shevlin et al., 2020), and Lebanon (Fawaz & Samaha, 2020). Moreover, in the US, a study of young adults showed that high levels of COVID-related worry were linked with clinical levels of PTSD and depressive symptoms (Liu et al., 2020). Recent studies including a meta-analysis supported the notion that COVID-19 can be interpreted as a traumatic event due to the PTSD responses found in the general population across several cultures - even in people that were not infected with the virus (Bridgland et al., 2021; Cooke et al., 2020).

Indeed, recent research proposed that COVID-19-related stress and worries (e.g., contracting the virus, social distancing, lifestyle and interpersonal relationship changes, uncertainty of the future, economic problems, and so forth) may even generate a new form of trauma (Forte, 2020). In addition, changes in employment status and income due to lockdown, may limit access to essential needs and services and cause heightened frustration and distress for individuals and their families (Brooks et al., 2020). Indeed, mental health issues have been previously associated with low socioeconomic status

(SES) during COVID-19 (Marmet et al., 2021). Combined, these findings suggest that the COVID-19 pandemic may be experienced as a truly traumatic event in people's lives all around the world. As with past research on natural disasters (Beaglehole et al., 2018) and other epidemic emergencies (James et al., 2019), these traumatic situations are likely increasing people's levels of PTSD and depressive symptoms and can have major consequences.

The trauma of COVID-19 does not only impact individuals, but can further take a toll on interpersonal relationships, specifically intimate partnerships (Marshall & Kuijer, 2017). For instance, mental health issues have been consistently linked to an increased risk of perpetrating intimate partner violence (IPV; Cano & Vivian, 2001; Capaldi et al., 2012; Frye & Karney, 2006; Langer et al., 2008; Mason & Smithey, 2012; Roberts et al., 2011; Taft et al., 2009; van Gelder et al., 2020). Particularly, stress and mood disorders such as PTSD and depression have been linked with IPV perpetration across cultures (Bell & Orcutt, 2009; Dowd, Leisring, & Rosenbaum, 2005; Kirby et al., 2012; Shorey et al., 2012; Swan et al., 2005). IPV refers to any behavior carried out to inflict harm to romantic partners (Anderson & Bushman, 2002; Baron & Richardson, 1994) and is a public health and human rights issue worldwide (Magdol et al., 1997; McLaughlin et al., 1992; Straus, 2008).

IPV tends to increase during humanitarian crises and emergencies (Chandan et al., 2020; Roesch, Amin, Gupta, & Garcia-Moreno, 2020; Stark & Ager, 2011; World Health Organization, 2020). Since social isolation and stay-at-home measures came into force to slow down the spread of COVID-19, countries around the world have reported significant increases in IPV and domestic abuse cases (Campbell, 2020; Peterman et al., 2020; van Gelder et al., 2020). For instance, domestic abuse cases rose threefold in

Wuhan, the first province in China under mass quarantine (Allen-Ebrahimian, 2020), and the European Union saw a significant increase of IPV with several reports of homicide related to family violence (Bradbury-Jones & Isham, 2020; Wagers, 2020). The National Domestic Abuse Hotline in the UK reported a 25% increase in calls since the COVID-19 lockdown (Kelly & Morgan, 2020) and both Italian and French governments commissioned hotels to shelter the rising number of individuals fleeing abusive homes (Davies & Batha, 2020). In the USA, domestic violence cases increased between 21% and 35% across several states (Wagers, 2020), and a 75% increase of domestic abuse support searches was observed on Google (Poate, 2020). It appears the increase of mental health issues due to COVID-19 has exacerbated IPV as public health issue. However, not all individuals respond to PTSD and depressive symptoms with IPV perpetration. Indeed, individuals vary widely in their sensitivity to threats and their arousal of negative emotions that might further inform IPV perpetration in the time of COVID-19.

Stress Regulation and the Attachment System

Individual differences in attachment may be particularly relevant for explaining how individuals regulate their anger in times of stress (Bowlby, 1973; Mikulincer & Shaver, 2003; 2007a). During human evolutionary history, infants heavily relied on primary caregivers for their survival to reproductive age. Attachment theory posits that infants are born with an innate psycho-biological system (the attachment system; Bowlby, 1973) which is activated during distress and functions to motivate proximity-seeking to an attachment figure for safety, comfort, and support (Bowlby, 1969, 1982; Mikulincer & Shaver, 2007). Once this is achieved and the infant feels safe, the

attachment system is deactivated, and over time these stabilizing activation-deactivation attachment experiences in response to stress result in a "secure" attachment style. However, when the attachment figure is unavailable or unreliable, the attachment system fails to learn stabilizing patterns of activation-deactivation attachment in response to stress. These early attachment experiences provide inadequate and unstable stress regulation that interfere with the development of psychological resources needed for coping with stressors. Consequently, such individuals may develop an insecure attachment style, characterized by either anxious or avoidant attachment (Brennan et al., 1998).

Provided that exposure to stressful and traumatic events such as the COVID-19 pandemic can cause overwhelming feelings of panic and helplessness (Horowitz, 1982), the attachment behavioral system should be activated by stressors related to COVID-19 (Besser, Neria, & Haynes, 2009; Mikulincer & Shaver, 2007). However, each attachment style is associated with specific coping mechanisms for affect regulation in response to distress or threat (Mikulincer & Shaver, 2007; Simpson & Rholes, 2017). Whereas attachment security is associated with reliance on intimate partners and the ability to employ flexible strategies, such as problem solving and reappraisal, to regulate distress (Mikulincer & Shaver, 2007), individuals with an insecure attachment style resort to different coping mechanisms. For instance, attachment *anxiety* has been linked with hyperactivating strategies such as reassurance seeking and over-dependence on support from intimate partners (Mikulincer & Shaver, 2012). Attachment *avoidance*, in contrast, has been linked with deactivating strategies, such as self-reliance and withdrawal from intimate partners (Mikulincer & Shaver, 2012). Consequently, these responses to stress not only require increased effort and responsiveness from intimate partners, but they could also result in destructive communication patterns and low

relationship quality (Mikulincer & Shaver, 2007; Petromonaco & Beck, 2015). These normative relationship processes could be further degraded by added stressors from the pandemic. For instance, individuals with anxious attachment under stress may seek excessive reassurance from intimate partners who also experience distress due to the pandemic (Overall, Girme, Lemay, & Hammond, 2014; Shaver, Schachner, & Mikulincer, 2005).

Moreover, if anxious individuals are partnered with someone who has an avoidant attachment style, they may need to increase their effort to receive sufficient and effective support (Beck et al., 2013; Girme et al., 2015). This interplay between partners' attachment styles may exacerbate their struggle to cope and adapt to the COVID-19 crisis. Indeed, if both partners have an insecure attachment style (e.g., anxious-avoidant couples), they may have more problematic behavioral responses and communication patterns (Beck et al., 2013; Shallcross et al., 2011). For instance, an anxious person may react to an avoidant partner's withdrawal from conflict with protest behaviors that could escalate in violence to get their need for reassurance and safety met. Conversely, if an avoidant person cannot escape from conflict due to a persistent anxious partner, they may resort to coercive tactics to create the space they need to cope with distress (Overall et al., 2015).

Potentially most relevant to the context of COVID-19, attachment styles have been found to moderate mental and relational responses to stressful life events (Mikulincer & Shaver, 2012). For instance, prolonged and chronic stress has been shown to aggravate attachment insecurities in individuals with both anxious and avoidant attachment styles (Mikulincer & Shaver, 2012). Therefore, insecurely attached individuals may be more likely to develop PTSD and depressive symptoms during

COVID-19 (Mikulincer et al., 2006, 2011, 2014) and consequently may be more at risk of experiencing anger and aggression, including employing violence against intimate partners during conflict (Bond & Bond, 2004; Henderson et al., 2005; Schumacher et al., 2001; Stith et al., 2004).

Additionally, Mikulincer and colleagues (2015) proposed that prolonged, and chronic stress may disrupt normal attachment functioning of individuals with a secure attachment style. As such, stressors experienced during the COVID-19 pandemic could make secure individuals feel more vulnerable, promote relational worries, and potentially alter their perception of receiving sufficient support from intimate partners (e.g., Baldwin & Fehr, 1995; Davila & Cobb, 2004). Consequently, a failure to successfully cope with intense feelings of distress could keep the attachment system of secure people persistently activated, thereby eroding their sense of security and ultimately lower relationship quality (Mikulincer & Shaver, 2012). Indeed, individuals with persistent and pervasive stress were found to report higher attachment anxiety and avoidance and were less likely to activate security-related representations when exposed to threats (Mikulincer et al., 2015).

Previous studies that have investigated the impact of stress on attachment styles have mostly used laboratory environments (e.g., Carpenter & Kirkpatrick, 1996). COVID-19 provided a unique and naturalistic opportunity to assess the impact of a current, major life event and stressor on attachment styles and consequently, intimate relationships (Elkins et al., 2013; Finkel, 2007; Finkel & Eckhardt, 2013; Langhinrichsen-Rohling et al., 2012a; Whitaker, 2013). We evaluated the following three hypotheses regarding stress, PTSD, and depression and their links to IPV within romantic relationships.

Hypothesis 1a: COVID-related PTSD will be positively associated with IPV perpetration in higher (vs. lower) levels of attachment anxiety and higher (vs. lower) avoidance.

Hypothesis 1b: Relatively secure individuals (lower levels of anxiety and lower levels of avoidance) will report heightened IPV perpetration under heightened levels of COVID-related PTSD.

Hypothesis 2: COVID-related depressive symptoms will be positively associated with IPV perpetration in higher (vs. lower) levels of attachment anxiety and higher (vs. lower) avoidance.

3.1.3 METHOD

Participants

Data were originally collected from 975 participants via MTurk. Provided individuals in exclusive intimate relationships were more likely to meet during COVID-lockdown and spend more time together at home unlike single individuals, the present study will focus on a subsample of participants (N = 812) who reported being in a romantic relationship (N = 92, 9.4%), cohabitating (N = 44, 4.5%), and married (N = 676, 69.3%) to assess their use of IPV perpetration. The mean age of participants was 35.26 years (SD = 10.47). Most participants 67.1% were men (N = 563) and 32.9% were women (N = 320), of which (N = 731, 75%) reported being attracted to individuals of the opposite sex, (N = 41, 4.2%) reported being attracted to individuals of the same sex and (N = 204, 20.9%) reported being attracted to both individuals of the opposite and

same sex. Most participants, 59.2% reported living in the United States (*N* = 567), 3.3% resided in Europe (*N=32*), 1.6% were from Brazil (*N* = 16), and 21.7% of participants resided in Asia, mostly in India (*N* = 212). COVID-19 was officially declared a pandemic in March 2020 and lockdown measures were immediately introduced world-wide. Data for the present study were collected in May of 2020 (two months into COVID-lockdown). Although the degree of lockdown measures varied across nations and territories, according to an AFP database, around 4.5 billion people spanning 110 countries were obliged to stay home and were subject to partial or complete lockdown for up to two months prior to – and during data collection. All study procedures outlined below were approved by the university at which the research was conducted.

Procedure

Prospective participants viewed an advertisement for the study for a participation compensation fee of $0.50 on MTurk's job listings. It has been suggested that participants recruited from MTurk tend to be more demographically diverse than those from standard internet samples and college samples (Buhrmester, Kwang, & Gosling, 2011). Moreover, there was no association between compensation rates and data quality and data collected on MTurk tends to be equally reliable as those retrieved via traditional methods. (Gosling et al., 2004). Participants who were willing and eligible to participate (i.e., at least 18 years of age) were provided a link to an informed consent statement about the study. Those who agreed to participate could access and complete the survey, and those who did not agree to participate were exited from the study.

Materials

The *Impact of Event Scale* (Revised, Weiss & Marmar, 1997) is a 22-item scale which is rated on a 0 (*not at all*) to 4 (*extremely*) scale and was used to assess PTSD-responses to COVID-19 in the general population (e.g., "I had trouble concentrating", "I felt irritable and angry", "I had trouble staying asleep")**.** The instructions were adapted to specifically apply to COVID-19, e.g., **'**how distressing each item has been since the onset of COVID-19 lockdown'. PTSD is a common emotional disorder in the general population after a disaster. Research from previous viral outbreaks as well as from the most recent COVID-19 pandemic indicate that viral outbreaks and imposed quarantine measures can be traumatic for individuals and may result in PTSD. Indeed, PTSD in the general population has been described as a second tsunami of COVID-19 (Dutheil, Mondillon, & Navel, 2021). To measure traumatic stress symptoms in the context of viral outbreaks, the Impact of Event Scale has been shown to be valuable (Horowitz, Wilner, Alvarez, 1979) and has been used in several studies to assess the impact of COVID-19 in the general population across several countries (Cooke, Eirich, Racine, & Madigan, 2020; Zhang, Pan, Cai, & Pan, 2021). Importantly, compared to other self-report measures of psychological impact, the advantage of using the IES-R is that the event can be specified. Indeed, the IES-R adapted for Covid-19 has been found to be a valid measure of traumatic stress symptoms associated with the COVID-19 pandemic (Zhang et al., 2021. The IES-R with modifications for COVID-19 (Vanaken et al., 2020) showed acceptable internal validity ($\alpha = .75$). The current study found good internal consistency for the COVID-adjusted IES scale ($\alpha = .96$). The maximum score of the IES is 88. A score of 33-38 is the cut-off for a clinical diagnosis of PTSD (Creamer, Bell, & Failla, 2003). Moreover, a score of 39 and above has been shown

capable of suppressing the functioning of the immune system for ten years following the traumatic event (Kawamura, Kim, & Asukai, 2001).

The *CES-D scale*, a self-report depression scale for research in the general population (Radloff, 1977) is a 20-item measure assessing symptoms of depression in the general population with items phrased as self-statements (e.g., "I felt sad", "I felt lonely", "I felt hopeful about the future"). Respondents rated how frequently each item applied to them since the COVID-19 lockdown. Ratings were based on a 4-point Likert scale ranging from 0 (rarely or none of the time [less than 1 day]) to 3 (most or all of the time [5–7 days]). Previous studies reported an internal consistency ranging from .74 to .95 (Straus, 2007; Straus et al., 1996). The current study found adequate internal reliability ($\alpha = .80$). Higher scores signify greater symptoms, and the CES-D cut-off score is 16 indicating a risk for clinical depression ranging from "mild" (16-23) to "severe" (24-60) depressive symptomatology (Radloff, 1977).

Intimate partner violence perpetration was measured using *The Revised Conflict Tactics Scales* (CTS2; Straus, Hamby, Boney-McCoy, Sugaran, 1996). The CTS2 contains five subscales: *psychological aggression*, *physical assault*, *sexual coercion*, *negotiation*, and *sustained injury*. Considering the focus of the present research is on perpetration (and not victimization) of IPV, the subsequent analyses focused on the *physical* (e.g., "Slammed my partner against a wall") and *sexual* (e.g., "Used force to make my partner have sex") perpetration domains. Items were rated on a 6-point scale ranging from 1 (once since the lockdown) to 6 (more than 20 times since the lockdown).

To assess romantic attachment, participants completed the *12-item Experiences in Close Relationships Inventory-Short* (ECR-S; Wei, Russell, Mallinckrodt, & Vogel.,

2007). Sample questions include “It helps to turn to my romantic partner in times of need” (anxiety subscale) and “I want to get close to my partner, but I keep pulling back” (avoidance subscale). Items were rated using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). An overall score was computed for the 6 items each anxious and avoidant subscales. The original article found good internal reliability for anxious attachment (α = .78 to .86) and avoidant attachment (α = .78 to .88). The current study similarly found adequate internal reliability for anxious attachment (α = .72) and avoidant attachment (α = .87).

SES-harm was measured with one item “Has your household been negatively affected by the lockdown” and scored on a scale from 1 (none at all) to 5 (a great deal).

3.1.4 RESULTS

COVID-related PTSD

Table 5 and 6 contain descriptive statistics for all participants and intercorrelations among all study variables. The mean COVID-IES-R score for all participants was *M* = 38.13 (*SD* = 18.07), with male participants *M* = 38.78 (*SD* = 18.09) and female participants *M* = 36.85 (*SD* = 17.98), indicating the likely presence of PTSD. Those in an exclusive relationship indicated a mean score of *M* = 28 (*SD* = 17.50), participants who were cohabitating indicated a mean score of *M* = 23.90 (*SD* = 16.73), and those who were married were found to indicate a mean score of *M* = 40.75 (*SD* = 17.03). This may suggest that COVID-related PTSD may be especially present in married individuals. Demographic variables that had statistically significant negative associations with COVID- IES score were age and SES (see Table 3).

Table 5. Bivariate Correlations and Descriptive Statistics for Study Variables

	All Participants						
	1	2	3	4	5	6	7
IPV	-						
[a]PTSD	.25**	-					
[b]Depression	-.21**	-.80**	-				
[c]Anxious	.22**	.73**	-.69**	-			
[d]Avoidant	.23**	.72**	-.70**	.79**	-		
Age	-.12	-.16**	.13*	-.15*	-.16*	-	
[e]SES	-.18**	-.50**	.47**	-.41**	-.42**	.14**	-
n	781	743	679	785	791	811	797
Mean	12.90	38.13	34.87	26.38	25.44	35.26	2.71
SD	9.39	18.07	9.53	7.72	5.62	10.47	1.32

Note. All variables were mean centered prior to analyses.

[a]PTSD= COVID-related PTSD, [b]Depression = COVID-related depressive symptoms, [c]Anxious = Anxious Attachment, [d]Avoidant = Avoidant Attachment, [e]SES = socioeconomic status

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 6. *Bivariate Correlations and Descriptive Statistics for Study Variables*

Male Participants

	1	2	3	4	5	6	7
IPV	-						
[a]PTSD	.20**	-					
[b]Depression	-.15**	-.81**	-				
[c]Anxious	.20**	.75**	-.71**	-			
[d]Avoidant	.19**	.71**	-.71**	.79**	-		
Age	-.08	-.13**	.09*	-.08*	-.08*	-	
[e]SES	-.13**	-.51**	.50**	-.42**	-.42**	.15**	-
Mean	13.25	38.78	34.76	26.40	25.54	34.68	2.66
SD	9.24	18.09	9.30	7.75	5.61	10.04	1.30

Female Participants

	1	2	3	4	5	6	7
IPV	-						
PTSD	.33**	-					
Depression	-.30**	-.77**	-				
Anxiety	.26**	.70**	-.64**	-			
Avoidance	.30**	.75**	-.66**	.79**	-		
Age	-.18**	-.22**	.22**	-.27**	-.30**	-	
SES	-.28**	-.47**	.43**	-.38**	-.43**	.12*	-
Mean	12.20	36.85	35.07	26.35	25.24	36.44	2.80

SD	9.66	17.98	9.98	7.67	5.63	11.22	1.35

Note. All variables were mean centered prior to analyses.

[a]PTSD= COVID-related PTSD, [b]Depression = COVID-related depressive symptoms, [c]Anxious = Anxious Attachment, [d]Avoidant = Avoidant Attachment, [e]SES = socioeconomic status

* $p < .05$, ** $p < .01$, *** $p < .001$

Two moderation analyses were run with SPSS PROCESS macro (Hayes, 2017) to examine the relationship between COVID-related PTSD and IPV. To assess whether anxious and avoidant attachment style moderated this relationship, age, gender, SES-harm, depressive symptoms, and avoidant attachment style, respectively were controlled for. All variables were mean-centered and deviation scores calculated to enable creation of the interaction term (see Table 7).

COVID-related PTSD was associated with IPV, $b = .08$, $p = .02$, 95% CI [1.3, 19.12]. There was no relationship between anxious attachment and IPV perpetration, however attachment significantly moderated the relationship between PTSD and IPV perpetration as indicated by the significant interaction effect of anxious attachment and PTSD, $b = -.01$, $p < .001$, 95% CI [−.01, −.01]. PTSD and anxious attachment explained 12.14% of the variability in IPV. The second moderation investigating the moderated effect of avoidant attachment, showed that PTSD was related to IPV, $b = .07$, $p = .04$, 95% CI [.01, .14]. There was no relationship between avoidant attachment, and IPV perpetration. However, there was a significant interaction effect of attachment

avoidance and PTSD, b = -.01, p < .001, 95% CI [−.02, −.01]. PTSD and avoidant attachment explained 12.09% of the variability in IPV.

Simple slopes analyses were used to further examine the combined effect of PTSD and anxious and avoidant attachment respectively on IPV perpetration (Field, 2013). The interaction between PTSD and IPV perpetration were tested at low (minus one standard deviation below the mean), medium (mean), and high (plus one standard deviation above the mean) levels of anxious and avoidant attachment (see Figures 1 and 2). At low levels of anxious attachment, there was a positive relationship between PTSD and IPV, b = .15, p < .001, 95% CI [.08, .23]. At medium levels of anxious attachment, there was a positive relationship between PTSD and IPV, b = .08, p = .03, 95% CI [.01, .15]. There was no significant relationship between PTSD and IPV at high levels of anxious attachment, b = .01, p = .89, 95% CI [−.08, .09] (see Figure 1).

At low levels of avoidant attachment, there was a positive relationship between PTSD and IPV, b = .15, p < .001, 95% CI [.08, .23]. At medium levels of avoidant attachment, there was no relationship between PTSD and IPV, b = .07, p = .05, 95% CI [.00, .15]. There was no relationship between PTSD and IPV at high levels of avoidant attachment, b = - .00, p = .93, 95% CI [−.09, .09] (see Figure 2).

Table 7. *Summary of the attachment-moderated association of COVID-PTSD on IPV*

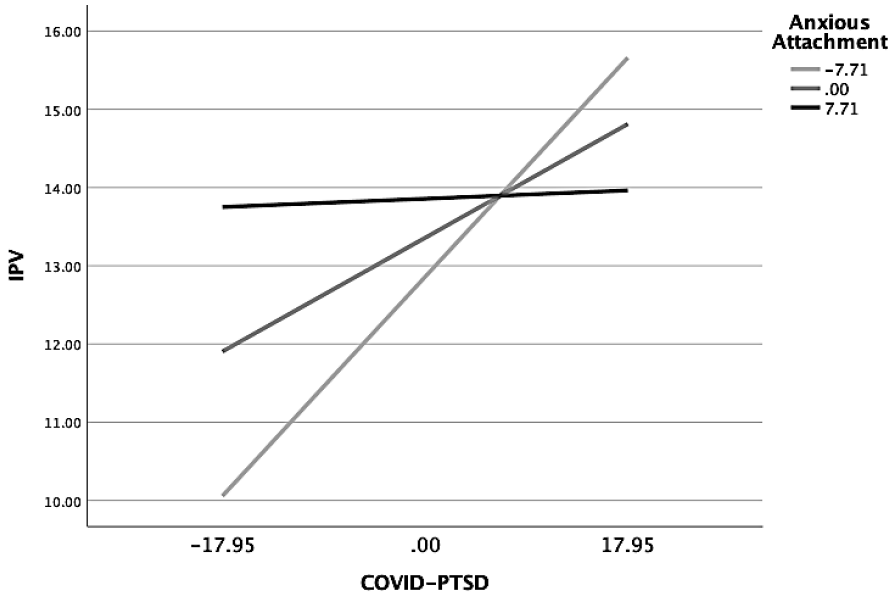
	b	*SE B*	*t*
$R^2 = .12$, $F(8,656) = 11.34$***			
constant	10.23	4.53	2.26*
PTSD	.08	.04	2.18*
Anxious Attachment	.06	.08	.77
PTSD x Anxious Attachment	-.01	.00	-4.08***
Age	-.03	.03	-.97
Gender	-.82	.74	-1.11
SES	-.44	.31	.15
Depression	.05	.07	.78
Avoidant Attachment	.19	.12	1.61
$R^2 = .12$, $F(8,656) = 11.27$***			
constant	12.31	3.81	3.23**
PTSD	.07	.04	1.99*
Avoidant Attachment	.17	.12	.15

PTSD x Avoidant Attachment	-.01	.00	-4.08***
Age	-.04	.03	-1.08
Gender	-.71	.75	-.95
SES	-.38	.31	-1.19
Depression	.05	.07	.73
Anxious Attachment	.10	.08	1.18

Note. All variables mean centered prior to analyses.

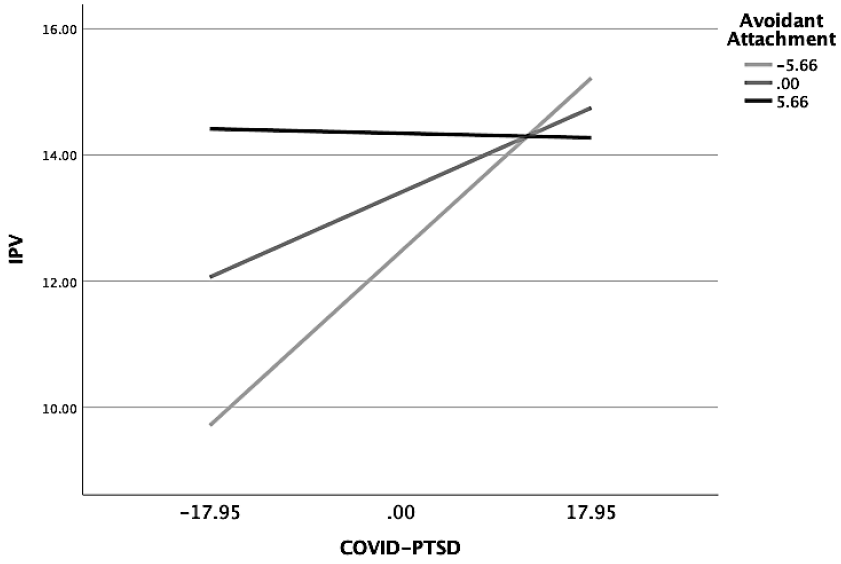
*$p < .05$, **$p < .01$, ***$p < .001$.

Figure 1. Effect of COVID-PTSD on IPV Moderated by Anxious Attachment



Note. IPV = intimate partner violence. Effect of COVID-PTSD on IPV as moderated by anxious attachment and controlling for age, gender, SES, COVID-depressive symptoms, and avoidant attachment. As COVID-PTSD increases, IPV decreases in individuals with low levels of anxious attachment (relatively secure attachment).

Figure 2. Effect of COVID-PTSD on IPV Moderated by Avoidant Attachment



Note. IPV = intimate partner violence. Effect of COVID-PTSD on IPV as moderated by avoidant attachment and controlling for age, gender, SES, COVID-depressive symptoms, and anxious attachment. As COVID-PTSD increases, IPV decreases in individuals with low levels of avoidant attachment (relatively secure attachment).

COVID-related Depressive Symptoms

Table 5 and 6 contain descriptive statistics and intercorrelations among all participants and study variables. The mean *CES-D* score for all participants was M = 34.87 (SD = 9.53), with male participants M = 34.76 (SD = 9.30) and female participants M = 35.07 (SD = 9.98), indicating severe depressive symptomatology and an increased risk for clinical depression. Those in an exclusive relationship indicated a mean score of M = 39.62 (SD = 8.21), participants who were cohabitating indicated a mean score of M = 40.38 (SD = 7.48), and those who were married were found to indicate a mean score of M = 34.00 (SD = 9.52). Demographic variables that had statistically significant positive associations with *CES-D* score were age and SES (see Table 3).

Two moderation analyses were run with SPSS PROCESS macro (Hayes, 2017) to examine the relationship between COVID-related depressive symptoms and IPV. To assess whether anxious and avoidant attachment style moderated this relationship, age, gender, SES-harm, PTSD, anxious and avoidant attachment style, respectively were controlled for. All variables were mean-centered and deviation scores calculated to enable creation of the interaction term (see Table 8).

COVID-related depressive symptoms were not associated with IPV perpetration, and there was also no relationship between anxious attachment and IPV perpetration. However, anxious attachment significantly moderated the relationship as indicated by the significant interaction effect of anxious attachment and depressive symptoms, b = .02, p < .001, 95% CI [.01, −.03]. COVID-related depressive symptoms

and anxious attachment explained 12.23% of the variability in IPV perpetration. The second moderation investigating the moderated effect of avoidant attachment, showed no relationship between depressive symptoms and IPV perpetration and there was no relationship between avoidant attachment and IPV perpetration. However, there was a significant interaction effect of depressive symptoms and avoidant attachment indicating that avoidant attachment significantly moderated the relationship between depressive symptoms and IPV perpetration, $b = .03$, $p < .001$, 95% CI [.01, .04]. Depressive symptoms and avoidant attachment explained 11.8 % of the variability in IPV.

Simple slopes analyses were used to further examine the combined effect of depressive symptoms and anxious and avoidant attachment respectively on IPV perpetration (Field, 2013). The interaction between depressive symptoms and IPV perpetration were tested at low (minus one standard deviation below the mean), medium (mean), and high (plus one standard deviation above the mean) levels of anxious and avoidant attachment (see Figures 3 and 4). At low levels of anxious attachment, there was no relationship between depressive symptoms and IPV, $b = -.10$, $p = .25$, 95% CI [-.25, .07]. At medium levels of anxious attachment, there was also no relationship between depressive symptoms and IPV, $b = .06$, $p = .37$, 95% CI [-.07, .20]. There was a significant relationship between depressive symptoms and IPV at high levels of anxious attachment, $b = .22$, $p = .003$, 95% CI [.07, .36] (see Figure 3).

At low levels of avoidant attachment, there was no relationship between depressive symptoms and IPV, $b = -.09$, $p = .30$, 95% CI [-.26, .08]. At medium levels of avoidant attachment, there was no relationship between depressive symptoms and IPV, $b = .06$, $p = .39$, 95% CI [-.08, .20]. There was a significant relationship between

depressive symptoms and IPV at high levels of avoidant attachment, $b = .21$, $p = .005$, 95% CI [.06, .35] (see Figure 4).

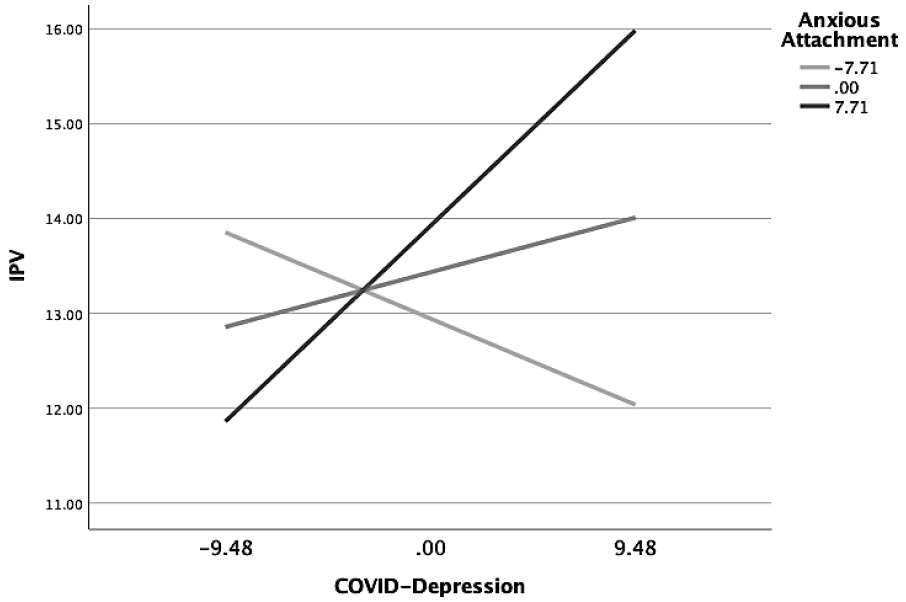
Table 8. Summary of the attachment-moderated association of COVID-depressive symptoms on IPV

	b	*SE B*	*t*
$R^2 = .12$, F (8,656) = 11.42***			
constant	8.05	3.74	2.15*
Depression	.06	.07	.89
Anxious Attachment	.06	.08	.76
Depression x Anxious	.02	.01	4.16***
Age	-.04	.03	-1.05
Gender	-.79	.74	-1.06
SES	-.35	.31	-1.11
PTSD	.10	.04	2.64**
Avoidant Attachment	.19	.12	1.67
$R^2 = .12$, F (8,656) = 10.97***			
constant	10.59	3.06	3.47**
Depression	.06	.07	.87
Avoidant Attachment	.17	.12	1.44
Depression x Avoidant	-.03	.01	3.75***
Age	-.04	.03	-1.19
Gender	-.72	.75	-.97
SES	-.38	.31	-1.19
PTSD	.09	.04	2.50*
Anxious Attachment	.10	.08	1.15

Note. All variables mean centered prior to analyses.

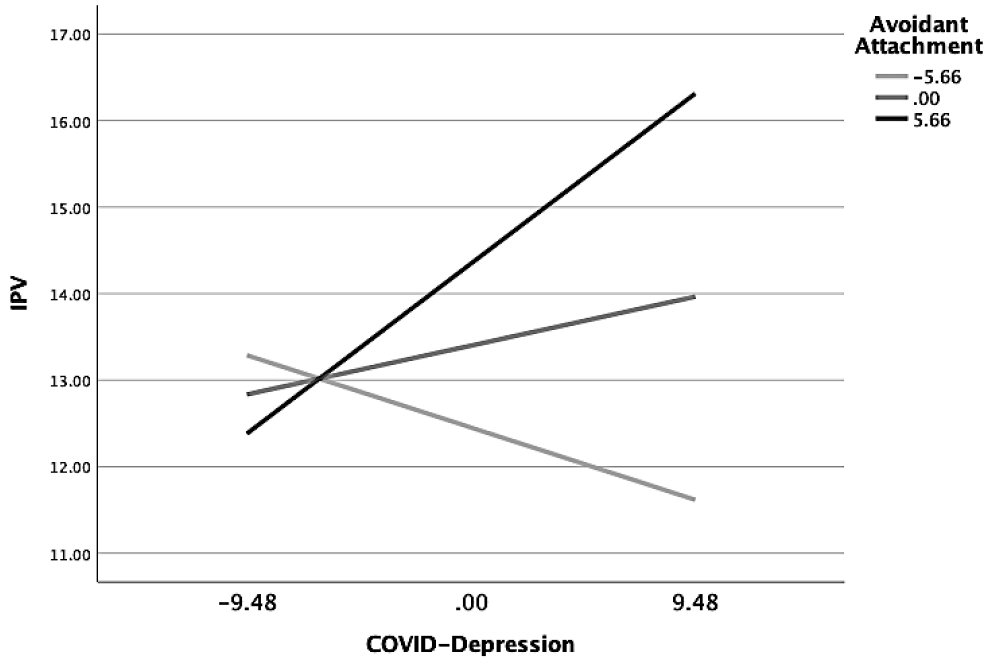
*$p < .05$, **$p < .01$, ***$p < .001$.

Figure 3. Effect of COVID-depressive symptoms on IPV Moderated by Anxious Attachment



Note. IPV = intimate partner violence. Effect of COVID-depressive symptoms on IPV as moderated by anxious attachment and controlling for age, gender, SES, COVID-PTSD and avoidant attachment. As COVID-depressive symptoms increase, IPV increases in individuals with high levels of anxious attachment.

Figure 4. Effect of COVID-depressive symptoms on IPV Moderated by Avoidant Attachment



Note. IPV = intimate partner violence. Effect of COVID-depressive symptoms on IPV as moderated by avoidant attachment and controlling for age, gender, SES, COVID-PTSD and anxious attachment. As COVID-depressive symptoms increase, IPV increases in individuals with high levels of avoidant attachment.

3.1.5 DISCUSSION

The emergence of the COVID-19 pandemic exacerbated another pre-existing public health issue--rates of IPV have increased globally. Previously, it was found that individuals with insecure attachment style (anxious and avoidant) are more at risk of developing PTSD and depressive symptoms due to stress, and moreover are more likely to perpetrate violence against intimate partners. The aim of the present study was to determine the extent to which COVID-19-related PTSD and depressive symptoms are related to IPV perpetration and whether these relationships are moderated by individuals' attachment styles.

In line with Hypothesis 1a, the findings of the present study indicated that those with an insecure attachment style (high levels of anxiety, high levels of avoidance) reported higher levels of IPV perpetration under high levels of COVID-related PTSD, however contrary to what was expected, there was no difference in frequency of IPV perpetration at lower levels vs higher levels of COVID-related PTSD. This means that insecure individuals (both anxious and avoidant) perpetrated violence against intimate partners at equal frequency regardless of COVID-related PTSD.

Moreover, in line with Hypothesis 1b, there was a significant increase in IPV among individuals with a relatively secure attachment style (low levels of anxiety and low levels of avoidance) under high levels of COVID-related PTSD compared to low levels of COVID-related PTSD. This suggests that individuals with a relatively secure attachment style may be at risk of perpetrating violence against intimate partners under heightened distress. Previously, it was shown that persistent PTSD (related to war trauma) may disrupt the regulatory functioning of the attachment system and thereby erode attachment security (Mikulincer et al., 2014). It may therefore be that COVID-

related PTSD disrupts the regulatory functions of secure individuals' attachment system and disables the activation-deactivation responsiveness just when it is needed the most.

In light of Mikulincer and colleagues' (2014) findings that among individuals with persistent PTSD, security priming failed to lower the availability of thoughts related to trauma or induce a positive mood in times of need, it may be that although the attachment system is activated, persistent PTSD may keep individuals feeling helpless and frustrated regardless of comfort and support from intimate partners. Moreover, the erosion of attachment security may result in poor relationship quality and consequently to IPV perpetration during conflict, thereby equating secure individuals to insecure people who show heightened IPV perpetration without any indication of COVID-related PTSD. Future studies will be needed to replicate these findings and should further investigate whether such erosions of attachment security have additional impacts on secure individuals' intimate relationship quality.

From an attachment perspective, protest behaviors should function to signal or communicate distress to elicit help or support from attachment figures (Mikulincer & Shaver, 2003, 2007a; Shaver & Mikulincer, 2002; Simpson et al., 1992). Consequently, it may be that certain individuals resort to more maladaptive protest behaviors in the form of violent responses when they need help the most (Gilbert & Allen, 1998). Indeed, aggression for signalling has been shown to occur more frequently in individuals with PTSD (Cantor, 2009) and serious threats may lead to the activation of aggressive defences. Hyperarousal symptoms of anger, induced by COVID-19, may place individuals at an increased risk of perpetrating violence against intimate partners (Taft et al., 2011).

Alternatively, anger may serve as a means of influencing the behavior of intimate partners to attain a set goal of a hypothesized power/dominance behavioral system (DBS, Galinsky et al., 2003; Keltner, Gruenfeld, & Anderson, 2003). This biologically based system has been shown to guide dominance motivations and dominant behaviors in individuals and has been linked with various psychopathologies including PTSD (Johnson et al., 2012). From this perspective, experiencing a sense of power may serve as an approach orientation (e.g., heightened attention to rewards, Carver & White, 1994) or promotion orientation (e.g., heightened attention to threats, Higgins, 1998). Indeed, Mikulincer and Shaver (2011) suggested that consequences of elevated power are also moderated by individuals' attachment styles because they are likely to depend on how one relates to others. Combined with research that has linked violence towards intimate partners with an attempt to maintain control and power (Hamberger et al., 2017; Hamby, 1996; Straus, 2008; Voith et al., 2018), it may be that individuals who develop COVID-related PTSD may feel powerless and resort to IPV to achieve a sense of control and power over intimate partners. This would further be in line with research showing that PTSD may play a role in the power and control dynamics that have been linked with the perpetration of IPV (Gilbar, Taft, & Dekel, 2020; Rosenbaum & Leisring, 2003; Taft et al., 2016). Future research should investigate the potentially pivotal role of the DBS in IPV perpetration during heightened distress.

The present study found, in line with Hypothesis 2, that higher levels of COVID-related depressive symptoms were linked with heightened IPV perpetration in insecure individuals (both anxious and avoidant attachment style). These findings provide support for previous research indicating that depressive symptoms due to COVID-19 may aggravate hyperactivating strategies and deactivating strategies may

collapse under heightened distress which may place them at an increased risk of developing depressive symtpoms (Mikulincer et al., 2000; Mikulincer & Shaver, 2012). Under heightened levels of COVID-related depressive symptoms, those with an insecure attachment style may fail to seek the support and safety from intimate partners and in their desperate state may resort to maladaptive protest behaviors which could escalate in IPV perpetration (e.g., "anger of despair", Bowlby, 1973).

The present finding may also provide support for the notion that secure individuals are better at seeking support and safety from intimate partners, at least within the context of depressive reactions to stress. An evolutionary perspective of psychopathologies, whereby PTSD and depressive symptoms should function as independent defense strategies in response to adversity, may further explain this finding. Whereas PTSD induces action, often preceding an adversity, and is associated with increased aggression or IPV generally, and among those who are securely attached when under extreme stress (e.g., Orth & Wieland, 2006; Taft et al., 2011), depression induces a lack of action among the secure (Brown, Harris, & Hepworth, 1995) precisely when it would otherwise be too energetically expensive or risky to aggress (Nesse, 2002; Nettle & Bateson, 2012). From this perspective, PTSD may be a trigger that activates IPV perpetration (among those who are secure and not normally high in IPV), whereas depression may decrease aggressive responses in times of conflict and individuals with a relatively secure attachment style may resort to more adaptive strategies to gain help and support from partners (Hagen, 1999, 2002; Hagen & Thomson, 2004; Shaver et al., 2001; Sheeber, Hops, & Davis, 2001; Watson & Andrews, 2002). Future research is needed to investigate this notion further with respect to the differing interactions of attachment security with PTSD and depression in predicting IPV perpetration.

Strengths and Limitations

The present study is the first to investigate the implications of COVID-related mental health experiences and their interaction with attachment styles in predicting IPV perpetration. This research adds to the limited literature on the consequences of traumatic events on the attachment system and intimate relationship outcomes. The present findings provide support for both the notion that a) COVID-related PTSD may contribute to the way stressful and traumatic experiences erode attachment security and further increase the risk of IPV perpetration, and b) COVID-related depressive symptoms may contribute to the way stressful and traumatic experiences aggravate insecure individuals' coping strategies and place them at an increased risk to perpetrate IPV. The strengths of the present study include its relatively large and international sample as well as the timing of data collection, which allowed for exploration of how COVID-related psychopathologies during the crucial period of a global lockdown may be associated with IPV perpetration. Importantly, the present findings need to be cautiously interpreted with respect to their limitations.

An important limitation of this research is that, like most previous studies that have investigated associations between attachment styles and PTSD, the present study is cross-sectional and correlational, which means that the causal direction of these associations cannot be determined. Therefore, the generalizability of the present findings is limited, and further studies are needed to replicate and extend these findings.

More research is also needed on how traumatic events and PTSD affect the attachment system. Although previous longitudinal studies have investigated changes in PTSD as a function of attachment styles (e.g., Fraley et al., 2006), future research should investigate if the reverse implies to gain a better understanding of whether PTSD

can disrupt attachment functions and erode attachment security over time, as well as how such outcomes could be reversed or prevented.

Although it has been shown that data collected via MTurk are of equal quality to data collected by other internet methods and from college undergraduates in person (Buhrmester, Kwang, & Gosling, 2011; Casler et al., 2013) and tend to be more socioeconomically and ethnically diverse than traditional internet or college samples (Casler, Bickel, & Hackett, 2013), the present study did not assess ethnic and socioeconomic diversity in participants other than their countries of residence and whether COVID-19 negatively impacted their finances. Moreover, the survey did not include measures that would ensure the high quality of the present MTurk data (e.g., attention check questions).

Cultural differences may also be taken into consideration as there could be regional differences in mental well-being depending on the severity of the outbreak, lockdown measures and regulations, government responses, dissemination of information related to COVID-19, national economy, and availability of medical supplies (Xiong et al., 2020; Zhang, Pan, Cai, & Pan, 2021). Although the present study included a larger sample of Indian participants, cross-cultural differences were not explored. Moreover, data collection took place in May 2020 and some US states may had already lifted or resorted to more relaxed lockdown measures at the time of collection. Additional information about participants may contribute to a better understanding of individuals' susceptibility to develop COVID-related PTSD and depressive symptoms and thereby place individuals at an increased risk of perpetrating violence against intimate partners. Such factors could further include whether participants had COVID-19 or not and the severity of symptoms, or if they are

following social distancing measures, are working from home, or have children living in their household. Future studies should assess these individual, contextual, and cross-cultural differences further.

Although the present sample did not find any significant gender differences, individual differences in sexual orientation were not explored given the rather small sample size of LGBTQ+ participants. Previous research has consistently found that LGBTQ+ individuals may be more susceptible to develop psychopathologies and were also shown to have increased levels of anxiety and depressive symptoms due to COVID-19 (e.g., Forte et al., 2020; Liu et al., 2020; Sun et al., 2020). Consequently, future studies should explore the impact of COVID-related mental health issues on IPV perpetration in LGBT+ individuals. Moreover, the present analyses did not distinguish between couples that were in a relationship, cohabitating or married. Future studies could further investigate context-dependent and dyadic variables that could impact the association of COVID-related PTSD and IPV such as relationship quality and the buffering role of partner support (e.g., Balzarini et al., 2020). Additional research is also needed to assess other risk factors found to promote IPV perpetration and that may be related to COVID-related PTSD and depressive symptoms, such as alcohol and drug abuse.

Finally, although the present study draws attention to the potential mental health issues that can arise from COVID-19, another limitation of the present study is that it did not assess how participants' current mental health compares to their mental health well-being before COVID-19. Longitudinal studies will be needed to examine whether COVID-related PTSD and depressive symptoms may decrease over time as lockdown measures are eased and for the most part removed. When assessing the psychological

impact of COVID-19, the duration of symptoms should be taken into consideration. From an evolutionary perspective, psychological responses to traumatic and stressful events can be protective (Brosschot, Verkuil, & Thayer, 2016; Yaribeygi et al., 2017). However, persistent stressors could result in chronic PTSD symptoms and may pose a long-term threat to individuals and their intimate partners which could last years (Kessler et al., 1995).

The present findings further point out the importance of identifying the mental health impact of COVID-19 in the general population. However, although the present study supports previous evidence that COVID-19 may be understood as a traumatic stressor, this interpretation could add to the issue of conceptual bracket creep in defining trauma and PTSD (McNally, 2003). Therefore, future studies investigating the impact of COVID-19 stress on individuals, should consider differentiating between evolutionary responses to stress and genuine symptoms of a disorder, specifically in the context of COVID-19 (e.g., Arpaci, Karataş, & Baloğlu, 2020; Taylor et al., 2020).

Finally, the present study was not pre-registered, however for the purpose of transparency, the data for the specific variables including the syntax and output of the analyses were made public on OSF. Future studies should seek to replicate these findings using a pre-registered design.

Implications

A key finding of the present study was that secure individuals indicated heightened levels of IPV perpetration under heightened levels of COVID-related PTSD. An important novel contribution to the literature is that individuals with a relatively secure attachment style seem to perpetrate more violence against intimate partners

under high levels of COVID-related PTSD, whereas heightened levels of COVID-related depressive symptoms are associated with heightened levels of IPV perpetration in insecure individuals. These findings could explain the recent and global spike in IPV cases during COVID-19 and highlight the importance for future research to integrate individual differences to better understand these differences in susceptibility to stress and trauma which can have profound consequences not only for individuals but also for their intimate partners. The present study also points out the necessity for developing both practical prevention and interventions to help people cope better with COVID-related stress and trauma. For example, psychological interventions in the form of cognitive processing therapy (CPT; Resick & Schnicke, 1992) which has been shown to be helpful for individuals with PTSD who perpetrate violence against intimate partners (Murphy and Eckhardt,2005), as well as standard anger management approaches that have been found to lead to reductions in IPV perpetration among individuals with PTSD (Chemtob et al., 1997) could be made more accessible and affordable such as via internet, phone or text messaging services (Slakoff et al., 2020). Moreover, when treating individuals with COVID-related PTSD, the associated attachment needs, worries, and doubts need to be taken into consideration. For instance, a therapeutic setting could provide experiences of security which may help individuals re-establish a normal functioning of attachment security.

3.1.6 CONCLUSION

Violence against intimate partners tends to increase during humanitarian crises and emergencies. Since the onset of COVID-19 and imposed lockdown measures that forced couples into close-proximity, IPV cases have soared world-wide. Attachment styles likely play an important role in how individuals cope with distress. Although

secure attachment has been consistently associated with better adjustment in times of need, the findings of the present study add to the existing literature on how persistent stress responses to traumatic events may cumulatively erode healthy attachment functioning. The present study provides additional evidence on the importance of understanding the psychological consequences of COVID-19 on individuals and intimate relationships. Identifying the risk factors that place individuals at an increased risk of IPV perpetration is critical for improving mental health interventions, better enabling psychologists to deal with future crises that require us to help both individuals and their intimate partners stay safe while staying home.

Chapter 4

Got you where I want you: Relationship quality as a buffer from IPV perpetration in insecure people during lockdown

4.1 Study 3

4.1.1 ABSTRACT

The COVID-19 pandemic was a stressful life event that posed challenges for both individuals and couples. Previously, we found that COVID-related PTSD was associated with higher rates of IPV perpetration in individuals with a secure attachment style whereas there was no association between COVID-related PTSD and IPV perpetration in insecure individuals. The present study investigated the role of relationship quality as a mediator between COVID-related PTSD and IPV. The results indicate that individuals with an insecure attachment who report high levels of COVID-PTSD perceive higher levels of relationship quality and report lower levels of IPV perpetration. The findings suggest that relationship quality may be a buffer for IPV in individuals with insecure attachment. PTSD may therefore influence IPV perpetration via relationship quality which could have important clinical implications for reducing violence in intimate relationships.

4.1.2 INTRODUCTION

Intimate partner violence (IPV) has long been a global public health issue, but with cases significantly increasing during the COVID-19 pandemic, IPV has been referred to as a pandemic within a pandemic (Evans, Lindauer, & Farrell, 2020). Attachment theory (Bowlby, 1972, 1982) may provide a framework for understanding the underlying individual mechanisms motivating certain interpersonal behaviors during times of heightened distress. According to attachment theory, individuals rely on attachment figures for help with emotion regulation. The innate attachment behavioral system drives individuals to seek proximity to attachment figures as a means of attaining safety and security in times of need. For instance, a child's heightened autonomic arousal during a stressful situation will subside when holding the mother's hand (Field, 2002). Similar in adults, the attachment behavioral system is activated when individuals experience distress or threats to their intimate relationships (Simpson & Rholes, 1994). In turn, individuals become alarmed and attempt to regain the desired level of proximity with the attachment figure, their intimate partner. As such, adults, like infants, tend to seek and maintain proximity to their intimate partners as a means of establishing safety (Sperling & Berman, 1994). For example, when adults hold the hand of an intimate partner during a stressful situation their physiological arousal has been shown to decrease (Coan, Schaefer, & Davidson, 2006).

Individuals in distress should therefore search for internal representations of attachment security in times of heightened distress. Consequently, the mental activation of such representations should soothe individuals and in turn, induce effective coping (Mikulincer et al., 2001). Indeed, the distress-regulating function of mental representations of attachment security has been demonstrated in several experiments.

For instance, when participants were presented with a threat-related word, they were faster to encode the name of an attachment figure (Mikulincer, Gillath, & Shaver, 2002). Moreover, the activation of representations of attachment security was shown to increase positive affect and to eliminate the effect of threats (e.g., security priming, Mikulincer, Hirschberger, Nachmias, & Gillath, 2001; Mikulincer & Shaver, 2007b). Proximity seeking to an attachment figure in times of stress may therefore be a key function of attachment behavior. However, individuals differ in their attachment-system functioning referred to as attachment styles (Bowlby, 1973). These styles are conceptualized across two dimensions, anxiety, and avoidance (Brennan, Clark, & Shaver, 1998). Anxious attachment style refers to the extent to which an individual worries that an attachment figure will not be available in times of need. Whereas avoidant attachment refers to the extent to which an individual inhibits support-seeking in times of need and resorts to self-reliance rather than support-seeking. Individuals who score low on both dimensions are referred to as having a secure attachment style (Brennan et al., 1998).

Relationship Quality from an Attachment Perspective

In the context of COVID-19, relationship quality may be particularly important to consider, as it has been linked to mental, physical, and sexual health outcomes during the pandemic. For instance, relationship quality and intimacy were positively related to perceived physical health (Rodrigues and Martins, 2020). In addition, individuals who were in "good" relationships reported better mental health during COVID-19 compared to those who were in "bad" relationships and those who were single (Pieh et al., 2020). Importantly, in the context of the present study, Luetke et al., 2020) demonstrated individuals who experienced more frequent conflict with their partners during COVID-

19 were more likely to report decreased solitary as well as intimacy. This finding highlights the importance of investigating relationship quality when considering conflict, and more specifically IPV in the time of COVID-19.

Satisfaction in intimate relationships refers to having one's needs met. From an attachment perspective, relationship satisfaction should be higher when partners are available and reliable sources of intimacy and closeness, and moreover provide effective support and security (safe haven; Feeney, 1999c; Mikulincer, Florian, Cowan, & Cowan, 2002).

In contrast, relationship dissatisfaction could arise from attachment related insecurities and worries (Kobak, Ruckdeschel, & Hazan, 1994). Indeed, secure attachment has been consistently linked with high levels interdependence, satisfaction, commitment, and trust. Conversely, insecure attachment styles such as anxious and avoidant attachment have been negatively related to satisfaction and trust in intimate relationships. Specifically, individuals with an insecure attachment style, both anxious and avoidant, tend to report lower satisfaction with intimate relationships than those with a secure attachment style (Feeney et al., 1993; Kirkpatrick & Davis, 1994; Pistole, 1989; Stein et al., 2002).

Specifically, hyperactivating strategies associated with attachment anxiety seem to predispose anxiously attached individuals to experience greater emotional distress in intimate relationships, which in turn may impact their behavior towards intimate partners (Campbell, Simpson, Boldry, & Kashy, 2005; Collins, 1996; Collins & Feeney, 2000; Simpson, Rholes, & Phillips, 1996). Such individuals tend to report more conflict and negative interactions with intimate partners (Collins, 1996; Simpson et al., 1996; Li & Chan, 2012). Problems in intimate relationships may therefore be due to a lack of a secure

base and failure to gain safety within the relationship (Bowlby, 1982, 1988). For example, perceived partner's unavailability or rejection may result in relationship distress which in turn, may activate or deactivate the attachment-system. Consequently, the anger and frustration may cause individuals to resort to dysfunctional ways of demanding attention from their intimate partners (Johnson, 2011). Such conflict could further escalate and result in violent behaviors. Indeed, when a threat is perceived, individuals may be motivated to employ behaviors designed to maintain the attachment system (Bowlby, 1984). From an attachment perspective, IPV may be an attempt to seek personal safety and security within the relationship and may be employed as a response to real or imagined threats of abandonment or rejection by intimate partners.

A growing body of literature has identified adult attachment as a risk factor of IPV. Specifically, studies consistently found a link between insecure attachment and IPV (Babcock, Jacobson, Gottman, & Yerington, 2000; Bookwala & Zdaniuk, 1998; Dutton, Saunders, Starzomski, & Bartholomew, 1994; Henderson, Bartholomew, Trinke, & Kwong, 2005). Although individual differences in attachment-system functioning have been previously linked to mental health and social adjustment and secure attachment has been consistently associated with stress-buffering effects (Dozier, Stovall, & Albus, 2008; Mikulincer & Shaver, 2007a), a longitudinal study on attachment-related consequences of war captivity and trajectories of PTSD (Mikulincer, Solomon, Shaver, & Ein-Dor, 2014) suggested that the attachment-system functioning may be disrupted following trauma and may erode the healing and regulatory benefits of attachment security.

Additionally, there is evidence that attachment security may protect relationship quality during life transitions and stressful periods. For example, Amir et al. (1999)

found that attachment security buffered the detrimental effects of prolonged infertility on marital satisfaction. Similar effects have also been noted during the transition to parenthood (Rholes et al., 2001; Simpson & Rholes, 2002a).

Provided our previous study demonstrated that individuals with a relatively secure attachment style reported perpetrating more violence against their intimate partners at high levels of COVID-related PTSD (Gottlieb & Schmitt, 2023), it may be that intense and prolonged COVID-related PTSD nay erode relationship quality in secure individuals, and in turn lead to increased IPV perpetration.

In line with our previous findings, it may be that attachment worries and doubts prevent successful working through of a trauma, and the resulting mental reactivation of the trauma could then strengthen negative representations of the self and others and further erode a sense of security. This erosion of security may ultimately lead to a disorganized attachment system over time. This could imply that although a sense of being loved and supported by significant others is a source of strength and resilience during times of distress (Mikulincer & Shaver, 2007a), the beneficial effects of secure attachment may be eroded by the stressful and persistent circumstances created by COVID-lockdown. Consequently, if the stressful circumstances exceed individuals' coping abilities, couples may ultimately suffer the consequences. For instance, a study assessing the differential effects of low, moderate, and high stress on relationship satisfaction demonstrated a relationship between stress levels and relationship quality (Tesser & Beach, 1998). Specifically, as stress increased, relationship quality decreased. This suggests that acute stress could spill over into the relationship (Simpson & Rholes. 2017). As such, it may be that daily life interference caused by the pandemic could overwhelm functional coping strategies, and further drain intimate partners' energy and

resources, and in turn, negatively impact relationship quality. Indeed, prior research suggests that lingering stress caused by stressful events (e.g., natural disasters) may disrupt adaptive relationship functioning over time (Cohan, 2010; Marshall et al., 2017). The aim of the present study was to assess the role of relationship quality in the association between COVID-related PTSD and IPV perpetration. The study predicts that relationship quality will significantly mediate the relationship between COVID-PTSD and IPV in that high levels of COVID-PTSD will be associated with low levels of relationship quality in secure individuals and low levels of relationship quality will be associated with high levels of IPV perpetration in secure individuals.

4.1.3 METHOD

Participants.

Data were originally collected from over 975 participants via MTurk. The present article will focus on a subsample of 886 participants of whom (*N* = 92) reported being in an exclusive relationship, (*N* = 44) were cohabitating and (*N* = 676) were married. Participants' mean age was 35.26 years (*SD* = 10.47). The majority of participants were men (*N* = 589) and women (*N* = 297), of which (*N* = 731) reported being attracted to individuals of the opposite sex, (*N* = 41) reported being attracted to individuals of the same sex and (*N* = 204) reported being attracted to both individuals of the opposite and same sex. Participants were for the most part living in the United States (*N = 558*) with some participants from Europe (*N=32*), Brazil (*N* = 16) and Asia (*N*=204, the majority residing in India). For the indicated countries, lockdown measures were introduced in March of 2020 and data for the present study were collected in May

of 2020, meaning two months after COVID-19 was declared a pandemic and global lockdown measures were introduced. All study procedures outlined below were approved by the university at which the research was conducted.

Procedure.

Prospective participants viewed an advertisement for the study on MTurk's job listings (Gosling et al., 2004). Those interested in and eligible to participate (i.e., at least 18 years of age) were provided a link to an informed consent statement about the study. Those who agreed to participate could access and complete the survey, and those who did not agree to participate were exited from the study. Participants were compensated $0.50 for completing the study (Buhrmester, Kwang, & Gosling, 2011).

Materials.

Relationship Quality was measured with one item "In general how satisfied are you with your relationship?" and scored on a scale from 1 (low) to 5 (high).

The *Impact of Event Scale* (Revised, Weiss & Marmar, 1997) is a 22-item scale which is rated on a 0 (*not at all*) to 4 (*extremely*) scale and was used to assess PTSD-responses to COVID-19 in the general population (e.g., "I had trouble concentrating", "I felt irritable and angry", "I had trouble staying asleep")**.** The instructions were adapted to specifically apply to COVID-19, e.g., **'**how distressing each item has been since the onset of COVID-19 lockdown'. PTSD is a common emotional disorder in the general population after a disaster. Research from previous viral outbreaks as well as from the most recent COVID-19 pandemic indicate that viral outbreaks and imposed quarantine measures can be traumatic for individuals and may result in PTSD. Indeed, PTSD in the general population has been described as a "second tsunami of COVID-19" (Dutheil,

Mondillon, & Navel, 2021). To measure traumatic stress symptoms in the context of viral outbreaks, the Impact of Event Scale has been shown to be valuable (Horowitz, Wilner, Alvarez, 1979) and has been used in several studies to assess the impact of COVID-19 in the general population across several countries (Cooke, Eirich, Racine, & Madigan, 2020; Zhang, Pan, Cai, & Pan, 2021). Importantly, compared to other self-report measures of psychological impact, the advantage of using the IES-R is that the event can be specified. Indeed, the IES-R adapted for Covid-19 has been found to be a valid measure of traumatic stress symptoms associated with the COVID-19 pandemic (Zhang et al., 2021. The IES-R with modifications for COVID-19 (Vanaken et al., 2020) showed acceptable internal validity ($\alpha = .75$). The current study found good internal consistency for the COVID-adjusted IES scale ($\alpha = .96$). The maximum score of the IES is 88. A score of 33-38 is the cut-off for a clinical diagnosis of PTSD (Creamer, Bell, & Failla, 2003). Moreover, a score of 39 and above has been shown capable of suppressing the functioning of the immune system for ten years following the traumatic event (Kawamura, Kim, & Asukai, 2001).

Intimate partner violence perpetration was measured using *The Revised Conflict Tactics Scales* (CTS2; Straus, Hamby, Boney-McCoy, Sugaran, 1996). The CTS2 contains five subscales: *psychological aggression*, *physical assault*, *sexual coercion*, *negotiation*, and *sustained injury*. Considering the focus of the present research is on perpetration (and not victimization) of IPV, the subsequent analyses focused on the *physical* (e.g., “Slammed my partner against a wall”) and *sexual* (e.g., “Used force to make my partner have sex”) perpetration domains. Items were rated on a 6-point scale ranging from 1 (once since the lockdown) to 6 (more than 20 times since the lockdown).

To assess romantic attachment, participants completed the *12-item Experiences in Close Relationships Inventory-Short* (ECR-S; Wei, Russell, Mallinckrodt, & Vogel., 2007). Sample questions include "It helps to turn to my romantic partner in times of need" (anxiety subscale) and "I want to get close to my partner, but I keep pulling back" (avoidance subscale). Items were rated using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). An overall score was computed for the 6 items each anxious and avoidant subscales. The original article found good internal reliability for anxious attachment (α = .78 to .86) and avoidant attachment (α = .78 to .88). The current study similarly found adequate internal reliability for anxious attachment (α = .72) and avoidant attachment (α = .87). Because the previous study found the same pattern for both anxious and avoidant individuals, the present study comprised both anxious and avoidant attachment into one variable "insecure attachment".

4.1.4 RESULTS

Table 9 contains descriptive statistics for all participants and intercorrelations among all study variables.

Table 9. Bivariate Correlations and Descriptive Statistics for Relationship Quality, PTSD, IPV, Insecure Attachment

All Participants

	1	2	3	4	5	6	7
[a]RQ	-						
[b]PTSD	.35***	-					
IPV	-.06	.253***	-				
Insecure Attachment	.33***	.75***	.25***	-			
n	781	743	679	785	791	811	797
Mean	12.90	38.13	34.87	26.38	25.44	35.26	2.71
SD	9.39	18.07	9.53	7.72	5.62	10.47	1.32

Note. All variables were mean centered prior to analyses.

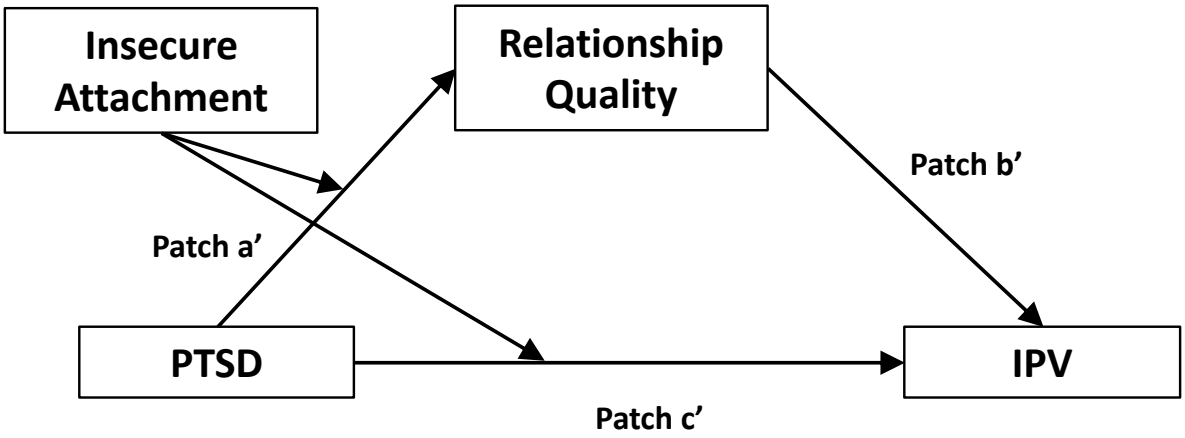
[a]RQ = Relationship Quality, [b]PTSD = COVID-related PTSD, , [c]IPV = Intimate Partner Violence, [d]Insecure Attachment = Anxious Attachment and Avoidant Attachment

* $p < .05$, ** $p < .01$, *** $p < .001$.

Testing for Moderated Mediation

To examine the moderating effect of insecure attachment on the relationship between: (1) PTSD and relationship quality; and (2) relationship quality and IPV perpetration, a moderated mediation was used using PROCESS macro (Model 58) by Hayes (2013). See Figure 5.

Figure 5. The moderated mediation model applied in this study



As Table 10 illustrates, there was a significant interaction effect between COVID-related PTSD and insecure attachment on relationship quality (B = .05, B_{SE} = .01, t = 5.74, p < .001). The conditional indirect effect of COVID-related PTSD on relationship quality as the mediator was significant at high levels of insecure attachment. To facilitate the interpretation of this interaction effect, the effects of COVID-related PTSD on relationship quality were tested by a simple main effects analysis (1 SD below the mean, at the mean, and 1 SD above the mean, respectively). See Figure 6. Simple slope tests indicated that, for individuals who had medium levels of insecure attachment, COVID-related PTSD was significantly associated with relationship quality (B = .04, B_{SE} = .01, t = 5.20, p < .001), as well as for individuals who had higher levels of insecure attachment (B = .09, B_{SE} = .01, t = 8.92, p < .001). However, there was no significant effect for individuals who scored low on insecure attachment (B = -.00, B_{SE} = .01, t = -.46, p = .65). See Figure 6.

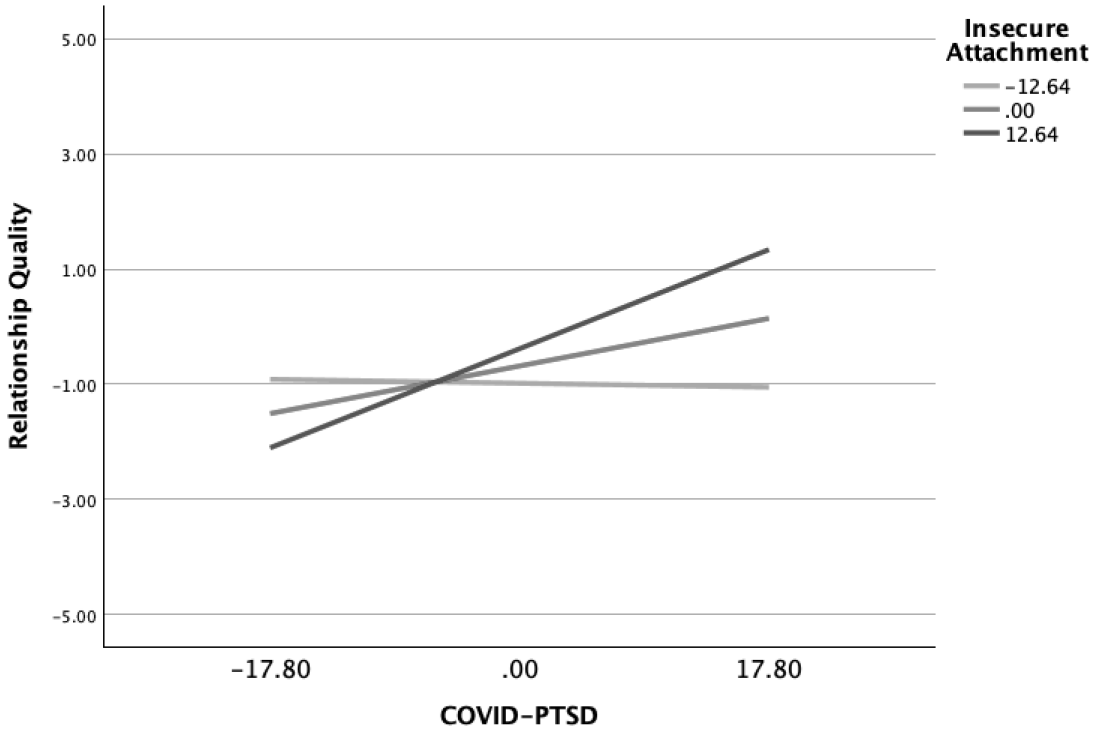
Table 10. Moderated Mediation Analysis testing the *interaction effect of COVID-related PTSD and the moderator Insecure attachment on the mediator* Relationship Quality

	B	*SE*	*t*
Relationship Quality			
$R^2 = .45$, $F(3,783) = 65.05$***	-.57	.11	-5.04***
constant			
PTSD	.04	.01	5.20***
Insecure Attachment	.06	.02	3.63**
PTSD * Insecure Attachment	.01	.00	9.19***

Note. All variables mean centered prior to analyses.

*$p < .05$, **$p < .01$, ***$p < .001$.

Figure 6. The effect of COVID-related PTSD on Relationship Quality moderated by Insecure Attachment



Note. As COVID-PTSD increases, Relationship Quality increases in individuals with high levels of insecure attachment style.

As Table 11 illustrates, there was a significant interaction effect between relationship quality and insecure attachment style on IPV (B = .05, B_{SE} = .01, t = 5.74, p < .001). Simple slope analyses revealed that the effect of relationship quality on IPV was significant at high levels of insecure attachment. However, the effect was not significant at low levels of insecure attachment. There was no effect of insecure attachment on

relationship quality (B = .02, B_{SE} = .01, t = 2.10, p = .03). However, there was a significant interaction effect between PTSD and insecure attachment on relationship quality (B = .01, B_{SE} = .00, t = 9.19, p < .001). This indicates that the relationship between PTSD and relationship quality was moderated by insecure attachment. To facilitate the interpretation of this interaction effect, the effects of PTSD on relationship quality were tested by a simple main effects analysis (1 SD below the mean, at the mean, and 1 SD above the mean, respectively). See Figure 7. Simple slope tests indicated that, for individuals who had medium levels of insecure attachment, PTSD was positively and significantly associated with relationship quality (B = .04, B_{SE} = .01, t = 5.20, p < .001), as well as for individuals who had higher levels of insecure attachment (B = .09, B_{SE} = .01, t = 8.92, p < .001). However, there was no significant effect for individuals who scored low on insecure attachment (B = -.00, B_{SE} = .01, t = -.46, p = .65).

As Table 11 illustrates, COVID-related PTSD was positively associated with IPV (B = .12, B_{SE} = .03, t = 4.55, p < .001). There was a significant effect of insecure attachment on IPV (B = .17, B_{SE} = .06, t = 2.80, p = .01), and a significant interaction effect between relationship quality and insecure attachment (B = -.03, B_{SE} = .01, t = -2.14, p = .001). To facilitate the interpretation of this interaction effect, the effects of relationship quality on IPV were tested by a simple main effects analysis (1 SD below the mean, at the mean, and 1 SD above the mean, respectively). See Figure 7. Simple slope tests indicated that, for individuals who had high levels of insecure attachment, relationship quality was negatively and significantly associated with IPV perpetration (B = -.79, B_{SE} = .16, t = -4.90, p < .001), as well as for individuals who had medium levels of insecure attachment (B = -.57, B_{SE} = .12, t = -4.96, p < .001). There was a

small significant effect for individuals who scored low on insecure attachment (B = -.35, B_{SE} = .15, t = -2.39, p = .02).

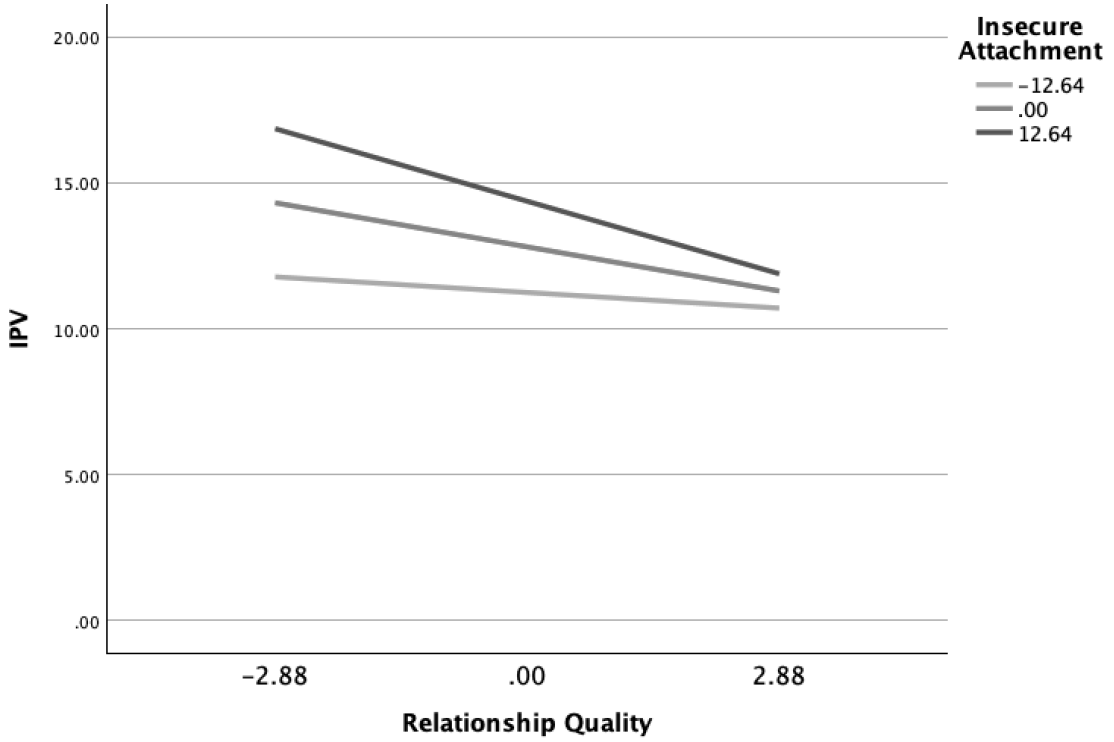
Table 11. Moderated Mediation Analysis testing the mediator Relationship Quality on the relationship between PTSD and IPV moderated by Insecure Attachment

	B	*SE*	*t*
IPV			
R^2 = .32, F (4,764) = 23.02***	-.12	.33	38.49***
constant			
PTSD	.11	.03	4.04***
Relationship Quality	-.53	.12	.10
Insecure Attachment	.12	.00	3.11**
PTSD * Insecure Attachment	-.03	.01	-31***

Note. All variables were mean centered prior to analyses.

*p < .05, **p < .01, ***p < .001.

Figure 7. Effect of PTSD on the relationship between Relationship Quality and IPV moderated by Insecure Attachment



Note. As Relationship Quality increases, IPV perpetration significantly decreases in participants of high and medium levels of insecure attachment style.

4.1.5 DISCUSSION

Imposed lockdowns due to the COVID-19 pandemic have exacerbated IPV perpetration rates world-wide. Previously, research consistently found that insecure individuals generally perpetrate more violence against intimate partners than secure individuals. A new finding from our previous study (Gottlieb & Schmitt, 2023) indicated that individuals with a secure attachment style are however more at risk of perpetrating IPV under heightened COVID-related PTSD. Provided that insecure

individuals (those with both an anxious and avoidant attachment style) did not perpetrate more violence at higher rates of COVID-related PTSD, the aim of the present study was to determine the extent to which relationship quality may play a role in buffering the effect of heightened COVID-PTSD in insecure individuals and in turn, protect them from perpetrating more violence against intimate partners.

In line with the hypothesis, the findings of the present study indicate that relationship quality mediates the relationship between COVID-PTSD and IPV. Specifically, individuals with an insecure attachment style who report high levels of COVID-PTSD also report higher levels of relationship quality which in turn is associated with lower levels of IPV perpetration. This suggests that relationship quality may be a buffer for IPV in individuals with insecure attachment. As such, it may be that for insecure individuals PTSD influences IPV via relationship quality.

There are several theoretical explanations for this. For one, attachment theory holds that individuals with an insecure attachment style, specifically those with an anxious attachment style constantly seek proximity to intimate partners. Attachment is also relevant to closeness-distance struggles. Closeness-distance (or autonomy-connection) is a core relational dilemma. It could be that partner's responsiveness and being in close proximity to that partner increases the perception of relationship quality in those with an insecure attachment style which could consequently decrease IPV perpetration. As such, relationship quality seems to be a buffer for insecurely attached individuals.

Typically, when anxious individuals encounter internal stressors, they are more likely to perceive their partners and relationships in a more negative light and tend to behave in dysfunctional, relationship damaging ways. However, higher partner commitment was shown to buffer highly anxious and avoidant individuals from acting

on their negative working models (Simpson & Rholes, 2017). Particularly, when insecure individuals experience stressful interactions with their intimate partners, they are less likely to react in "insecure" ways when their romantic partners emotionally and behaviorally regulate their attachment-related concerns. This in turn may help insecure partners experience less negative affect and behave more constructively. However, while being in close proximity is a desired outcome for an anxious partner, avoidant individuals may struggle to forgo their individual autonomy to establish connection. Consequently, conflict about closeness and distance is likely to activate the attachment system and may prove intractable if partners have different attachment goals (Pistole, 1994). To be successful, partner-buffering attempts must be carefully tailored to meet the specific attachment-relevant needs, concerns, and worries of highly avoidant and highly anxious partners. Future research could explore the potential role of partner's attachment style on stress buffering and conflict resolution.

Another explanation for why heightened COVID-PTSD may increase relationship quality in insecure individuals stems from previous research on relational conflict. Although severe conflict should threaten the couple bond and anxious individuals should feel more distress and hostility during relational conflict, and rate their relationship as more negatively (Simpson, Rholes, & Phillips, 1996), studies using diary reports of everyday interactions found that conflict often involves higher levels of partner responsiveness and disclosure and could therefore increase relationship satisfaction in insecure people (Pietromonaco & Barrett, 1997).

In addition, Overall, Girme, Lemay, and Hammond (2014) showed that in situations that create relational tension (e.g., criticism and conflict), attachment anxiety

was related to exaggerated expressions of hurt feelings and more guilt-inducing verbal and nonverbal responses. Importantly, partners of more anxious individuals reported higher levels of guilt, and more anxious individuals appraised their partner and relationship more positively when their partner felt more guilt. However, partners of anxious participants also reported more relationship dissatisfaction. These results suggest that the manipulative tactics employed by anxiously attached people in response to relational threats may reinforce short-term commitment and intimacy due to partners' efforts to reduce feelings of guilt but may in turn erode partners' long-term satisfaction with the relationship. It may be that individuals with an anxious attachment style find conflict satisfying, because their attachment needs for attention and responsiveness are met by their partners which in turn could stop conflict from escalating into violence. Consequently, anxious individuals may report higher relationship quality during heightened levels of distress and conflict.

From an evolutionary perspective, it could further be that lockdown forced partners into "close proximity", which should deactivate insecure individuals' attachment system, as there is no need to mate-guard. Provided anxious individuals tend to overperceive relationship threats such as partner defection, they are more likely to engage in negative behaviors aimed at retaining partners (Mikulincer & Shaver, 2003). Indeed, previous studies have demonstrated that mate retention behaviors are indeed associated with attachment insecurity (Barbaro, Pham, Shackelford, & Zeigler-Hill, 2016; Barbaro, Sela, Atari, Shackelford, & Zeigler-Hill, 2019). Moreover, these studies have specifically linked attachment anxiety with cost-inflicting mate retention tactics, which refers to behaviors that are specifically partner-directed (e.g., controlling, monitoring, partner derogation) and aimed to lower a partner's perceived self-esteem to

decrease their chances of obtaining an alternative partner (e.g., Buss & Shackelford, 1997; Miner, Starratt, & Shackelford, 2009).

It is however unclear why the present study found the same pattern in those with an avoidant attachment style. According to the literature, individuals with an avoidant attachment style should want their independence and would feel that a lockdown violates their independent space and could hinder their individual autonomy. In line with previous findings (Mikulincer et al., 2014) it may be that avoidant individuals act more similarly to anxious individuals under severe distress, however future studies would be necessary to explore this further.

Strengths and Limitations

This is the first study to assess the mediating role of relationship quality in PTSD and IPV perpetration during COVID-19. The findings of the present study shed light on how one's attachment style could impact perceived relationship quality and IPV perpetration. An important finding of the present study is that relationship quality increases under heightened COVID-PTSD in individuals with an anxious attachment style, and in turn, decreases the perpetration of violence against intimate partners. This can have important clinical implications. However, there are several limitations that need to be addressed.

In addition to the limitations noted in the previous chapter, one additional limitation of the present study is that individuals only reported their perception of relationship quality during the time of lockdown. Therefore, the present study does not provide information about individuals' levels of relationship quality prior to the

pandemic. As a result, it cannot be concluded that the observed increase in relationship quality is due to COVID-19. Future research is necessary to investigate the perceived relationship quality closer in time to the traumatic event.

It is also important to point out that PTSD related to COVID-19 may activate a special kind of attachment functioning and cannot be generalized to other experiences of trauma. For instance, the imposed lockdown and social distancing regulations forced couples into close proximity which could have benefitted individuals with an insecure attachment style as it allowed them to meet their attachment needs for closeness and partners' responsiveness. These attachment-related processes may be less evident in other life events or man-made traumas. More research is needed to determine whether individuals with an insecure attachment style would report greater relationship quality under heightened distress caused by other traumatic experiences.

An interesting finding of the present study was that insecure individuals reported increased relationship quality under high levels of COVID-PTSD. Future studies could investigate this further by assessing the underlying mechanisms that increase relationship quality during heightened distress in individuals with an insecure attachment style. Moreover, the present study found that relationship quality remained stable regardless of COVID-related PTSD in secure individuals and did not impact the employment of IPV in those individuals. Future studies are needed to explore other relational mechanisms which could impact IPV perpetration in secure individuals under heightened distress.

4.1.6 CONCLUSION

The COVID-19 pandemic forced couples into close-proximity which could not only impact individuals' well-being, but also their intimate relationships. Indeed, IPV rates have increased world-wide since the onset of COVID-19. Relationship quality has been previously associated with mental, physical, and sexual health outcomes during the pandemic, and poor relationship quality has been associated with increased conflict. Moreover, a previous study found that high levels of COVID-PTSD were associated with increased IPV perpetration in secure individuals. The present study assessed whether relationship quality would mediate the association between COVID- PTSD and IPV perpetration. The results of the present study revealed that insecure individuals report better relationship quality under heightened levels of COVID-PTSD and lower rates of IPV perpetration. These findings suggest that relationship quality could serve as a buffer for insecure individuals. Specifically, it may be that close proximity to intimate partners could help regulate stress in insecure individuals, which in turn could decrease IPV perpetration. Conversely, relationship quality was not found to buffer the association between COVID- PTSD and the employment of IPV in secure individuals. Future studies are needed to investigate the underlying mechanisms that promote relationship quality in insecure individuals during times of heightened distress and should further assess the role of partner's attachment in regulating distress.

Chapter 5

The right pandemic partner: An investigation of the role of partner's attachment style in IPV perpetration during COVID-19

5.1 Study 4

5.1.1 ABSTRACT

The enforced lockdown during COVID-19 posed ongoing challenges for intimate relationships. Few studies have shown that anxious individuals who are partnered with avoidant individuals experience more relationship conflict. The current research tested how individual's and their partner's attachment style predicted both relationship satisfaction and commitment during COVID-lockdown and IPV perpetration. The results indicate that individuals with anxious attachment perpetrated violence at higher rates when they were in a relationship with an avoidant partner. The present study also found that anxious individuals reported greater relationship commitment to their avoidant partner. These findings demonstrate the importance of identifying which

couples are most at risk of encountering violence in an unprecedented context such as a mandated lockdown. The study emphasizes that the effects of the COVID-19 pandemic on intimate relationships could be shaped by the attachment style of partners with whom people are confined with during the pandemic. These findings could further have important implications for clinical interventions in not only identifying couples that are more at risk of encountering violence in their relationship, but moreover help individuals leave abusive relationships.

5.1.2 INTRODUCITON

External stressors have long been linked to reduced relationship satisfaction and increased conflict in romantic relationships (e.g., Falconier et al., 2015; Karney & Bradbury, 1995 for a review). Specifically, amid the onset of COVID-19, studies revealed a varied impact on romantic relationships. In China, 31% of individuals reported decreased relationship quality during the initial months of the pandemic. Conversely, in Germany, while 20% of over 3,100 participants reported improved relationship quality, 40% experienced a decline (Schmid et al., 2021). Similarly, in the US, 34% of adults reported heightened conflict with relationship partners regarding COVID-19 quarantine measures and health concerns, which, in turn, correlated with decreased levels of affection and sexual activity (Luetke et al., 2020). However, these studies indicate mixed results for the potential impact of COVID-19 on romantic relationship functioning, with some experiencing deteriorations and others witnessing improvements. Consequently, it remains an open question whether romantic relationships can serve as sources of resilience or as risk factors during crises such as

the COVID-19 pandemic. Notably, compared to singles, people in high quality relationships have demonstrated better mental health outcomes, underscoring the potential role of intimate partnerships in mitigating the impact of external stressors (Pieh et al., 2020). This raises the question of what factors contribute to deteriorating relationship quality during global crises.

Attachment theory offers a valuable framework for understanding how individuals behave in intimate relationships, with most research focusing on how one's own attachment style influences their perception of romantic relationships. However, there is a growing body of research exploring the implications of both partners' attachment styles in these relationships.

Interdependence in close relationships

Actor-Partner Interdependence Models (APIM; Kenny et al., 2006) have revealed that, in addition to one's own attachment style, the attachment style of one's partner can significantly influence one's experiences in the relationship. Specifically, individuals with avoidant partners tend to report lower levels of relationship satisfaction and commitment compared to those with partners scoring lower on attachment avoidance (Davila et al., 1999; Fitzpatrick & Lafontaine, 2017; Karantzas et al., 2014; Rodriguez et al., 2019). Moreover, according to Bowlby (1973, 1980), individuals with anxious attachment styles have internal working models that shape their perceptions and evaluations of their partners and relationships. For example, anxious individuals are prone to perceiving daily conflict in intimate relationships as more severe and frequent than those who are more secure. Additionally, conflicts have a deeper emotional impact on anxious individuals, leading them to evaluate daily relationship events as more

significant indicators of their relationship quality. Such conflicts can also influence their perceptions of the future stability of their relationships.

Provided that early interactions with significant others shape individuals' expectations and beliefs about relationships and relationship partners (Bowlby, 1969, 1973, 1980), internal working models influence information processing in close relationships and can influence whether and how people perceive and judge partners (Collins & Allard, 2001). Therefore, attachment theory (Bowlby, 1969, 1982) can explain how interpersonal experiences are interpreted and how emotions that arise from these experiences are regulated. Anxiously attached individuals often exhibit a hyperactivated attachment system, manifesting as heightened concern about rejection, abandonment, and hypervigilance to relationship threats. In contrast, avoidantly attached individuals display a deactivated attachment system, characterized by discomfort with intimacy, a preference for self-reliance, and minimal investment in intimate relationships (Mikulincer & Shaver, 2003). Consequently, attachment dimensions predispose individuals to process information and engage in different ways with intimate partners, potentially disrupting healthy relationship processes (Collins & Allard, 2001; Collins & Feeney, 2004; Hazan & Shaver, 1994; Mikulincer & Shaver, 2003; Rodriguez et al., 2019; Rusbult et al., 2001).

For instance, anxious individuals' desire for closeness and persistent fears of rejection may escalate conflicts, while avoidant individuals' reluctance to rely on their partners may lead to distancing behaviors, both of which are linked to poorer relationship quality (Mikulincer & Shaver, 2003; Murray et al., 2001; Tucker & Anders, 1999).

Attachment Styles and Conflict

Attachment styles have been consistently associated with varying levels of relationship quality. Satisfaction, commitment, investment, and quality of alternatives are key components of the Investment Model (Rusbult, 1983) that capture relationship quality. Satisfaction reflects individuals' perceptions of their relationship's positive or negative affect and its overall gratification (Le & Agnew, 2003; Rusbult, Johnson, & Morrow, 1986). Commitment encompasses affective attachment to the partner and the motivation to maintain the relationship (Arriaga & Agnew, 2001). Commitment is also characterized as a perceived long-term obligation toward the relationship and intimate partner (Adams & Jones, 1997).

Interdependence theory posits that inter-relational dynamics affecting relationship processes and outcomes can be context dependent (Kelley et al. 2003). Specifically, individuals who depend more on their partners for rewarding experiences are expected to be more vigilant in monitoring signs of love and commitment. However, this dependence can place one partner in a low-power position unless mutual dependence exists, promoting cooperation during conflicts.

Individual differences in attachment styles can influence the development of high dependency on an intimate partner and relationship. Recent research suggests that the combination of attachment styles in couples may interact synergistically, affecting commitment. For example, couples in which both partners have an anxious attachment style may provide mutual reassurance and fulfilment of their attachment need for

closeness, resulting in higher relationship quality (Hadden et al., 2016). Similarly, couples in which both partners have an avoidant attachment style may report greater competence need fulfillment, enhancing their relationship quality (Hadden et al., 2016). According to Mikulincer and Shaver (2007), such findings suggest that the desires of two individuals with the same attachment style are relatively similar provided these couples have matching internal working models about intimate partners and relationships. However, because more anxiously attached people tend to be more sensitive and reactive to conflicts (Fraley and Shaver, 2000), experiencing conflict in their relationship can cause anxious individuals to feel less satisfied with their relationships, and be less optimistic about the future stability of their relationships. Moreover, anxious individuals tend to presume that their partner is less satisfied with the relationships on days they experience higher conflict.

A dyadic attachment perspective on IPV

Only a few studies have included both partners to assess the links between attachment styles and IPV. For instance, in a sample of male same-sex couples Landolt and Dutton (1997) found that anxious attachment in both partners was linked with abuse by a given partner. Moreover, attachment patterns were predictive of both IPV victimization and perpetration. In addition, Roberts and Noller (1998) demonstrated that high attachment anxiety was associated with IPV in both men and women. Importantly, the link between anxiety over abandonment and use of violence was only significant if an anxiously attached person was partnered with someone high in attachment avoidance. This suggests that anxious individuals may actively seek closeness in their relationships and may feel rejected by avoidant partners whose tendency is to withdraw from an anxious partner's clingy and needy behavior. Consequently, when their need

for closeness can't be met by an avoidant partner, anxious individuals may resort to violence to force their partners to get closer and pay attention to them. However, in these situations avoidant partners are more likely to further distance themselves, resulting in a self-perpetuating positive feedback loop. Indeed, IPV may be employed as a "pursuing" strategy (Bartholomew & Allison, 2006).

Pursuing is a strategy to get closer to an intimate partner, whereas distancing is a strategy to decrease closeness to intimate partners. It may therefore be that violence results from a failure to bring a partner closer or push a partner away. Moreover, violence due to pursuing/distancing strategies were related to specific attachment styles. For example, pursuing was linked with anxious attachment, whereas distancing was linked with avoidant attachment. However, these relationship dynamics can only be understood in light of the interplay between romantic partners' attachment styles. Specifically, the pursuing/distancing interpersonal pattern tends to occure in relationships in which partners have incompatible attachment styles and therefore differ in their need for closeness or distancing (Bartholomew & Allison, 2006). Indeed, studies have previously demonstrated this pattern when anxious individuals were partnered with avoidant people (Babcock et al., 2000; Roberts & Noller, 1998).

Anxious partners may resort to violence when their nonviolent pursuit strategies fail to draw attention to themselves and get closer to their partner. Consequently, avoidant partners may become overwhelmed by their anxious partner's attempts of pursuit which could escalate in violence if their nonviolent distancing strategies fail. In such a scenario, avoidant partners may push their partners away to gain distance. Consequently, both anxious and avoidant individuals may employ

violence against intimate partners when their attachment needs (i.e., generating closeness/distancing) are not met.

These studies suggest that the interpersonal needs related to certain attachment styles may give rise to violence when these needs are not satisfied by intimate partners and other nonviolent attempts fail. The view of IPV as a pursuit behavior is in line with the attachment-theory-based concept of IPV whereby the employment of violence against intimate partners is argued to be a dysfunctional form of protest behavior.

Additionally, anxious individuals may report poorer relationship outcomes when partnered with someone who is avoidant as their desires for closeness tend to differ (Mikulincer & Shaver, 2016). Indeed, because an avoidant partner can seem unresponsive and distant (Shallcross et al., 2011), it may exacerbate attachment worries and fears in individuals with anxious attachment style and could ultimately undermine relationship quality (Kirkpatrick and Davis, 1994). For instance, wives with an anxious attachment style who were partnered with an avoidant husband reported lower relationship satisfaction (Feeney, 1994). Additionally, avoidant people who tend to avoid intimacy may get overwhelmed by advances for intimacy from their anxious partners (Collins & Read, 1990; Mikulincer & Shaver, 2016; Tan et al., 2012). However, because these mismatched couples tend to be stable (Kirkpatrick and Davis, 1994), it may be that internal working models bind partners regardless of relationship satisfaction and in turn may enhance commitment in these relationships.

Attachment Anxiety and Commitment

Commitment, a psychological attachment to and intent to sustain a long-term relationship, stems from a dependency on a relationship or cognitive interdependence

(Agnew et al., 1998; Arriaga & Agnew, 2001; Rusbult, 1983). Commitment plays a significant role in predicting relationship persistence, even in the presence of low relationship satisfaction or abuse (Drigotas & Rusbult, 1992; Le & Agnew, 2003; Rusbult, 1983; Rusbult & Martz, 1995). Anxious attachment is associated with a strong desire for romantic commitment (Feeney and Noller, 1990). Anxious individuals may perceive themselves as unworthy of fulfilling relationships and as being less satisfied with their pair-bonds, potentially driving their high commitment levels (Davila & Bradbury, 2001; Mikulincer & Shaver, 2007)

Longitudinal studies have shown that attachment anxiety is linked to greater relationship persistence, even in cases of poor relationship quality (Davila & Bradbury, 2001; Kirkpatrick & Davis, 1994; Kirkpatrick & Hazan, 1994). This suggests that individuals with high attachment anxiety tend to remain committed to their romantic relationships, even when their intimate partners fail to meet their attachment needs.

The present research

The present study expands on existing research by assessing the role of partner attachment styles and their effects on individuals' commitment to a relationship. Additionally, the present study aims to investigate how attachment styles interact in the evaluation of relationship commitment and their relationship to IPV. Specifically, the present study sought to explore how individuals' attachment styles influence relationship outcomes and whether these associations are mediated by their partner's attachment anxiety and avoidance.

H1: This study predicts that individual attachment anxiety will be associated with low relationship satisfaction and high commitment, mediating the relationship between anxious attachment and IPV perpetration.

H2: Building on prior findings suggesting that highly anxiously attached individuals tend to report greater commitment to their relationships and may resort to IPV as a violent measure to prevent a partner from abandoning the relationship, this study further predicts that commitment will mediate the relationship between individuals' anxious attachment and IPV perpetration when paired with avoidant partners.

5.1.3 METHOD

Participants

Data were collected from over 614 participants via MTurk. of participants. Most participants 62.9% were men (*N* = 386), 36% were women (*N* = 221), and .7% were non-binary (*N* = 4). Most participants were married (*N* = 360, 58.6%), 7.8% of participants were cohabitating with their romantic partner (*N* = 48), and 16.8% of participants were dating one person exclusively (*N* = 203), and 16.6% of participants were single (*N* = 102). Most participants indicated being heterosexual (*N* = 544, 88.6%), 5.7% of participants indicated being homosexual (*N* = 35), and 5.4% of participants indicated "other" as their sexual orientation (*N* = 33). 78% of participants were cohabitating (*N* = 479). In addition, 84.5% of participants were staying/working from home at the time of data collection (*N* = 517) and that their partner was also staying/working from home (*N* = 453, 73.8%). 31.3% of participants reported that they

had COVID-19 (*N* = 192) with symptoms ranging from mild (40.7%), severe (13%) and hospitalization (2.8%), and 31.9% of participants reported that their partner had COVID-19 (*N* = 196) with symptoms ranging from mild (35.3%), severe (15%) and hospitalization (2.9%). Moreover, 64% of participants indicated having children (*N* = 393) and 30.9% of participants reported that their income had been negatively impacted since the pandemic, whereas 43.3% indicated that their income has improved since the pandemic. The present study focuses on a subsample of 513 participants who indicated being in a committed romantic relationship (i.e., dating one partner exclusively, cohabitating, married).

All study procedures outlined below were approved by the university at which the research was conducted.

Procedure

Prospective participants viewed an advertisement for the study for a participation compensation fee of $0.50 on MTurk's job listings. It has been suggested that participants recruited from MTurk tend to be more demographically diverse than those from standard internet samples and college samples (Buhrmester, Kwang, & Gosling, 2011). Moreover, there was no association between compensation rates and data quality and data collected on MTurk tends to be equally reliable as those retrieved via traditional methods. (Gosling et al., 2004). Participants who were willing and eligible to participate (i.e., at least 18 years of age) were provided a link to an informed consent statement about the study. Those who agreed to participate could access and complete the survey, and those who did not agree to participate were exited from the study.

Materials

Relationship satisfaction. This measure captures participants' perceptions of their own relationships, as outlined by Rusbult et al. in 1998. Sample items included statements like, "I feel satisfied with our relationship'', ''My relationship is close to ideal'', and ''Our relationship makes me very happy.'' Participants were instructed to express their feelings toward each item by rating them on a scale from 0-8, where 0 signified ''do not agree at all,'' and 8 indicated ''agree completely.'' The reliability of this measure was assessed using Cronbach's alpha, yielding a coefficient of 92, indicating high internal consistency.

Commitment was measured to assesses participants' perception of the enduring nature of their relationship, as outlined by Rusbult et al. (1998). Exemplary statements in this measure included items such as, ''I want our relationship to last for a very long time'', ''I want our relationship to last forever'', and ''I am committed to maintaining my relationship with my partner.'' Participants were instructed to convey their sentiments for each item by rating them on a scale ranging from 0 to 8, where 0 represented ''do not agree at all,'' and 8 indicated ''agree completely.'' The measure demonstrated strong internal consistency, with a Cronbach's alpha coefficient of 92.

Intimate partner violence perpetration was measured using *The Revised Conflict Tactics Scales* (CTS2; Straus, Hamby, Boney-McCoy, Sugaran, 1996). The CTS2 contains five subscales: *psychological aggression*, *physical assault*, *sexual coercion*, *negotiation*, and *sustained injury*. Considering the focus of the present research is on perpetration (and not victimization) of IPV, the subsequent analyses focused on the *physical* (e.g., "Slammed my partner against a wall") and *sexual* (e.g., "Used force to make my partner have sex") perpetration domains. Items were rated on a 6-point scale ranging from 1 (once since the lockdown) to 6 (more than 20 times since the lockdown).

To assess romantic attachment, participants completed the *12-item Experiences in Close Relationships Inventory-Short* (ECR-S; Wei, Russell, Mallinckrodt, & Vogel., 2007). Sample questions include "It helps to turn to my romantic partner in times of need" (anxiety subscale) and "I want to get close to my partner, but I keep pulling back" (avoidance subscale). Items were rated using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). An overall score was computed for the 6 items each anxious and avoidant subscales. The original article found good internal reliability for anxious attachment (α = .78 to .86) and avoidant attachment (α = .78 to .88). The current study similarly found adequate internal reliability for anxious attachment (α = .72) and avoidant attachment (α = .87).

To assess Partner's romantic attachment, participants completed the *12-item Experiences in Close Relationships Inventory-Short* (ECR-S; Wei, Russell, Mallinckrodt, & Vogel., 2007). Instead of "I" statements, the scale was adapted to describe the partner (e.g., "My partner turns to me in times of need" (anxiety subscale), and "My partner wants to get close to me, but keeps pulling back" (avoidance subscale). Items were rated using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). An overall score was computed for the 6 items each anxious and avoidant subscales.

5.1.4 RESULTS

The average score for IPV perpetration of the participants in this study was M = 12.41(SD = 7.67). IPV was significantly positively associated with commitment (r = .314, $p < .001$) and negatively associated with satisfaction (r = -.106, $p < .001$). There were also significant positive associations between participants' own anxious

attachment (r = .635, p < .001) and partners' avoidant attachment (r = .590, p < .001). See Table 11.

Table 11. Bivariate Correlations and Descriptive Statistics for Study Variables

All Participants

	1	2	3	4	5	6	7
IPV	-						
Avoidant Own	.56***	-					
AnxiousOwn	.62***	.75***	-				
Avoidant Partner	.60***	.77***	.71***	-			
Anxious Partner	.58***	.73***	.71***	.71***	-		
Satisfaction	-.11**	.14***	.-12**	.12**	-.08*	-	
Commitment	.31***	.42***	.35***	.41***	.29***	.57***	-
n	501	501	501	501	501	501	501
Mean	12.13	27.50	25.67	27.17	25.80	27.49	14.12
SD	7.77	5.78	7.55	5.98	7.57	5.90	2.69

Note. All variables were mean centered prior to analyses.

* p < .05, **p < .01, ***p < .001.

Multiple regression analysis was performed to assess the impact of several factors on the likelihood that participants would report IPV perpetration. The model contained 6 independent variables (own avoidant attachment, own anxious attachment, partner's avoidant attachment, partner's anxious attachment, satisfaction, and commitment). The full model containing all predictors was statistically significant. The model as a whole explained 49.1% of the variance in IPV perpetration. As shown in Table 12, only four of the independent variables made a unique statistically significant (p < .001) contribution to the model (own anxious attachment, partner's avoidant attachment, satisfaction, and commitment). The strongest predictor of reporting IPV perpetration was commitment (B = .67).

Table 12. Multiple Regression Analysis for Own Attachment Style, Partner's Attachment Style, Satisfaction and Commitment predicting IPV

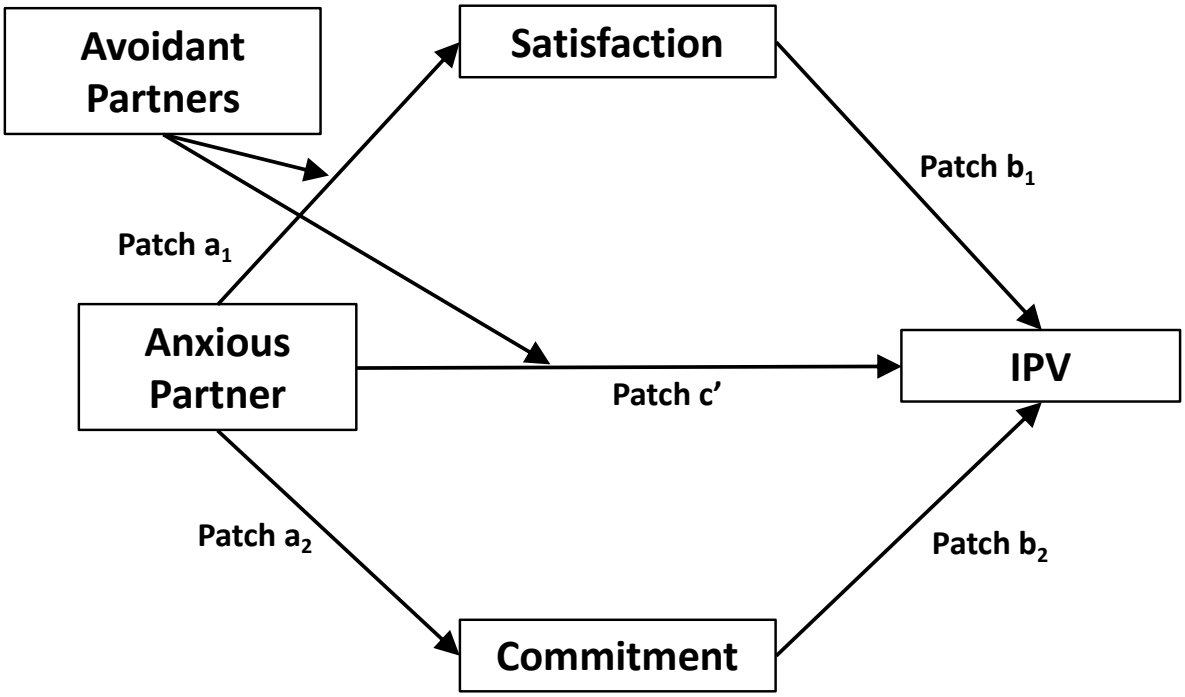
.

			95% CI				
Variable	*B*	SE B	LL	UL	Beta	t	p
Avoidant Own	.14	.08	-.01	.29	.10	1.78	.075
Anxious Own	.20	.06	.09	.32	.20	3.58	.000
Avoidant Partner	.30	.07	.16	.44	.23	4.17	.000
Anxious Partner	.12	.05	.01	.22	.11	2.21	.028
Satisfaction	-.34	.06	-.46	-.23	-.26	-5.99	.000
Commitment	.67	.13	.43	.92	.24	5.38	.000

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

A moderated mediation analysis was performed to assess whether commitment and satisfaction mediated the relationship between own anxious attachment and IPV and if this relationship was moderated by Partner's avoidant attachment (see Figure 8).

Figure 8. The Moderated mediation model applied in this study



The analysis showed that the level of own anxious attachment had a significant impact on satisfaction as well as on commitment. Satisfaction had a negative effect on IPV perpetration, and commitment had a positive effect on IPV perpetration (all p values <0.01). The level of own anxious attachment was also significantly correlated with IPV perpetration in both models ($p < 0.01$). These results indicate that the relationship between own anxious attachment and IPV perpetration was partially mediated by satisfaction and commitment respectively. See Table 13.

Table 13. Mediation of Satisfaction and Commitment on the relationship between Anxious Attachment and IPV perpetration moderated by Partner Avoidant Attachment

	B	*SE*	*t*

Satisfaction			
$R^2 = .16$, F (3, 509) = 32.34***			
constant	26.59	.29	90.68***
Anxious Own	-.31	.05	-6.86***
Avoidant Partner	.32	.06	5.49***
Anxious Own * Avoidant Partner	-.01	.00	-4.08***
Commitment			
$R^2 = .22$, F (3,509) = 48.37***			
constant	13.73	.13	105.64***
Anxious Own	.07	.02	2.32
Avoidant Partner	.10	.03	.3.87***
Anxious Own * Avoidant Partner	.01	.00	6.22***

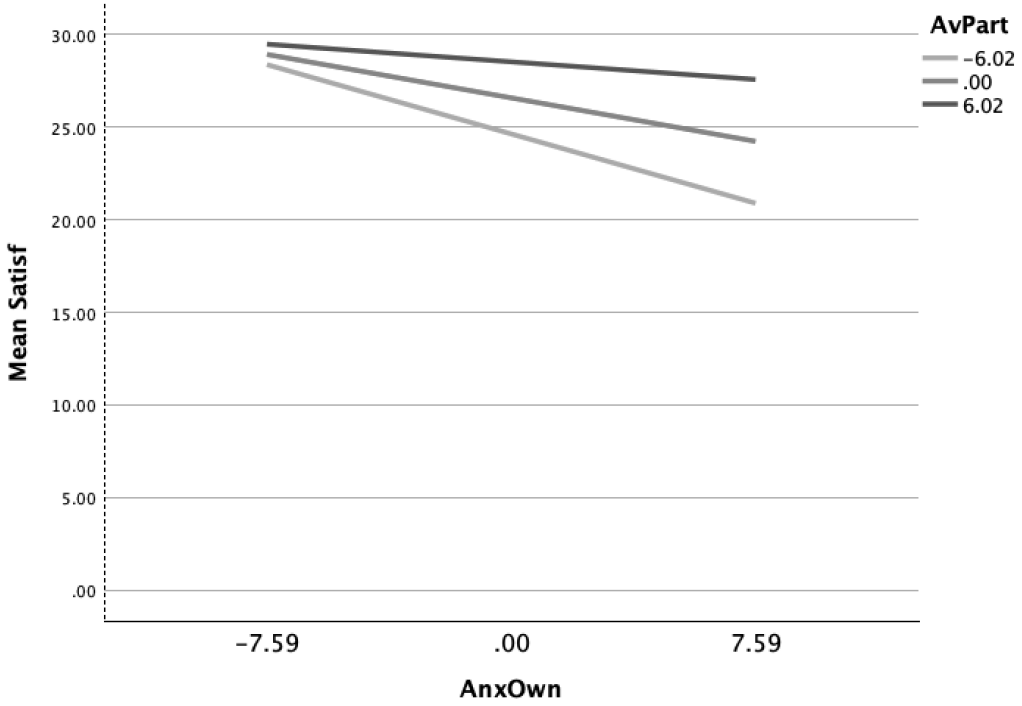
Note. All variables mean centered prior to analyses

*$p < .05$, **$p < .01$, ***$p < .001$.

To evaluate the conditional indirect effects of the level of own anxious attachment on IPV perpetration via satisfaction as a function of Partner's avoidant attachment, the bootstrap method was used for analysis. Indirect effects at three levels of Partner's avoidant attachment (1 SD above the mean, at the mean, and 1 SD below the mean) were examined by using the 95% CIs of the bootstrap method. The conditional indirect effect on IPV perpetration arose from own anxious attachment via satisfaction. This effect changed according to the range of Partner's avoidant attachment and was significant at the 1 SD below and at the mean of the Partner's avoidant attachment dimension. Lower levels of satisfaction were significantly related to greater IPV perpetration when anxious individuals were coupled with relatively secure partners

(low avoidant attachment (B = -.49, B_{SE} = .05, t = -9.29, p < .001) and medium levels of avoidant attachment (B = -.31, B_{SE} = .05, t = -6.86, p < .001). There was no conditional indirect effect of Own anxious attachment and IPV perpetration via satisfaction for those with partners who have an avoidant attachment style. Therefore, at low levels of Partner's avoidant attachment and high levels of Own anxious attachment, relationship satisfaction decreases (see Figure 9).

Figure 9. Moderating effect of Partner Avoidant Attachment on the relationship between Own Anxious Attachment and Relationship Satisfaction

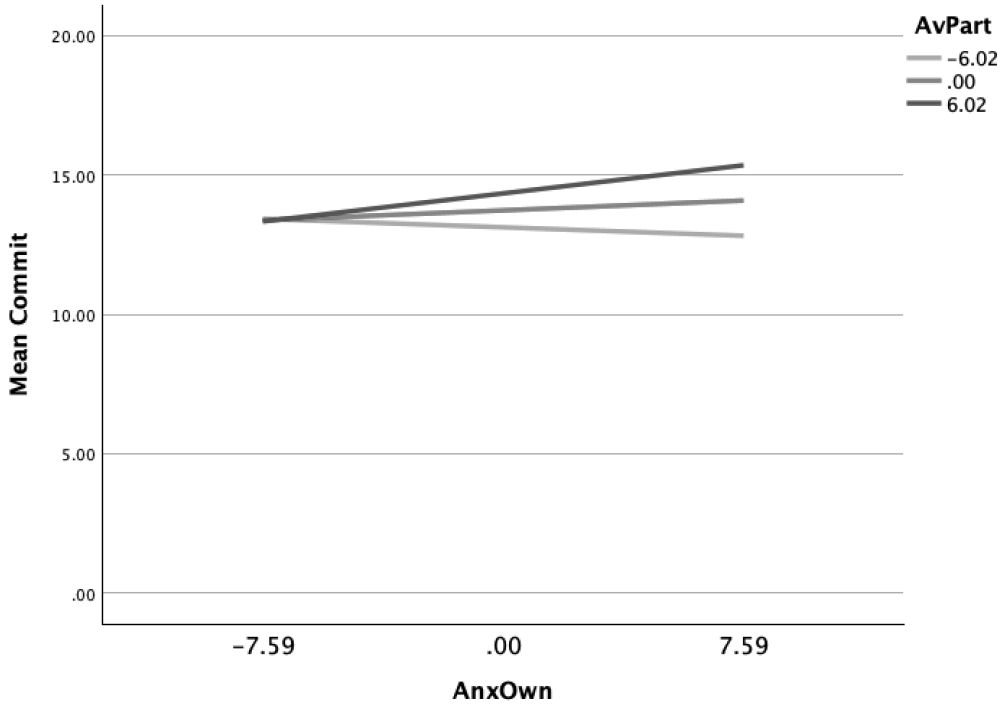


Note. At low levels of Partner's avoidant attachment and high levels of Own anxious attachment, relationship satisfaction decreases.

To evaluate the conditional indirect effects of the level of own anxious attachment on IPV perpetration via commitment as a function of Partner's avoidant attachment, the bootstrap method was used for analysis. Indirect effects at three levels of Partner's avoidant attachment (1 SD above the mean, at the mean, and 1 SD below the mean) were examined by using the 95% CIs of the bootstrap method. The conditional indirect effect on IPV perpetration arose from own anxious attachment via commitment and changed according to the range of Partner's avoidant attachment. The indirect effect was significant at the 1 SD above the mean of the Partner's avoidant

attachment dimension. This indicates that the higher the levels of individuals' anxious attachment, the more likely they are to employ IPV against intimate partners. Specifically, individuals with partners who have an avoidant attachment style are more committed to their intimate partner and therefore more at risk of resorting to IPV than those who have relatively secure partners. The final moderated mediation model is displayed in Figure 10. Higher levels of commitment in anxious individuals were associated with greater IPV perpetration at high levels of Partner's avoidant attachment, (B = .38, B_{SE} = .06, t = 6.83, p < .001). The overall moderated mediation model was supported with the index of moderated mediation = .0042 (95% CI = .0009, .0084). As zero is not within the CI this indicates a significant moderating effect of cue condition on the indirect effect via Partner's avoidant attachment (Hayes, 2015).

Figure 10. *Moderating effect of Partner Avoidant Attachment on the relationship between Own Anxious Attachment and Relationship Commitment*

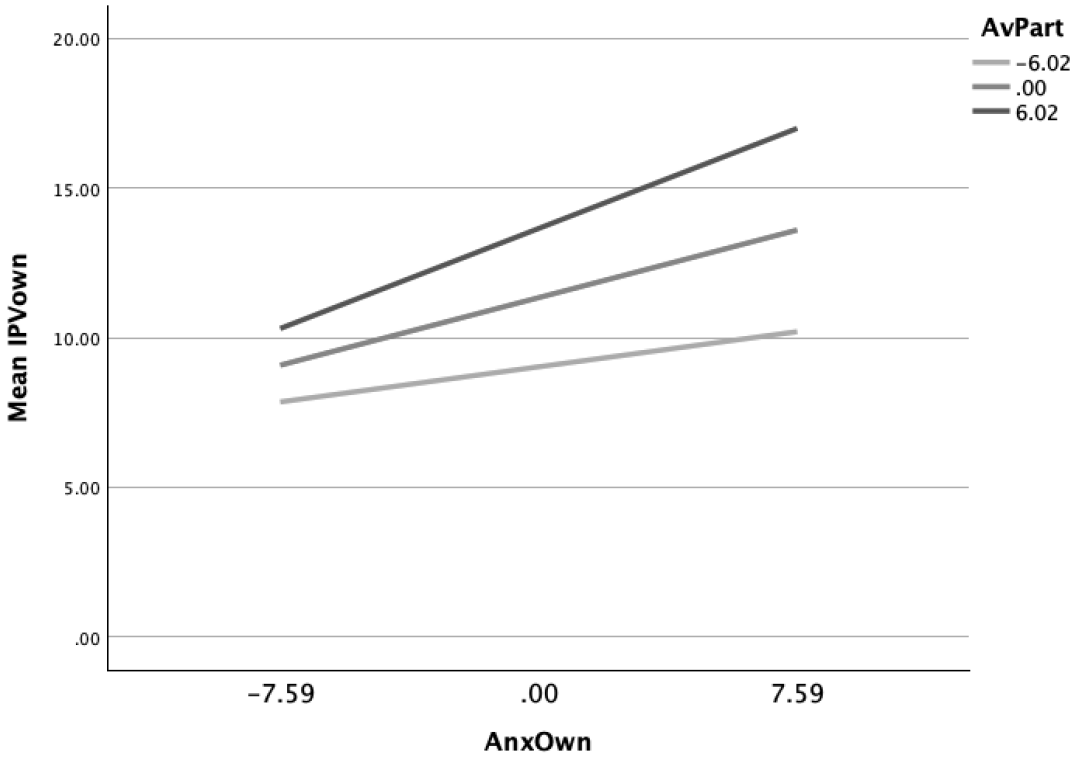


Note. As Partner's levels of avoidant attachment increases, commitment increases in individuals with high levels of anxious attachment.

A significant direct effect was found for Own anxious attachment and IPV perpetration after controlling for satisfaction and commitment (B = .30, B_{SE} = 05, t = 5.81, p < .001) indicating that additional pathways are implicated in the association between Own anxious attachment and IPV perpetration. Specifically at the high level (mean +1SD) of Partner's avoidant attachment, the main effect of Own anxious attachment was significant (B = .44, B_{SE} = 06, t = 7.06, p < .001) and at the mean (B = .30, B_{SE} = 05, t = 5.81, p < .001), whereas at low levels (mean - 1SD) of Partner's avoidant attachment, there was no main effect. Therefore, at high levels of

Partner's avoidant attachment and high levels of Own anxious attachment, IPV perpetration increases (see Figure 11).

Figure 11. Moderating effect of Partner Avoidant Attachment on the relationship between Own Anxious Attachment and IPV perpetration



Note. As Partner's avoidant attachment increases, IPV perpetration increases in individuals with an anxious attachment style.

5.1.5 DISCUSSION

The current study investigated the effect of partners' attachment styles on individuals' relationship evaluations of satisfaction and commitment. The primary aim was to explore the associations between dyadic combinations of attachment styles and relationship evaluations, ultimately shedding light on their relevance to IPV. It was hypothesized that attachment anxiety would be related to lower levels of relationship quality evaluations (satisfaction and commitment). It was further hypothesized that a partner's attachment style would moderate these associations. Specifically, the present study predicted that an individual's attachment anxiety would be associated with negative relationship outcomes (satisfaction and commitment) when coupled with an avoidant partner, and that these outcomes would further mediate the association between individuals' attachment anxiety and IPV perpetration.

As hypothesized, the present findings confirm the direct link between individuals' own attachment anxiety style and IPV perpetration, consistent with prior research (Gottlieb & Schmitt, 2023). Additionally, the results reveal a significant indirect effect: relationship satisfaction and commitment mediate the relationship between attachment anxiety and IPV perpetration. Specifically, higher levels of relationship satisfaction are associated with lower levels of IPV perpetration. This aligns with the concept that greater relationship satisfaction may serve as a protective factor against IPV in individuals with attachment anxiety, as also found in Study 3 (Chapter 4).

However, contrary to what was expected, individuals with anxious attachment reported decreased relationship satisfaction only when paired with relatively secure partners. This intriguing result suggests that avoidant partners may somehow fulfill the attachment related expectations of anxious individuals, albeit in a negative way. One

explanation for this may be that avoidant partners meet anxious individuals' expectations for rejection and abandonment, and therefore elicit familiar feelings despite being negative, and provoke attachment needs that a secure partner may not be able to satisfy. To gain a deeper understanding of this phenomenon, further investigations are needed.

Furthermore, the present study indicates that anxious individuals partnered with avoidant individuals reported higher levels of commitment, supporting Hypothesis 2. This suggests that heightened commitment levels among anxious individuals in such partnerships may contribute to IPV perpetration. Provided that relationship satisfaction was higher when anxious individuals were in relationships with avoidant partners, it may be that the link between romantic attachment and commitment is particularly relevant when shifted to interpersonal behaviors. For instance, for individuals to feel safe in their romantic relationship, expressions of commitment must be mutual. Therefore, commitment on its own cannot secure romantic attachment unless it is signalled by each partner. As such, strong commitment of an anxious partner but not of the avoidant partner may indicate asymmetry in commitment. This discrepancy in commitment levels between partners may signify an imbalance in power dynamics within the relationship, potentially triggering violent behaviors by the more committed anxious partner.

Viewing IPV through the lens of attachment theory provides valuable insights into the motivations behind such behaviors. IPV can be seen as an attempt to establish or maintain a level of personal security within the romantic relationship, particularly when individuals perceive a threat to or disruption of the attachment (Pearson, 2006). Individuals with high attachment anxiety may respond with proximity-seeking behaviors, while those with high attachment avoidance may seek distance (Bowlby,

1984). Consequently, the interplay of these attachment styles may lead to conflicting desires for closeness and distance, fostering problematic communication patterns and ultimately, violence (Beck et al., 2013; Shallcross et al., 2011). The present findings underscore the heightened risk of IPV perpetration in couples characterized by anxious-avoidant attachment pairings, aligning with prior research indicating that such couples are more vulnerable to IPV.

A significant insight of the present study is that the strength of an attachment bond may not depend on the overall quality of the relationship (Bowlby, 1969; Dutton & Painter, 1993). Anxious individuals may exhibit high levels of commitment regardless of relationship quality, possibly due to emotional dependence or feelings of unworthiness. Provided that anxious individuals tend to believe they are unworthy of fulfilling relationships, they should be relatively insensitive to the degree to which their intimate partner fulfils their needs. This suggests that individuals with anxious attachment may choose to remain in abusive relationships, emphasizing the need for tailored interventions addressing their specific attachment-related concerns.

Strengths and Limitations

The present study is the first to investigate the role of partner's attachment style in predicting IPV perpetration during COVID-19. This research further adds to the literature on the interplay of intimate partners' attachments style and intimate relationship outcomes. The present findings provide support for the notion that couples consisting of one anxious and one avoidant partner are more at risk of IPV perpetration. The strengths of the present study include its relatively large sample as well as the

timing of data collection, which allowed for exploration of how COVID-lockdowns affected couples.

Importantly, the present findings need to be cautiously interpreted with respect to their limitations. For instance, our focus on IPV as a form of attachment behavior may be too narrow. Not only may attachment needs directly drive IPV, but attachment could also indirectly impact the development and maintenance of abusive relationships. For example, the relationship attribution and expectations linked with attachment insecurity could explain why some individuals may be willing to establish and remain in dysfunctional relationships. Specifically, due to their high emotional dependency, anxious individuals may be especially prone to idealize intimate partners (Bartholomew & Horowitz, 1991) and therefore maintain problematic intimate relationships (Alonso-Arbiol, Shaver, & Yarnoz, 2002). Further, because anxious individuals tend to negatively appraise partners' behaviors and may interpret conflict as an indication of engagement and intimacy, they may be more likely to experience conflict and abuse (Collins, 1996; Pietromonaco & Feldman Barrett, 1997). These processes may further hinder the ability of intimate partners to navigate the challenges of the pandemic. Attachment concepts may therefore be helpful in understanding circumstances in which IPV is not directly serving attachment needs. For instance, lack of empathy and hostile attributional styles in anxious individuals may promote retaliatory or vengeful violent behaviors towards intimate partners (Mikulincer, 1988; Mikulincer & Shaver, 2005). Future research is essential to investigate the specific mediators between attachment goals and IPV, as well as the attributional processes and communication patterns of both partners that could trigger IPV.

Although the present findings may support previous evidence that anxious individuals may be less inclined to behave in line with their insecure working models and resort to violence when they are more satisfied in their relationships and may be less likely to react in insecure ways when their intimate partner buffers their attachment-related concerns (Overall, Simpson, & Struthers, 2013; Simpson & Overall, 2014; Tran & Simpson, 2009), partner buffering attempts can only be successful if they are tailored to meet the insecure partner's specific attachment needs. Therefore, future research could investigate the potential clinical implications of different forms of partner buffering in intimate relationships.

Another avenue for exploration involves assessing the impact of caregiving dynamics on the development of abusive relationships (e.g., Collins et al., 2004). For example, it has been suggested that partners in abusive relationships tend to display global deficits in caregiving as well as support-seeking. Consequently, compulsive caregiving by one partner and deficits in caregiving by another may contribute to the dynamics of abusive relationships.

5.1.6 CONCLUSION

The present study aimed to assess the role of both intimate partners' attachment styles in the perpetration of IPV, further shedding light on the increased risk of IPV during the COVID-19 pandemic, particularly in couples consisting of one anxious and one avoidant partner. These findings have significant implications for clinical interventions, which should focus on helping such couples meet their attachment needs while preventing the perpetration of violence. Specifically, clinical interventions should prioritize assisting anxious individuals in leaving unfulfilling and dysfunctional relationships to avoid resorting to retaliatory violent behaviors against their partners.

Chapter 6

Conclusion

This thesis investigated the intricate dynamics between attachment styles and IPV perpetration, particularly within the unprecedented context of the COVID-19 pandemic. A substantial body of empirical evidence has consistently demonstrated that insecure attachment styles, encompassing both anxious and avoidant dimensions, function as robust predictors of IPV perpetration (Finkel & Slotter, 2006), a pervasive global issue. IPV perpetration in romantic relationships is common with rates ranging from 10% to 20% in nationally representative surveys (e.g., Straus & Gelles, 1990), and 25% to 57% in studies of dating, cohabiting, engaged, and married couples (O'Leary et al., 1989; Schumacher & Leonard, 2005). Although research consistently finds that both men and women are equally likely to engage in IPV, scholars have debated sex differences in IPV, with some arguing that IPV is mostly perpetrated by men (Fine, 2017; Hallam et al., 2018; Stewart- Williams & Thomas, 2013). However, evidence for male perpetrated IPV comes from studies that have used samples that consisted only of male participants. Conversely, there is a substantial body of evidence from studies that used a gender-neutral approach to IPV that demonstrate that IPV transcends gender boundaries, (Barling & Rosenbaum, 1986; Cano & Vivian, 2003).

Study 1 is a cross-cultural exploration to examine whether specific attachment styles are associated with IPV perpetration across cultures and whether there are sex differences in the employment of IPV perpetration. The results showed that universally, both men and women with insecure attachment styles (anxious and avoidant) were more likely to employ IPV against intimate partners at equally high rates compared to individuals with a secure attachment style. The implications of this study are two-fold: 1) when approached through a gender-neutral lens, IPV manifests equally across genders, 2) individuals with insecure attachment style are more prone to resort to violence during relational conflicts. This highlights the critical importance of approaching IPV without gender bias, a paradigm shift with far-reaching implications for the reevaluation of IPV research and the formulation of inclusive interventions. The findings further further underscore the universal significance of insecure attachment style as a potent predictive factor for IPV perpetration, transcending geographical and cultural variances.

One important question in personality research is why certain people are more successful at dealing with life problems, whereas others succumb to these stressful circumstances. Bowlby's (1973) attachment theory has provided a successful framework in addressing this question and attachment style has been shown to be an individual difference factor that contributes to how well people cope and adjust to stress (Mikulincer & Florian, 1998). Chronic and prolonged stress has been previously shown to affect how well couples cope with and react to acute stressors and life events (Karney, Story, & Bradbury, 2005). Additionally, there is evidence suggesting that life stressors are associated with physical aggression for both men and women (Barling & Rosenbaum, 1986; Cano & Vivian, 2003). For instance, a study of newlyweds (Frye and Karney, 2006) assessed the role of chronic stress in IPV and demonstrated that under

higher levels of chronic stress, both husbands and wives were more likely to employ IPV. Importantly, in the context of the recent COVID-19 pandemic, previous research suggests that IPV rates tend to increase during humanitarian crises (Chandan et al., 2020; Roesch, Amin, Gupta, & Garcia-Moreno, 2020; Stark & Ager, 2011; World Health Organization, 2020). Indeed, since the onset of COVID-19 there has been an increase of levels of anxiety and depression, as well IPV. The unforeseen emergence of the COVID-19 pandemic during the course of this research added an invaluable dimension, offering a real-world experiment to examine the interplay between stress, attachment styles, and IPV.

Study 2 investigated the role of attachment styles in IPV perpetration during COVID-19, a major stressful life event. Specifically, the study examined whether heightened COVID-related distress in the form of PTSD and depression would be linked with IPV perpetration and whether attachment style moderated those relationships. The study found a link between heightened COVID-related PTSD and IPV perpetration, particularly within individuals demonstrating relatively secure attachment styles. Whereas individuals with both anxious and avoidant attachment styles were found to perpetrate IPV at consistently high levels regardless of COVID-related PTSD.

The study further found that higher levels of COVID-related depressive symptoms were linked with heightened IPV perpetration in insecure individuals (both anxious and avoidant attachment style). These findings provide support for previous research indicating that depressive symptoms due to COVID-19 may aggravate hyperactivating strategies and deactivating strategies may collapse under heightened distress which may place them at an increased risk of developing depressive symptoms

(Mikulincer & Shaver, 2012; Mikulincer et al., 2000). Under heightened levels of COVID-related depressive symptoms, those with an insecure attachment style may fail to seek the support and safety from intimate partners and in their desperate state may resort to maladaptive protest behaviors which could escalate in IPV perpetration (e.g., "anger of despair," Bowlby, 1973).

These findings may provide support for the notion that secure individuals are better at seeking support and safety from intimate partners, at least within the context of depressive reactions to stress. An evolutionary perspective of psychopathologies, whereby PTSD and depressive symptoms should function as independent defense strategies in response to adversity, may further explain this finding. Whereas PTSD induces action, often preceding an adversity, and is associated with increased aggression or IPV generally, and among those who are securely attached when under extreme stress (e.g., Orth & Wieland, 2006; Taft et al., 2011), depression induces a lack of action among the secure (Brown et al., 1995) precisely when it would otherwise be too energetically expensive or risky to aggress (Nesse, 2002; Nettle & Bateson, 2012). From this perspective, PTSD may be a trigger that activates IPV perpetration (among those who are secure and not normally high in IPV), whereas depression may decrease aggressive responses in times of conflict and individuals with a relatively secure attachment style may resort to more adaptive strategies to gain help and support from partners (Hagen, 1999, 2002; Hagen & Thomson, 2004; Shaver et al., 2001; Sheeber et al., 2001; Watson & Andrews, 2002). Future research is needed to investigate this notion further with respect to the differing interactions of attachment security with PTSD and depression in predicting IPV perpetration.

From an evolutionary perspective, stress activates negative affective responses and processes such as the fight-or-flight response, which could disrupt behavioral cognition and control (Rutledge & Linden, 1998) and in turn, elicit or inhibit aggressive behavior (Berkowitz, 1990, Tooby & Cosmides, 2008, Nesse, 1999). Consequently, PTSD may function to trigger aggression when individuals experience threat, while depression may function to shut down aggression when it would be otherwise too costly. From this perspective, it seems plausible that access to secure internal working models would be hindered in times of stress. An understanding of attachment styles and their interaction with stress is therefore paramount.

Chronic stress has been revealed as a potential eroder of secure attachment functioning (Mikulincer et al., 2014), thereby potentially undermining relationship quality (Story & Repetti, 2006). In the subsequent investigation, Study 3 assessed the role of relationship quality as a potential buffer against IPV among individuals with insecure attachment styles, notably those with heightened COVID-related PTSD. The findings reveal that individuals with insecure attachment styles (anxious and avoidant) with heightened COVID-related PTSD, reported higher levels of relationship quality. This suggests that relationship quality buffers against IPV during stressful life events but only in individuals with insecure attachment.

Overall, chapter 3 identified relationship quality as a potential buffer for IPV among individuals with insecure attachment. Taken together, the results suggest that perceptions of better relationship quality may mitigate the impact of COVID-related PTSD in those with an insecure attachment style, potentially reducing violence in intimate relationships.

Although attachment research investigated how individual differences in attachment affect individuals' relational functioning, there has been less focus on how both partners' attachment styles interact in the development and maintenance of intimate relationships and how experiences in relationships could impact each partner's attachment style. For instance, attachment-related emotions, cognitions, and behaviors of each partner may be dependent on the corresponding emotions, cognitions, and behaviors of their intimate partner (Feeney, 2003; Mikulincer et al., 2002). While each partner brings specific attachment-related tendencies (e.g., attributions, expectations, strategies for affect regulation), it is the combination of both partners' attachment-related tendencies that ultimately determines the couple dynamic.

Study 4 delved into the complexity of dyadic attachment styles, revealing how the combination of partners' attachment tendencies can influence relationship outcomes and ultimately IPV perpetration. Specifically, the study assessed partner effects of attachment styles on individuals' relationship evaluations of two aspects of relationship quality: satisfaction and commitment and how they relate to IPV. Specifically, the study predicted that one's attachment anxiety would be associated with negative relationship quality evaluations when partnered with someone avoidant, and that commitment would further mediate the relationship between attachment anxiety and IPV perpetration.

The final study, in line with previous findings, affirmed that one's attachment style, particularly anxious attachment, plays a direct role in IPV perpetration. Additionally, it revealed that commitment mediates this relationship, particularly when anxious individuals are in relationships with avoidant partners. This emphasizes the importance of considering not only individual attachment styles but also the unique patterns that emerge within relationships.

From this perspective, IPV may be a pursuit behavior employed by anxious individuals, which is in line with prior attachment-based conceptualizations that explain IPV as a dysfunctional form of protest behavior. Conversely, the employment of IPV by avoidant individuals may suggest that IPV could be a desperate attempt to create distance from a partner (Roberts and Noller, 1998). IPV may therefore reflect strategies to either increase or decrease distance, depending on individual interaction needs and goals, as well as the dyadic context. The findings illuminate how attachment-related emotions, cognitions, and behaviors of each partner interplay to shape the couple dynamic. This systemic perspective underscores the multifaceted nature of IPV and its roots in attachment patterns.

In summary, this thesis explored the intricate tapestry of attachment styles, stress, and their impact on IPV perpetration. It has shed light on the interplay between individual and interpersonal factors in the face of a significant life event like the COVID-19 pandemic. Combined, the findings propose that anxious attachment emerges as a universal potent risk factor for IPV in both men and women. Heightened distress may erode secure attachment functioning and can lead to increased IPV perpetration by secure individuals, while relationship quality stands as a protective buffer against IPV in insecure individuals during stressful life events. An important finding of this thesis is that anxious individuals who are in romantic relationships with avoidant partners report higher levels of commitment and increased IPV perpetration, although they report being more satisfied and committed to those relationships. This could mean that anxious individuals are more likely to get stuck in dissatisfying relationships with avoidant partners and consequently continue the abusive cycle. However, the association between attachment and IPV may be more complex than the present analyses would suggest. Future research should delve deeper into the intricate mediators governing the

relationships between attachment needs and IPV perpetration to advance the scientific and clinical understanding of IPV perpetration. For instance, mediators between attachment needs and IPV perpetration may include relational attributions, triggers of violence and communication patterns of both partners. In addition, more research is needed to determine whether the present findings can be generalized to other major life stressors or events. Finally, further understanding the precise adaptive design of the psychological mechanisms that generate IPV is paramount to the collective pursuit to strategically reduce violence in our world.

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