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Emotion Dysregulation and Intimate Partner Aggression During Pregnancy: Leveraging Both Partners' Experiences with Dyadic Data

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Abstract

Intimate partner aggression (IPA) during pregnancy is a significant public health problem that has negative consequences for maternal and fetal health. This study examined emotion dysregulation as a potential predictor of IPA during pregnancy from a dyadic perspective. Participants were 113 couples expecting a baby and included 113 mothers (MOBs; Mage = 27.50 years, SDage = 5.53, rangeage = 19-40; 38.1% White, 24.8% Latinx, 15.9% African American, 14.2% biracial/multiracial, 3.5% Asian American/ Pacific Islander, 2.7% Native American and .8% other) and 113 fathers (FOBs; Mage = 29.83 years, SDage = 7.61, rangeage = 18-55; 38.1% White, 22.1% African American, 20.4% Latinx, 17.7% biracial/multiracial, .9% Asian/Pacific Islander, .8% other). Participants completed the Revised Conflict Tactics Scale and the Difficulties in Emotion Regulation Scale about their own dysregulation and their partner's. Actor partner interdependence models (APIMs) examined whether actor and partner emotion dysregulation were associated with actor aggression during pregnancy. Correlation and cross tabulation were also used to examine perception of one's partner's emotion dysregulation and its association with IPA. APIM results indicated that while total emotion dysregulation was not significantly related to aggression, impulse control difficulties when upset had a significant actor and partner effect on actor aggression towards partner during pregnancy. Additional results indicated that FOBs' reports of MOBs' emotion dysregulation were not significantly correlated with MOBs' self-reported emotion dysregulation, while MOBs' reports of FOBs' emotion dysregulation were significantly moderately correlated with FOBs' self-reported emotion dysregulation. For couples in which aggression was endorsed, there were substantial levels of disagreement between partners about the presence of IPA. This study identified actor and partner impulse control difficulties when upset as a predictor of IPA during pregnancy and a potential treatment target for couples at risk for or engaging in situational couple violence. Furthermore, findings underscore the lack of agreement between partners when reporting IPA, necessitating the study of IPA and emotion dysregulation as relational phenomena through dyadic approaches. Prenatal service providers should therefore consider that each partner's report of IPA may not agree within couples, so assessment and screening strategies may optimally serve at-risk parents-to-be if they ask both members for their perspectives.

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by

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Table of Contents

vi

List of Tables

Chapter 1: Introduction

Intimate partner aggression and violence during pregnancy is a significant public health problem that renders mothers and babies vulnerable to psychosocial, health and developmental problems, and increased risk of injury and morbidity (Alhusen et al., 2015; Chisholm et al., 2017; Murray et al, 2020; Pastor-Moreno et al., 2020). Much research has been devoted to understanding correlates of intimate partner violence (IPV) both during and outside of pregnancy to identify couples at risk and to inform treatment (Hardesty & Ogolsky, 2020; Taillieu & Brownridge, 2010). Emotion dysregulation has been established as one such correlate. For instance, studies in non-pregnant samples that utilize single informants have found that emotion dysregulation is significantly related to IPV perpetration in both men and women (e.g., Bliton et al., 2016; Grigorian et al., 2019; Grigorian et al., 2020; Watkins et al., 2016). Less is understood, however, about the dyadic nature of this relation. In other words, how does one's own emotion dysregulation *and* one's partner's emotion dysregulation influence IPV during pregnancy? Both emotion dysregulation and IPV are relational processes, whereby each person's behavior and emotions affect the other, necessitating a dyadic approach to accurately understand these phenomena (Levenson et al., 2014; Neal & Edwards, 2017).

Furthermore, these relational processes are influenced by each person's perception of their partner's emotions and behavior. Accurate perception of others' emotions and behavior is necessary for maintaining close relationships, and the

1

inaccurate perception of one's partner's emotion dysregulation may lead to greater reactivity towards the partner, which could increase the risk of IPV (Levenson et al., 2014; Reeck et al., 2016). However, the nature of one's perceptions of their partner's emotion dysregulation is not well understood, particularly as it relates to IPV. Understanding one's emotion dysregulation and IPV, and one's perceptions of their partner's emotion dysregulation and IPV becomes even more salient during pregnancy, when mothers and babies are more vulnerable to health problems, couples are more vulnerable to experiencing intense emotions and stress, and families are more vulnerable to the intergenerational transmission of IPV (Flach et al., 2011; Murray et al., 2020; Narayan et al., 2021). This study utilized dyadic data to better understand the links between emotion dysregulation and IPV during pregnancy to inform IPV risk assessment during pregnancy and preventive interventions for expectant couples at risk for IPV during pregnancy.

Intimate Partner Violence (IPV) Definitions

IPV occurring in adulthood, not necessarily specific to pregnancy, is a prevalent and preventable public health issue. Approximately 1 in 3 women and 1 in 3 men in the U.S. experience physical violence, sexual violence and/or stalking by an intimate partner in their lifetime (Smith et al., 2018). IPV is defined by the Center for Disease Control (CDC) and the National Center for Injury Prevention and Control as physical violence, sexual violence, psychological violence and/or stalking by a current or former intimate partner (Breiding et al., 2015). Physical violence encompasses physical force intended to hurt, injure, or cause death, including but not limited to pushing, grabbing, biting, hitting, kicking, burning, choking or use of a weapon (Breiding et al., 2015). Sexual violence is

defined as forced or coerced sexual acts without obtaining consent, including but not limited to forced or alcohol/drug facilitated penetration (e.g., forcing vaginal, oral or anal penetration on the victim; forcing the victim to penetrate the perpetrator or someone else), forced sexual touching, sexual acts coerced through non-physical means (e.g., threats, intimidation), or unwanted non-contact sexual experiences (e.g., harassment; Breiding et al., 2015).

IPV During Pregnancy

Pregnancy is a time of tremendous transition and excitement that can also be a period of stress and vulnerability for pregnant women and couples with significant consequences for fetal and family health (Figueiredo & Conde, 2015; Slade et al., 2009). IPV during pregnancy is a prevalent problem with significant negative health effects for mother and baby, and it may have long-term implications for cycles of violence to continue in generations to come (Alhusen et al., 2015; Campbell, 2002; Pastor-Moreno et al., 2020). Pregnancy is also an opportunity for increased contact with health providers, creating opportunities for screening and treatment to best support families before their baby arrives. As such, pregnancy is a critical juncture in identifying and preventing IPV to deter the intergenerational transmission of stress and adversity from parents to children (Narayan et al., 2021).

Prevalence of IPV During Pregnancy

Prevalence rates of IPV against pregnant women vary across studies depending on the population under investigation and the methodology used to assess IPV. A systematic review conducted in 1996 found prevalence rates between 1% and 20%, although this increased to a prevalence rate of 7% to 20% when only including studies that assessed for

IPV more than once using in-person interviews (Gazmararian et al., 1996). Additionally, a review conducted in 2021 found that for studies reviewed from the U.S., the prevalence of IPV against pregnant women was 9%-19% (Mojahed et al., 2021). Recent population-based studies, which most commonly utilize the Pregnancy Risk Assessment Monitoring System (PRAMS), an assessment project conducted by the CDC to assess IPV against pregnant women, find prevalence rates between 2% and 3% (Masho et al., 2019; Minns et al., 2019; U.S. Department of Health and Human Services, 2013). It is important to note that the PRAMS studies exclusively assess physical abuse during pregnancy (as opposed to other forms of IPV) utilizing a single, global question to capture physical victimization from partner (e.g., "During your most recent pregnancy, did your husband or partner push, hit, slap, kick, choke, or physically hurt you in any other way?"), which may underestimate the true prevalence of IPV during pregnancy. Alternatively, studies of low-income samples and samples being served at public clinics utilizing behaviorally specific questionnaires (e.g., Revised Conflict Tactics Scale, Abuse Assessment Screen), which assess for the presence of particular aggressive behaviors (e.g., "My partner twisted my arm or hair") rather than a global question (e.g., "Have you ever been abused by a romantic partner?") typically find higher prevalence rates of 14%-15% for any type of IPV against pregnant women (physical, sexual or psychological abuse; Bailey, 2010; Narayan et al., 2017).

Research on perpetration of IPV by pregnant women is extremely limited. However, two studies utilizing low-income samples found prevalence rates of physical IPV perpetration by pregnant women against their partners between 20%-30% (Hellmuth et al., 2013a; Narayan et al., 2017). Importantly, the prevalence rates discussed may be

4

underestimates of the true prevalence of IPV during pregnancy, as under-reporting of this phenomenon is quite common (Emery, 2010). It is less common for studies to assess both IPV victimization and perpetration, but studies that do assess both indicate substantial rates of bidirectional IPV during pregnancy (Mojahed et al., 2021). Of note, most studies on the prevalence of IPV during pregnancy rely solely on pregnant women's self-reports.

Consequences of IPV During Pregnancy

IPV victimization that occurs during pregnancy is associated with significant pregnancy complications and negative birth outcomes, including pre-eclampsia, low birth weight, pre-term birth, inadequate weight gain, small for gestational age, and increased risk of fetal death (Alhusen et al., 2015; Campbell, 2002; Pastor-Moreno et al., 2020). Furthermore, IPV victimization during pregnancy is associated with maternal psychopathology (e.g., depression) and health risk behaviors during pregnancy (e.g., substance use), as well as inconsistent prenatal care (Alhusen et al., 2015; Chisholm et al., 2017). A systematic review of maternal injuries during pregnancy found that IPV victimization was the leading cause of injury during pregnancy, ahead of motor vehicle crashes (Mendez-Figueroa et al., 2013). In addition to the more proximal pregnancy and birth outcomes associated with IPV during pregnancy, evidence indicates that IPV during pregnancy is also related to offspring internalizing and externalizing problems in infancy and childhood, as well as disrupted HPA axis regulation in offspring (Martinez-Torteya et al., 2016; Radtke et al., 2011; Silva et al., 2018; Toso et al., 2020).

There is little to no research on how IPV affects men during pregnancy if women are the perpetrators, although research outside of the prenatal period indicates that IPV victimization is associated with men's psychopathology, physical health problems (e.g.,

poorer overall health, injury), relationship dissatisfaction and instability, and increased

health risk behaviors (e.g., alcohol and drug use; Carrol et al., 2010; Coker et al., 2002).

While most studies focus on the consequences of male-to-female IPV during pregnancy,

there is also evidence that bidirectional violence (in which the pregnant women and

partner both perpetrate violence and are victimized) portends negative outcomes for

pregnant women including higher likelihood of depression and drug and alcohol use,

although directionality of these associations is unknown (Hellmuth et al., 2013a;

Shneyderman & Kiely, 2013).

IPV during pregnancy is also associated with IPV during the postpartum period,

creating a trajectory of continued health risks for the next generation (Bianchi et al.,

2016; Martin et al., 2001). For example, the negative maternal mental health outcomes

associated with prenatal and postpartum IPV have been shown to predict child behavior

problems, including aggression, both directly and indirectly (e.g., indirectly through

disrupted attachment or disrupted parenting practices; Miller-Graff et al., 2019; Murray et

al., 2020). Additionally, the psychosocial (e.g., internalizing and externalizing problems)

and biobehavioral (e.g., disrupted HPA-axis responsivity) consequences of in-utero IPV

exposure increase an offspring's risk of behaving aggressively (Toso et al., 2020). In

addition to the negative pregnancy and birth outcomes associated with IPV during

pregnancy, it is clear that IPV during pregnancy increases the risk for transmission of

violence across generations, necessitating a deeper understanding of predictors of IPV

during pregnancy that could then be targeted to disrupt intergenerational pathways of

violence.

6

IPV Measurement and Dyadic Data

Given the prevalence of bidirectional IPV during pregnancy and the potential intergenerational consequences of such violence, research on IPV during pregnancy must involve data from both members of the couple to understand correlates that could inform assessment and treatment more deeply. Most studies on predictors and consequences of IPV utilize data from a single informant (i.e., interviewing individuals about their own experiences of violence; Hardesty & Ogolsky, 2020). Further, evidence has consistently indicated that couples disagree about the frequency of violence in their relationships, highlighting the need for dyadic data that considers both partners' perspectives on IPV within the relationship (Bates, 2010; Caetano et al., 2002; Neal & Edwards, 2016). The last decade has seen an increase in the use of dyadic data and specifically Actor-Partner Interdependence Models (APIMs), which have greatly increased our understanding of the relational aspects of IPV (Hardesty & Ogolsky, 2020). For instance, studies using APIMs indicate that while anger is associated with IPV perpetration only at the actor level (i.e., one's level of anger impacts one's own IPV perpetration, but not one's partner's perpetration), one's level of contempt for their partner is associated with one's own perpetration as well as one's partner's perpetration (Sommer & Babcock, 2019). However, the literature still lacks understanding of the dyadic effects of emotion dysregulation on IPV, particularly during the pregnancy period, which is a significant developmental transition in which emotion dysregulation and IPV are salient.

Emotion Dysregulation

Emotion dysregulation represents challenges in identifying, coping with, and managing different emotional states, particularly negative emotional states. This includes difficulties engaging in goal-directed behavior and controlling impulses when upset, a lack of clarity and awareness of emotions, and a lack of acceptance of emotional states (Gratz & Roemer, 2004). Emotion dysregulation has historically been studied as an individual phenomenon, but growing research has recognized the importance of considering emotion dysregulation in a social context (Zaki & Williams, 2013). Specifically, many romantic partners often engage in an iterative process of expressing and regulating their own emotions and responding to their partner's emotions to then downregulate their own negative emotions and upregulate their positive emotions (Levenson et al., 2014). This coregulatory process is complex and necessitates consistent monitoring of emotional arousal and modification of regulatory strategies from both partners (Levenson et al., 2014).

Emotion Dysregulation During Pregnancy

Pregnancy involves neurobiological, hormonal, and psychological changes that influence pregnant women's emotion dysregulation (Kim, 2016; Tal et al., 2015). In addition, significant psychological reorganization and role changes occur during pregnancy that can lead to increased stress and emotional upheaval (Slade et al., 2009). A recent review indicated that perinatal women exhibited greater mood instability than non-perinatal women (Li et al., 2020). From early to late pregnancy, levels of progesterone and estrogen increase, which in turn are associated with increased activation of the amygdala and hippocampus, both of which are centers for processing and integrating

emotional information (Tal et al., 2015). Furthermore, increases in sex hormones, as well as increased plasticity in the prefrontal cortex, are linked with increased vigilance towards threat and fearful infant faces, an adaptation that prepares mothers to protect their infants (Kim, 2016). While this adaptation is a normative part of pregnancy, evidence indicates that it may also make pregnant women more vulnerable to heightened anxiety symptoms in late pregnancy, and therefore more vulnerable to increased emotion dysregulation (Pearson et al., 2009).

Very little research exists on expectant fathers' emotion dysregulation during pregnancy. However, the extant evidence indicates psychopathology characterized by heightened emotion dysregulation, including depression and anxiety, increases for fathers-to-be during the perinatal period (Wong et al., 2016). Fathers also experience significant psychological reorganization (e.g., formation of a paternal identity) which can result in emotion dysregulation (Genesoni & Tallandini, 2009). Furthermore, hormonal changes also occur in fathers during the prenatal period. For example, testosterone decreases in fathers during pregnancy, an adaptation associated with more sensitive caregiving of the infant after birth (Saxbe et al., 2017). Research in this area is extremely limited, but it is possible that the hormonal changes fathers experience may operate similarly as they do in mothers. These changes are evolutionarily necessary to support effective caregiving, and they may also increase vulnerability to anxiety and therefore to emotion dysregulation.

Psychological and physiological changes happening at the individual level for both women and men during the prenatal period may impact couple-level emotion dysregulation and relationship conflict (Figueiredo & Conde, 2015). For instance,

discussion of family role changes, finances, and co-parenting expectations may all lead to conflict, tension, or stress within couples during the prenatal period (Figueiredo & Conde, 2015). Moreover, evidence suggests that during pregnancy, couples exhibit synchrony in some hormonal changes, which may impact their ability to co-regulate their emotions (Braren et al., 2020).

Emotion Dysregulation and IPV

Theoretically, IPV perpetration is conceptualized as a strategy that provides catharsis and relief from negative emotions (Bushman, Baumeister, & Phillips, 2001; Langhinrichsen-Rohling, McCullars, & Misra, 2012). Broadly, emotion dysregulation is significantly related to perpetrating aggressive acts (not necessarily in the context of a romantic relationship; Holley et al., 2017; Roberton et al., 2012). Specific to romantic relationships, self-reported emotion dysregulation is associated with one's own physical IPV perpetration for both men and women (Bliton et al., 2016; Watkins et al., 2016). While much of the research on IPV and emotion dysregulation utilizes young adult samples in dating relationships (e.g., Bliton et al., 2016; Shorey et al., 2011a), the association between emotion dysregulation and IPV has also been found in other samples including clinical samples, men and women arrested for domestic violence, and newly married couples (Grigorian et al., 2019; Grigorian et al., 2020; McNulty & Hellmuth, 2008; Watkins et al., 2016). While the evidence base is stronger for the association between emotion dysregulation and physical violence perpetration, the limited research on the connection between emotion dysregulation and sexual violence perpetration suggests a significant association for male perpetrators but not for female perpetrators

(Shorey et al., 2011a). That is, emotion dysregulation is likely to lead to heighted

perpetration of sexual violence by men, but not by women.

Much of the research on emotion dysregulation and IPV perpetration measures

emotion dysregulation using the Difficulties in Emotion Regulation Scale (DERS; Gratz

& Roemer, 2004). Most extant studies utilize the total DERS score while some also

utilize its six component subscales: nonacceptance of emotional responses, difficulties

engaging in goal-directed behavior, impulse control difficulties when upset, lack of

emotion awareness, limited access to emotion regulation strategies, and lack of emotional

clarity. Evidence suggests that treating the DERS total score as a single factor may not be

comprehensive in isolation and that subscales should be tested in addition to the DERS

total score to better understand the mechanisms by which emotion dysregulation predicts

outcomes (Fowler et al., 2014; Lee et al., 2016). Indeed, evidence indicates distinct

associations between DERS subscales and IPV perpetration (Bliton et al., 2016; Shorey et

al., 2011a; Watkins et al., 2016). For example, impulse control difficulties when upset

and having limited clarity of emotional reactions were significantly related to IPV

perpetration in a sample of men and women receiving treatment for substance abuse

(Watkins et al., 2016). Another study found that for college-age men, no DERS subscales

were significantly related to physical IPV perpetration, but for college-age women,

impulse control difficulties when upset, having limited clarity of emotional reactions,

lacking effective emotion regulation strategies, and having limited awareness of

emotional reactions were associated with physical violence perpetration (Bliton et al.,

2016). Overall, research on associations between specific DERS subscales and IPV is

11

mixed and suggests potential differences across gender, warranting further investigation (Bliton et al., 2016; Shorey et al., 2011a; Watkins et al., 2016).

While the impact of one's emotion dysregulation on their own IPV perpetration has received attention, less research has been devoted to understanding the relation between emotion dysregulation and IPV from a dyadic perspective (i.e., both partners' reports of emotion dysregulation and IPV). There is limited but growing research on how one's partner's emotion dysregulation is associated with one's own IPV perpetration. Particular attention has been given to emotion dysregulation or other regulatory capacities (e.g., impulse control, executive functioning) and their link to IPV in the context of alcohol use. For instance, in a dyadic study of heavy-drinking couples, results indicated that an individual's emotion dysregulation and their partner's emotion dysregulation both significantly increased the likelihood of the individual's physical IPV perpetration (Parrott et al., 2017). Another study found that impulse control problems were significantly related to use of psychological aggression in women and men, and severity of physical aggression in women (Watkins, Maldonado, & DiLillo, 2014). Results from this study also indicated significant partner effects, such that men and women with partners who had greater impulse control difficulties were more likely to perpetrate physical and psychological aggression themselves (Watkins et al., 2014).

Lee and colleagues (2020) conducted a study of emotion dysregulation and IPV (not in the context of alcohol use nor during pregnancy) with this dyadic approach and found that for physical IPV, women's emotion dysregulation did not significantly affect their own or their partners' perpetration. Alternatively, men's emotion dysregulation affected both their own and their partner's perpetration. Further, men's emotion

dysregulation impacted their own physical IPV perpetration only when their partner's

emotion dysregulation was high as well, highlighting the interactive nature of couples'

emotion dysregulation in predicting IPV from at least one member of the couple. For

sexual IPV, men and women's emotion dysregulation significantly affected their own

perpetration and their partner's, but there was no significant interaction (Lee et al., 2020).

Together, these studies highlight the added contribution of assessing and integrating both

partners' emotions and behaviors to better understand the links between emotion

dysregulation and IPV in couples.

One's Perception of their Partner's Emotion Dysregulation

Relatedly, it is also important to understand how individuals perceive their

partner's emotion dysregulation, and how that perception may be related to an

individual's IPV perpetration or victimization. Accurate perception of one's partner's

behavior and emotions is an integral part of one's social life and necessary for

maintaining close relationships (Kenny, 2019). For example, members of a couple who

are less aware of each other's emotional states and behaviors, particularly during periods

of stress or tension, may be more reactive to one another or less effective in the use of

communication or co-regulation strategies, which could increase the presence of conflict

and aggression (Levenson et al., 2014). Additionally, individuals who minimize their

partner's emotion dysregulation might overly tolerate or fail to recognize cues that their

partner is dysregulated, which could foreshadow engaging in or being a victim of

dangerous behavior, including IPV.

Very little research has been dedicated to understanding the accuracy of one's

perception of their partner's emotion dysregulation, much less how one's perception

13

relates to IPV. While there is evidence that one's perception of their partner's characteristics, including the partner's personality traits, relationship motives, positive and negative affect, conflict behavior (e.g., blaming), and positive and negative interaction patterns are moderately accurate, minimization and bias (e.g., the underestimation of negative qualities and overestimation of positive qualities) also exist (Fletcher & Kerr, 2010; Kouros et al., 2019; LaBuda et al., 2019; Venaglia & Lemay, 2019). Research specific to accuracy in judging one's partner's emotion dysregulation is limited and mixed, but generally suggests that one is moderately accurate in recognizing their partner's use of suppression (i.e., restricting emotional expression), and reappraisal as regulation strategies (Eldesouky et al., 2017; Impett et al., 2014). At the same time, research indicates significant biases at play in the judgment of one's partner's emotion dysregulation, including positive biases such as underreporting use of suppression and the presence of projection bias, in which one's judgement of their partner aligns more closely with their own regulation and behavior (Eldesouky et al., 2017; Peters & Overall, 2019). To our knowledge, no study has examined the association between one's perception of their partner's emotion dysregulation and the occurrence of IPV, much less during pregnancy. Understanding these associations is essential because accurate perception of partner emotion dysregulation could function as a malleable intervention target to support couples in managing conflict without aggression.

The Current Study: Aims and Hypotheses

Rather than severe acts of violence, the current study focused on more common forms of intimate partner aggression, also known as situational couple violence (Kelly & Johnson, 2008; Ali et al., 2016; Conroy & Crowley, 2021). Situational couple violence is

14

characterized by aggression from either/both partners resulting from specific conflicts, rather than a pattern of coercion and control from one partner only (Kelly & Johnson, 2008; Ali et al., 2016). Acts of aggression from either partner will hereafter be referred to as intimate partner aggression (IPA). The main reason for distinguishing IPA from the more commonly-used term, IPV, is to make the distinction that in the present sample, while both physically- and sexually-aggressive behaviors were reported by both men and women, they didn't typically rise to the level of severely violent or injurious behavior.

Further, the current study focused specifically on physical and sexual aggression during pregnancy because of the overt, identifiable nature of the aggression by each member of the couple, and the potential physical harm it could pose to each person, as well as the fetus (Chisholm et al., 2017; Pastor-Moreno et al., 2020; Shneyderman & Kiely 2013; Toso et al., 2020). IPA can be unidirectional (i.e., one member of the couple aggresses against the other) or bidirectional (both members of the couple aggress against each other), and the present study evaluated the extent to which IPA was unidirectional or bidirectional, according to both partners' perspectives.

To better understand this phenomenon of how emotion dysregulation from the individual or the partner may affect aggression from the individual or the partner, it is important to study emotion dysregulation and IPA in samples undergoing stress or developmental change, during which both emotion dysregulation and IPA may be salient issues. The present study used an ethnically-diverse, low-income sample of couples going through the developmental transition of pregnancy. Associations between emotion dysregulation and IPA during pregnancy were examined from a dyadic perspective through four aims. For the purposes of outlining the current study's hypotheses, the term

"actor" below refers to the target participant and can apply to either the pregnant

woman/mother of the baby (MOB) or the father of the baby (FOB). Similarly, "partner"

is the other member of the couple in relation to the actor and can also apply to either the

MOB or FOB.

Aims 1 and 2: Associations Between Emotion Dysregulation and IPA During Pregnancy Using APIMs

The first two aims explored associations between emotion dysregulation and IPA

during pregnancy using Actor Partner Interdependence Models (APIMs), first using self-

reported emotion dysregulation and then using the actor's report of their partner's

emotion dysregulation. Given the functionality of APIMs, these aims addressed the

MOB's actor and partner effects and the FOB's actor and partner effects, thus testing all

possible actor-actor and actor-partner combinations and examining aggression from both

the MOB and from the FOB.

Aim 1: Associations Between Self-Reported Emotion Dysregulation and IPA During Pregnancy

The first aim addressed whether an actor's emotion dysregulation and/or a

partner's emotion dysregulation was associated with the actor's aggression during

pregnancy. This aim examined the association of a) the actor's self-reported emotion

dysregulation and b) the partner's self-reported emotion dysregulation with the actor's

aggression during pregnancy. It was hypothesized that a) the actor's higher levels of

emotion dysregulation would be significantly associated with the actor's higher levels of

aggression during pregnancy (i.e., actor effect), b) the partner's higher levels of emotion

dysregulation would be significantly associated with the actor's higher levels of

16

aggression during pregnancy (i.e., partner effect), and c) the interaction of the actor's and

the partner's levels of emotion dysregulation would be associated with higher levels of

the actor's aggression, such that aggression will be highest when the actor and partner are

both high in emotion dysregulation.

Exploratory follow-up analyses to this aim assessed the associations between the

six individual DERS subscales (nonacceptance of emotional responses, difficulties

engaging in goal-directed behavior, impulse control difficulties, lack of emotional

awareness, limited access to emotion regulation strategies, and lack of emotional clarity)

using APIMs to investigate the effects of specific actor and partner emotion regulation

deficits on IPA during pregnancy. Specifically, for each DERS subscale the following

were examined in relation to the actor's aggression during pregnancy: a) the actor's self-

reported emotion dysregulation subscale and b) the partner's self-reported emotion

dysregulation subscale. As the literature on the association between DERS subscales and

IPA is limited and mixed, no hypotheses were specified for this aim.

Aim 2: Associations Between Partner-Reported Emotion Dysregulation and IPA During Pregnancy

The second aim addressed whether the actor's emotion dysregulation reported by

the partner and/or the partner's emotion dysregulation reported by the actor was

associated with the actor's aggression during pregnancy. This aim, also using an APIM,

examined the associations of a) the actor's emotion dysregulation reported by the partner,

b) the partner's emotion dysregulation reported by the actor and c) the interaction of the

actor's and partner's levels of emotion dysregulation with the actor's aggression during

pregnancy. Given that little is known about how an actor's report of their partner's DERS

relates to their partner's self-reported DERS, subscale analyses were not conducted for this aim.

Aim 3: Associations of Self-Reported and Partner-Reported Emotion Dysregulation

The third and fourth aims explored the under-studied issue of accuracy in perception of one's partner's emotion dysregulation and the association between accuracy of reporting emotion dysregulation and accuracy of reporting IPA. The third aim addressed whether an actor's report of their partner's emotion dysregulation was significantly associated with the partner's self-report of his/her own emotion dysregulation. It was hypothesized that the actor's report of his/her own emotion dysregulation would be moderately significantly associated with the partner's report of the actor's emotion dysregulation (Eldesouky et al., 2017).

Aim 4: Actor-Partner Reporting Differences in Emotion Dysregulation and IPA

The fourth and final aim addressed whether differences in emotion dysregulation reporting between actor and partner correspond to differences in IPA reporting between actor and partner. This aim examined whether discordance between the actor's self-reported emotion dysregulation and the partner's report of the actor's emotion dysregulation was associated with patterns of concordant or discrepant reporting of IPA (neither partner reported IPA, only actor reported, only partner reported, or both partners reported). Because research on partner's report of an actor's emotion dysregulation is lacking, particularly in how it relates to IPA, no hypothesis was specified for this aim.

Chapter 2: Methods

Participants were 113 couples expecting a baby and included 113 MOBs (M_{age} = 27.50 years, SD_{age} = 5.53, range$_{age}$ = 19-40; 38.1% White, 24.8% Latinx, 15.9% African American, 14.2% biracial/multiracial, 3.5% Asian American/Pacific Islander, 2.7% Native American and .8% other) and 113 FOBs (M_{age} = 29.83 years, SD_{age} = 7.61, range$_{age}$ = 18-55; 38.1% White, 22.1% African American, 20.4% Latinx, 17.7% biracial/multiracial, .9% Asian/Pacific Islander, .8% other). Couples were drawn from a larger study of 180 families on the intergenerational transmission of risk and resilience through the perinatal period. Of the 180 families in the larger study, 175 MOBs participated (five FOBs participated alone), and 121 FOBs/current partners participated, resulting in 116 families in which both members of the couple participated. Of these 116 families, three couples included men who were current romantic partners serving in the second parent role, but who were not the biological fathers of the baby. Thus, the focus of the present study is on 113 couples who were both biological parents of the baby.

All participants in the broader study were recruited from the metropolitan public general hospital in a large, western U.S city that primarily serves low-income and medically under-insured or uninsured individuals. Participants were eligible if they were at least 18 years old, spoke English, and the MOB was in the second or third trimester of pregnancy.

The MOBs ($n = 113$) were mostly in their second trimester (67.3%), although one-third of MOBs (32.7%) were in their third trimester. Of the MOBs, 21.2% had less than a high school degree ($M_{educ} = 12.92$ years, $SD_{educ} = 2.04$, range$_{educ}$ = 9-18), 49.6% were currently unemployed and 41.6% were currently living below the federal poverty line. Of the FOBs ($n = 113$), 15.0% had less than a high school degree ($M_{educ} = 12.74$ years, $SD_{educ} = 1.67$, range$_{educ}$ = 8-18), 18.6% were currently unemployed and 31.9% were living below the federal poverty line (couples did not always agree on their average household income). Of the 113 couples, 85.0% reported living together during pregnancy, 8.8% reported not living together, and 6.2% did not agree on their current living arrangements (e.g., one person said they did live together, one person said they did not). In terms of relationship status, 94.7% reported being romantically partnered, 2.7% reported being unpartnered, and 1.8% did not agree (.8% were missing data from both partners about relationship status).

Procedure

Research interviews during pregnancy lasted approximately 2.5 hours and included standardized measures of emotion dysregulation and IPA, as well as semi-structured measures of demographic information and relationship history. The study (protocol #964367) was approved by University of Denver's Institutional Review Board. All participants provided informed consent prior to participation and all parts of the protocol were administered orally to facilitate a supportive dialogue and minimize effects of differences in educational level or English language proficiency. All MOBs and FOBs were interviewed individually in private rooms and were compensated $50 following participation.

Measures

IPA During Pregnancy

The Revised Conflict Tactics Scale (CTS-2; Straus et al., 1996) was used to assess IPA victimization and perpetration during pregnancy. The CTS-2 is a validated, self-report questionnaire consisting of 39 item pairs that assess specific behaviors used to manage conflict in a romantic relationship. The CTS-2 has been shown to have strong test re-test reliability and internal consistency (Straus et al., 1996). For every item, the actor was asked whether they engaged in a particular behavior towards their partner (e.g., "I slapped my partner," i.e., aggression) and if their partner used that same behavior against them (e.g., "My partner did this to me," i.e., victimization). The format of the CTS-2 response items was minimally adapted to specifically assess aggression occurring during the prenatal period and from the other biological parent of the baby. For instance, if participants endorsed an item, they were asked if it occurred "Before pregnancy, during pregnancy, or both" and were asked if the aggression occurred with "Mother/father of the baby, a different partner, or both." The current study focused only on IPA occurring during pregnancy (i.e., when a participant endorsed "during pregnancy" or "both") and with the biological mother/father of the baby (i.e., when a participant endorsed "Mother/father of the baby" or "both"). Questions on the CTS-2 fall into five types: verbal negotiation, psychological aggression, physical assault, sexual coercion, and injury (Straus et al., 1996). For the current study, only the latter three types were used because

the focus was on physical and sexual IPA. The physical assault and injury subscales were combined to form the "physical IPA" variable.

Emotion Dysregulation

Emotion dysregulation was measured using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a 36-item, self-report questionnaire assessing problems with regulating emotion across six domains: nonacceptance of emotional responses, difficulties engaging in goal directed behavior when upset, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies and lack of emotional clarity (Gratz & Roemer, 2004). All items used a five-point Likert scale (1 = *"Almost never"* to 5 = *"Almost always"*). For the current study, the format of the DERS was minimally adapted to include both the actor's self-report and the actor's report on their partner (i.e., each participant responded to the 36 items about their own emotion dysregulation and then about their partner's emotion dysregulation). The DERS has good test-retest reliability and validity in general (Gratz & Roemer, 2004), and good internal consistency for MOBs and FOBs for both actor self-report (α_{MOB} = .99; α_{FOB} = .99) and actor report on partner (α_{MOB} = .99; α_{FOB} = .99) in this sample. A total emotion dysregulation score was created by summing all items. Therefore, each actor has two total DERS scores: one based the actor's self-report (utilized in Aim 1) and one based on the partner's report of the actor's emotion dysregulation (used in Aim 2).

Data Analysis Plan

IPA Outcome Variables

Several computational steps were taken to compute study-specific IPA variables before any aims were addressed. Dichotomous variables based on self-report were created for each participant to represent their physical *or* sexual aggression (collapsed and hereinafter referred to as aggression) and physical *or* sexual victimization (collapsed and hereinafter referred to as victimization). The decision to collapse the physical IPA variable (physical assault and injury) and sexual coercion subscales was due to the low incidence of sexual coercion in this sample, and evidence that the sexual coercion subscale has lower reliability in female samples (Chapman, & Gillespie, 2019). Please see Tables 1 and 2 for frequencies of reported physical and sexual aggression items in this sample. In the collapsing process, if participants endorsed any physical or sexual aggression items, they were given a "1" for physical or sexual aggression, and if participants endorsed experiencing any physical or sexual victimization items, they were given a "1," for physical or sexual victimization. This process yielded two variables per individual (MOB and FOB): physical/sexual victimization (0 or 1) and physical/sexual aggression (0 or 1).

These dichotomous self-report aggression and victimization variables were then combined to form four groups representing which member(s) of the couple endorsed IPA (that is, to specify whether there was agreement within couples on whether aggression and victimization were occurring). To do so, first, MOB aggression and FOB victimization were combined to form reporting groups for MOB-on-FOB aggression (0 =*"MOB did not report aggression towards FOB and FOB did not report victimization*

from MOB," 1 = "MOB did not report aggression towards FOB but FOB reported

victimization from MOB," 2 = MOB reported aggression towards FOB but FOB did not

report victimization from MOB," and 3 = "MOB reported aggression towards FOB and

FOB reported victimization from MOB). Similarly, MOB victimization and FOB

aggression were combined to form reporting groups for FOB-on-MOB aggression (0 =

"FOB did not report aggression towards MOB and MOB did not report victimization

from FOB," 1 = "FOB did not report aggression towards MOB but MOB reported

victimization from FOB," 2 = FOB reported aggression towards MOB but MOB did not

report victimization from FOB," and 3 = "FOB reported aggression towards MOB and

MOB reported victimization from FOB). This four-group combining process yielded two

variables per couple, one for MOB-on-FOB aggression and one for FOB-on-MOB

aggression (to be retained for use in Aim 4).

Each grouping was collapsed for Aims 1 and 2 to create dichotomous IPA

variables in which "0" represented neither member of the couple reporting that IPA

occurred (equal to group 0 from the four-group combinations above) and "1" represented

at least one member of the couple reporting that IPA occurred (equal to groups 1, 2, or 3

from the four-group combinations above). This process aligns with maximum dyadic

reporting (Neal & Edwards, 2016) in which the highest report of IPA across either

member of the couple is used (e.g., if MOB self-reported victimization but FOB denied

aggression, then the summary variable was considered to be a "1" for FOB-on-MOB

aggression because at least one member of the couple reported that IPA occurred). This

process yielded two dichotomous scores per couple that were used in Aims 1 and 2: the

MOB's aggression (which also represents the FOB's victimization) and the FOB's aggression (which also represents the MOB's victimization).

Aims 1 and 2: Associations Between Emotion Dysregulation and IPA During Pregnancy Using APIMs

For the first and second aims to address whether actor and partner emotion dysregulation was associated with IPA during pregnancy, APIMs were utilized. APIMs allow for the examination of both the actor's and the partner's outcomes as a function of their own causal variables (actor effect; for the current study the causal variable is emotion dysregulation measured via the DERS) and their partner's causal variables (partner effect), while allowing for the interdependence of the two individuals' responses (Kenny & Cook, 1999; Kenny & Ledermann, 2010). A multi-level, mixed effects logistic regression model was employed because the outcome variable was dichotomous (Garson, 2020). Analyses for these aims were completed in HLM version 8.1 software using Adaptive Gaussian Quadrature estimation (AGQ), except for Step 1 of the model for Aim 2 which did not converge using AGQ so penalized quasi likelihood (PQL) results were interpreted. AGQ results were stable from 30-100 quadrature points so the results using 30 quadrature points are presented (Loeys & Molenberghs, 2013).

The APIMs conducted for the first and second aims to examine the associations between emotion dysregulation and IPA during pregnancy utilized the same IPA outcome variables (i.e., actor's aggression and partner's aggression), but different emotion dysregulation causal variables. For the first aim, the actor's self-report of their own emotion dysregulation was used. For the second aim, the actor's report of their partner's

emotion dysregulation was used. All continuous predictor variables were grand mean centered (Garson, 2020).

The APIMs for Aims 1 and 2 were each completed in two steps. The first step corresponds to hypotheses a and b, assessing for significant actor and partner effects of emotion dysregulation on IPA, as well as the main effect of gender. The second step corresponds to hypothesis c, to evaluate the interaction between actor and partner dysregulation. For the exploratory aim examining the effect of individual DERS subscales, APIM analysis was completed in one step to assess for significant actor and partner effects as well as the main effect of gender.

Aim 3: Associations of Self-Reported and Partner-Reported Emotion Dysregulation

The third aim was to examine the accuracy of actor's report of their partner's emotion dysregulation compared to partner's self-report of their own emotion dysregulation. This aim was addressed through correlation analysis. Pearson correlations were computed between the actor's self-report total DERS score and the actor's total DERS score based on partner report.

Aim 4: Actor-Partner Reporting Differences in Emotion Dysregulation and IPA

The fourth and final aim addressed whether differences in emotion dysregulation reporting between actor and partner correspond to differences in IPA reporting between actor and partner. In other words, this aim addressed the question: Do couples who agree less on emotion dysregulation also agree less on the presence of IPA in their relationship? DERS difference scores were separately computed for MOBs and FOBs by subtracting

the partner's report of the actor's emotion dysregulation from the actor's self-reported emotion dysregulation (i.e., the MOB's self-reported emotion dysregulation minus FOB's report of the MOB's emotion dysregulation). DERS difference scores were then categorized into three groups based on the size and directionality of the difference (0 = "*Both partners agree on emotion dysregulation*," 1 = "*Actor self-reported greater dysregulation than partner reported for actor*" and 2 = *"Actor self-reported less dysregulation than partner reported for actor"*). Given that the DERS total score is a continuous score ranging from 0 to 180, agreement on the actor's emotion dysregulation was defined as a difference score within 10 points of agreement in either direction (the actor's self-report score and the partner's report on the actor were within 10 points). This threshold was chosen because it represented relative agreement (i.e., one-point difference on less than half of the questions) and resulted in approximately even distribution among the three groups. For every couple, two DERS difference groups were created: one for MOB and one for FOB. The DERS difference groups were then compared with the IPA reporting groups to assess whether couples in less agreement about emotion dysregulation were also in less agreement about the presence of IPA (see Tables 8a & 8b). This comparison was done qualitatively, rather than quantitatively (e.g., with chi-square tests), given the low cell sizes across groups.

Covariates

The following were examined as potential covariates through bivariate analyses: individual socioeconomic risk, maternal gestational age (number of weeks pregnant), and primiparity (whether this was the MOB's first pregnancy). Because the vast majority of participating couples were currently partnered and living together, cohabitation and

relationship status were not included as covariates. Socioeconomic risk was computed from the sum of three dichotomized variables: less than a high school (or equivalent) education, current unemployment status, and living below the federal poverty line during pregnancy ($M_{MOB} = 1.13$, $SD_{MOB} = 1.04$, $range_{MOB} = 0$-3; $M_{FOB} = 0.65$, $SD_{FOB} = 0.832$, $range_{FOB} = 0$-3). No covariates were significantly associated with the outcome variable and therefore none were retained for APIM analysis.

Attrition Analyses and Missing Data

Attrition analyses were completed to examine whether differences existed between women who participated in the study with the baby's biological father ($n = 113$) and women who participated in the study without the biological father (n = 62), including alone ($n = 59$) or with a current partner who was not the baby's biological father ($n = 3$). [Five biological fathers also participated in this study alone for a total of 180 participating families.] Independent t-tests and chi-square tests showed that, compared to women who participated without the baby's biological father, women who participated in the study with the baby's biological father did not significantly differ on physical or sexual IPA, total self-reported DERS score, current employment status, whether or not they lived below the federal poverty line, educational attainment, gestational age, or primiparity. However, women who participated in the study without the baby's biological father were more likely to report physical or sexual IPA victimization during pregnancy than women who participated in the study with the baby's biological father [$X^2 (1, 169) = 5.12$, $p = .024$].

Missing data for the 113 couples were very minimal across all aims, ranging from 0% to 5% for all variables. Specifically, missing data for MOBs' sexual or physical

aggression was 3%, and missing data for FOBs' sexual or physical aggression was 4% (variables used in Aims 1 and 2). Missing data for both IPA reporting group variables (used in Aim 4) was 5%. Missing data for MOBs' self-reported total DERS scores and MOBs' reports FOBs' total DERS scores were both 1%. Missing data for FOBs' self-reported total DERS scores and FOBs' reports of MOBs' total DERS scores were both 3.5%. Across the dataset only .03% of data was missing so analyses to account for missing data were deemed unnecessary.

Chapter 3: Results

Rates of IPA and DERS Descriptive Information

Please see Tables 1 and 2 for rates of CTS-2 items in the current sample. Based on maximum dyadic reporting, there were 44 couples in which FOB-on-MOB aggression during pregnancy and/or MOB-on-FOB aggression during pregnancy was endorsed. Of those 44 couples, there were 20 couples (17.7%) in which both MOB-on-FOB aggression and FOB-on-MOB aggression were reported, representing bidirectional IPA. Of the same 44 couples, there were four couples (3.5%) in which only FOB-on-MOB aggression occurred and 18 couples (15.9%) in which only MOB-on-FOB aggression occurred (2 of the 44 couples endorsed MOB-on-FOB aggression but were missing data for FOB-on-MOB aggression so a determination about whether aggression was unidirectional versus bidirectional could not be made). Overall, 24 couples (21.2%) reported FOB-on-MOB aggression during pregnancy, and 40 couples (35.4%) reported MOB-on-FOB aggression during pregnancy.

In terms of type of aggression reported, the following physical victimization variables were most commonly endorsed across the entire sample (all 226 MOBs and FOBs): "A partner grabbed me" ($n = 10$, 4.4%), "A partner pushed or shoved me" ($n = 8$, 3.5%), "A partner threw something at me that could hurt" ($n = 8$, 3.5%), and "A partner slapped me" ($n = 3$, 1.3%). The most-commonly endorsed physical aggression items were comparable to the most-commonly endorsed physical victimization items: "I pushed or

shoved a partner" ($n = 17$, 7.5%), "I slapped a partner" ($n = 7$, 3.1%), "I grabbed a partner" ($n = 6$, 2.7%), and "I threw something at a partner that could hurt" ($n = 6$, 2.7%).

For sexual victimization, the most-frequently endorsed items were "A partner insisted on sex when I did not want to (but did not use physical force)" ($n = 14$, 6.2%), "A partner made me have sex without a condom" ($n = 9$, 4.0%), and "A partner insisted I have oral or anal sex (but did not use physical force)" ($n = 4$, 1.8%). The most-commonly endorsed sexual aggression items were comparable to the most-commonly endorsed sexual victimization items: "I insisted on sex when a partner did not want to (but did not use physical force)" ($n = 11$, 4.9%), "I made a partner have sex without a condom" ($n = 7$, 3.1%), and "I insisted a partner have oral or anal sex (but did not use physical force)" ($n = 2$, 0.9%).

See Table 3 for descriptive statistics on levels of emotion dysregulation in this sample. Mean total and subscale scores were comparable to the mean scores from the initial validation of the DERS scale (Gratz & Roemer, 2004). There is no clinical cutoff score for the DERS.

Aims 1 and 2: Associations Between Emotion Dysregulation and IPA During Pregnancy Using APIMs

The unconditional model for Aim 1 and Aim 2 had a random intercept of 1.427 and an intra-class correlation coefficient (ICC) of .303, indicating that about 30.3% of the variation in aggression in this sample is accounted for by between-couple differences, and 69.7% is due to within-couple differences. Overall, this indicates a significant level of partner dependence, warranting a multi-level, mixed effects logistic regression model (Sommet & Morselli, 2017).

Aim 1: Associations Between Self-Reported Emotion Dysregulation and IPA During Pregnancy

Please see Table 4 for all APIM results for Aim 1. Step 1 of the APIM to assess Aims 1a and 1b for actor and partner effects of self-reported emotion dysregulation on IPA during pregnancy indicated a non-significant main effect of the actor's self-reported emotion dysregulation [$B = .030$ $p = .072$, 95% confidence interval (CI) (.997, 1.065)] and a non-significant main effect of the partner's self-reported emotion dysregulation [$B = .023$, $p = .157$, 95% CI (.991, 1.057)]. However, there was a significant main effect of gender [$B = 1.443$, $p = .014$, 95% CI (1.349, 13.293)] such that MOBs had 4.23 higher odds of aggressing than FOBs. In other words, the probability of MOBs aggressing was 19.2% and the probability of FOBs aggressing was 5.3%.

Step 2 of the APIM, to assess Aim 1c for interaction effects, indicated no significant actor X partner interaction [$B = -.001$, $p = .524$, CI (.999, 1.001)], no significant actor X gender interaction [$B = .045$, $p = .242$, CI (.944, 1.015)] and no significant partner X gender interaction [$B = -.036$, $p = .321$, CI (.987, 1.050)].

Additional APIMs were conducted to assess the final exploratory aim for actor and partner effects of DERS subscales and aggression during pregnancy (Table 4). The following subscales had non-significant actor and partner effects: nonacceptance of emotional reactions [actor: $B = .045$, $p = .483$, CI (.922, 1.187); partner: $B = .071$, $p = .283$, CI (.942, 1.223)], difficulty engaging in goal directed behavior when upset [actor: $B = .094$, $p = .174$, CI (.959, 1.259); partner: $B = .024$, $p = .717$, CI (.896, 1.172)], limited awareness of emotional reactions [actor: $B = .000$, $p = .998$, CI (.848, 1.179); partner: $B = .095$, $p = .262$, CI (.931, 1.298)], lack of access to effective emotion regulation strategies

[actor: $B = .111$, $p = .068$, CI (.991, 1.259); partner: $B = .027$, $p = .633$, CI (.918, 1.151)], and limited clarity of emotional reactions [actor: $B = .170$, $p = .114$, CI (.959, 1.464); partner: $B = .126$, $p = .232$, CI (.921, 1.398)]. For all of the subscale models, there remained a significant main effect of gender that followed the same pattern found in the total DERS model: MOBs were significantly more likely to aggress than FOBs.

The only subscale with significant effects on IPA was difficulties with impulsive behavior when upset, hereafter referred to as impulse control difficulties. There was a significant main effect of the actor's self-reported impulse control difficulties [$B = .195$, $p = .013$, CI (1.043, 1.418)] and the partner's self-reported impulse control difficulties [$B = .156$, $p = .035$, CI (1.011, 1.351)] on the actor's aggression during pregnancy. Gender was also significant in this model [$B = 1.409$, $p = .017$, CI (1.297, 12.901)]. Please see Figures 1a and 1b for graphs depicting MOBs' and FOBs' probabilities of aggressing at different levels of actor-self-reported (Figure 1a) and partner-self-reported (Figure 1b) impulse control difficulties. At average levels of actor-self-reported impulse control difficulties, the probability of MOBs aggressing was 19.1% and the probability of FOBs aggressing was 5.5%. At actor-self-reported impulse control difficulties one standard deviation above the mean, the probability of MOBs aggressing was 38.6% and the probability of FOBs aggressing was 13.3%. As the level of actor-self-reported impulse control difficulties increased, the probability of MOBs aggressing continued to increase at a faster rate than the probability of FOBs aggressing. For example, at actor-self-reported impulse control difficulties three standard deviations above the mean, the probability of MOBs aggressing was 81.6% while the probability of FOBs aggressing was 52.1%.

A similar pattern was seen for the main effect of partner-self-reported impulse control difficulties. At average levels of partner-self-reported impulse control difficulties, the probability of MOBs aggressing was 19.1% and the probability of FOBs aggressing was 5.5%. At partner-self-reported impulse control difficulties one standard deviation above the mean, the probability of MOBs aggressing was 34.0% and the probability of FOBs aggressing was 11.2%. As the level of partner-self-reported impulse control difficulties increased, the probability of MOBs aggressing continued to increase at a faster rate than the probability of FOBs aggressing. For example, at partner-self-reported impulse control difficulties three standard deviations above the mean, the probability of MOBs aggressing was 71.0% and the probability of FOBs aggressing was 37.5%.

Aim 2: Associations Between Partner-Reported Emotion Dysregulation and IPA During Pregnancy

Please see Table 5 for all results for Aim 2. Step 1 of the APIM, to assess Aims 2a and 2b for actor and partner effects, indicated a non-significant main effect of actor emotion dysregulation reported by the partner [$B = .013$, $p = .083$, CI (.998, 1.029)], and a non-significant main effect of partner emotion dysregulation reported by the actor [$B = .014$, $p = .067$, CI (.999, 1.030)]. However, there was a significant main effect of gender [$B = .790$, $p = .021$, CI (1.128, 4.306)] that followed the same pattern of the main effect of gender in the Aim 1 model using self-reported DERS: MOBs were significantly more likely to aggress than FOBs. Specifically in this model, MOBs had 2.20 higher odds of aggressing than FOBs. In other words, in this model the probability of MOBs aggressing was 33.8% and the probability of FOBs aggressing was 18.8%.

Step 2 of the APIM, to assess Aim 2c for interaction effects, indicated no significant partner-reported actor dysregulation X actor-reported partner dysregulation interaction [B =.000, p = .928, CI (.998, 1.001)], no significant partner-reported actor dysregulation X gender interaction [B =.001, p = .969, CI (.943, 1.063)] and no significant actor-reported partner dysregulation X gender interaction [B =.022, p = .497, CI (.959, 1.090)].

Aim 3: Associations of Self-Reported and Partner-Reported Emotion Dysregulation

Pearson correlation analysis was used to assess the associations between actor-self-reported emotion dysregulation and partner report of actor emotion dysregulation. FOBs' reports of MOBs' emotion dysregulation were not significantly correlated with MOBs' self-reported emotion dysregulation (r = .110, p = .259). MOBs' reports of FOBs' emotion dysregulation were significantly moderately correlated with FOBs' self-reported emotion dysregulation (r = .310, p = .001). The variable for MOBs' reports of FOBs' emotion dysregulation contained two outliers, which, when removed from the sample, did not significantly affect the results of the correlation. Therefore, the results for the dataset including the outliers were presented.

Aim 4: Actor-Partner Reporting Differences in Emotion Dysregulation and IPA

MOB DERS Difference Score by Reporting Groups for MOB Aggression

The fourth aim was intended to examine whether differences in emotion dysregulation reporting between actor and partner correspond to differences in IPA reporting between actor and partner. See Table 6 for frequencies of DERS difference score groups for MOBs and FOBs. MOB DERS difference score groups were relatively evenly split, with 31 couples (27.4%) who agreed on MOBs' level of emotion

dysregulation (DERS difference scores between -10 and 10; hereafter referred to as MOB

and FOB agree on MOB), 44 couples (38.9%) in which MOBs' self-reported level of

emotion dysregulation was higher than FOBs' reports of their emotion dysregulation

(DERS difference score greater than 10; hereafter referred to as MOB self-report higher

than FOB), and 33 couples (29.2%) in which FOBs' reports of MOBs' emotion

dysregulation were higher than MOBs' self-reported level of emotion dysregulation

(DERS difference score less than -10; hereafter referred to as FOB higher than MOB self-

report).

     See Table 7 for frequencies of IPA reporting groups for MOB-on-FOB aggression

and FOB-on-MOB aggression. In terms of violence reporting groups for MOB-on-FOB

aggression, the majority of couples ($n = 70$, 61.9%) agreed that no MOB-on-FOB

aggression occurred in their relationship. There were 16 couples (14.2%) in which FOBs

reported being victimized by MOBs but MOBs did not report aggression, 15 couples

(13.3%) in which MOBs reported aggressing against FOBs but FOBs did not report

victimization, and 6 couples (5.3%) in which both MOBs and FOBs agreed that MOB-

on-FOB aggression occurred (i.e., FOBs reported victimization by MOBs *and* MOBs

reported aggressing against FOBs).

     See Table 8a for the cross tabulation of MOB DERS difference score groups and

IPA reporting groups for MOB-on-FOB aggression. The couples who agreed that no

MOB-on-FOB aggression occurred during pregnancy were relatively evenly split across

MOB DERS difference score groups (MOB and FOB agree on MOB's DERS = 22,

MOB self-report higher than FOB = 26, FOB higher than MOB self-report = 21). For the

16 couples in which FOBs reported being victimized by MOBs, most ($n = 9$) fell into the

"FOB higher than MOB self-report" difference score group in which FOBs reported a higher level of MOB emotion dysregulation than MOBs reported for themselves. For the 15 couples in which MOBs reported aggressing against FOBs, most ($n = 11$) fell into the "MOB self-report higher than FOB" difference score group in which MOBs self-reported higher levels of emotion dysregulation than FOBs reported of them. Finally, for the 6 couples in which MOBs and FOBs agreed that MOB-on-FOB aggression occurred, most ($n = 4$) fell into the "MOB and FOB agree on MOB" DERS difference score category in which MOBs and FOBs agreed on the level of MOBs' emotion dysregulation.

FOB DERS Difference Score by Reporting Groups for FOB Aggression

FOB DERS difference scores were relatively evenly split, with 33 couples (29.2%) who agreed on the level of FOB emotion dysregulation (hereafter referred to as MOB and FOB agree on FOB), 28 couples (24.8%) in which FOBs' self-reported levels of emotion dysregulation were higher than MOBs' reports of their emotion dysregulation (hereafter referred to as FOB self-report higher than MOB), and 47 couples (41.6%) in which MOBs' reports of FOBs' emotion dysregulation were higher than FOBs' self-reported levels of emotion dysregulation (hereafter referred to as MOB higher than FOB self-report; see Table 6).

Similar to the frequencies of MOB-on-FOB aggression, the majority of couples agreed that no FOB-on-MOB aggression occurred during pregnancy ($n = 84$, 74.3%). There were 8 couples (7.1%) in which MOBs reported being victimized by FOBs but FOBs did not report aggression, 13 couples (11.5%) in which FOBs reported aggressing against MOBs but MOBs did not report victimization, and 2 couples (1.8%) in which both MOBs and FOBs agreed that FOB-on-MOB aggression occurred (i.e., MOBs

reported victimization by FOBs *and* FOBs reported aggressing against MOBs; see Table 7).

See Table 8b for the cross tabulation of FOB DERS difference scores and IPA reporting groups for FOB aggression. The couples who agreed no FOB-on-MOB aggression occurred during pregnancy were relatively evenly split across FOB DERS difference score groups (FOB and MOB agree on FOB's DERS = 27, FOB self-report higher than MOB = 22, MOB higher than FOB self-report= 34). For the 8 couples in which MOBs reported victimization by FOBs, most ($n = 6$) fell into the "MOB higher than FOB self-report" FOB DERS difference score group in which MOBs reported higher levels of FOB emotion dysregulation than FOBs reported for themselves. For the 13 couples in which FOBs reported aggressing against MOBs, couples were evenly distributed across FOB DERS difference score groups (FOB and MOB agree on FOB = 5, FOB self-report higher than MOB = 4, MOB higher than FOB self-report = 4). Finally, for the 2 couples in which FOBs and MOBs agreed that FOBs aggressed, one couple fell into the "FOB and MOB agree on FOB" difference score group and the other couple fell into the "MOB higher than FOB self-report" difference score group.

Chapter 4: Discussion

This study addressed several gaps in the literature relevant to the link between emotion dysregulation and IPA by a) utilizing dyadic data to examine actor and partner effects of emotion dysregulation on IPA; b) examining these associations in an ethnically-diverse sample during pregnancy, a unique developmental transition in which IPA and emotion dysregulation are especially salient; and c) examining an individual's perception of their partner's emotion dysregulation as it relates to IPA reporting. The current study documented a range of IPA in this sample that included bidirectional aggression as well as aggression solely from FOBs and aggression solely from MOBs. Overall, the IPA behaviors endorsed in the sample tended to not be severe or injurious and therefore are better conceptualized as physical aggression rather than violence. This distinction is important but rarely made in research on intimate partner aggression and violence. Often, studies don't specify which aggressive or violent behaviors were most frequently endorsed in their sample, despite using the CTS and other IPV measures that assess a wide range of specific aggressive tactics utilized to resolve conflicts. This oversight hinders a nuanced understanding of the varied manifestations of aggression in couples and the factors that predict and maintain aggression or violence within romantic relationships.

Of note, the rate of MOB-on-FOB aggression (35.4%) was higher than the rate of FOB-on-MOB aggression (21.2%) and for about half of the couples endorsing MOB-on-

FOB aggression, the MOB was reportedly the sole aggressor. Furthermore, the rates of both MOB-on-FOB aggression and FOB-on-MOB aggression were higher than the rates found in the extant literature on IPV during pregnancy (Bailey, 2010; Hellmuth et al., 2013a; Mojahed et al., 2021; Narayan et al., 2017). This study utilized a measure of IPA that assessed a multitude of specific, discrete behaviors (e.g., "My partner twisted my arm or hair") rather than a global question (e.g., "Have you ever been abused by a romantic partner?"). This study also utilized in-person interviews to collect this data, a measurement technique found to result in higher prevalence rates of IPA (Bailey, 2010; Gazmararian et al., 1996), likely given participants' increased comfort level in disclosing IPA to someone with whom they have an opportunity to establish rapport. Furthermore, this study utilized maximum dyadic reporting by asking both members of the couple about the presence of IPA in their relationship and using the highest report of IPA across either member.

According to maximum dyadic reporting, this study found very low levels of agreement about IPA; out of the 44 couples in which aggression from either partner was endorsed, only 7 couples agreed that either MOB-on-FOB aggression or FOB-on-MOB aggression occurred. Out of the 20 couples in which bidirectional aggression was endorsed (i.e., both MOB and FOB aggressed and were victimized) only one couple agreed on the presence of both MOB-on-FOB aggression and FOB-on-MOB aggression. This observation, as discussed in more detail below, highlights that IPA may be a relationship issue that is difficult for both members of the couple to acknowledge. If only one person is asked about IPA, or if measurement relies on both members' agreement to consider it present, then many cases of IPA may be missed.

Aims 1 and 2: Associations Between Emotion Dysregulation and IPA During Pregnancy Using APIMs

The first aim was to examine the association between self-reported emotion dysregulation and IPA during pregnancy. The second aim was to examine whether an actor's emotion dysregulation reported by partner and/or a partner's emotion dysregulation reported by actor was associated with IPA during pregnancy. The results of the APIM model for Aim 1 did not support the first three hypotheses for Aim 1 because both the actor and partner effects, as well as their interaction effects, were non-significant. This stands in contrast to the literature on emotion dysregulation and IPA which consistently indicates a significant main effect of actor emotion dysregulation on IPA, although much of this research was done using single informants rather than dyadic data (Bliton et al., 2016; Shorey et al., 2011a; Watkins et al., 2016). Lee and colleagues (2020), who did use dyadic data in their study on emotion dysregulation and IPA, found that actor and partner effects varied based on gender and type of violence. For example, women's emotion dysregulation did not significantly affect their own or their partner's physical aggression (Lee et al., 2020). Here, the results of the APIM model for Aim 2 also indicated no significant actor or partner effects of partner-reported emotion dysregulation on aggression during pregnancy.

Although the actor and partner effects in the models for Aims 1 and 2 were nonsignificant, there was a significant main effect of gender in both models such that MOBs were more likely to aggress than FOBs. This difference was substantial, such that MOBs had 4.23 higher odds of aggression than FOBs in the Aim 1 model and 2.20 higher odds of aggression than FOBs in the Aim 2 model. Research on gender differences in

partner aggression during pregnancy is scarce, but the current main effect of gender parallels some of the literature on gender asymmetry of IPA outside of pregnancy which indicates that women are just as likely if not more likely than men to physically aggress (e.g., Desmarais et al., 2012). It is important to note that much of this research focuses on frequency of minor physical IPA and doesn't necessarily include an assessment of the consequences IPA, such as injury, which are more frequently sustained by women than by men (Hamberger et al., 2016).

In this sample of heterosexual pregnant couples, gender was essentially synonymous with pregnancy status, such that all women in this sample were pregnant and all men were not pregnant. Therefore, it is challenging to disentangle whether gender or pregnancy status explains the difference in likelihood of aggression between MOBs and FOBs found in this study. As an argument for the status of pregnancy rather than gender in accounting for the findings, it is possible that the psychological, neurobiological, and hormonal changes that occur during pregnancy may lead to increased emotional upheaval, mood changes, and vulnerability for psychopathology, which in turn may increase the likelihood that women may act or react aggressively (Slade et al., 2009; Tal et al., 2015). Additionally, it is possible that some men might be less likely to aggress against pregnant partners (either instigating it or reacting to it) because of the increased vulnerability of both the woman and the fetus (Bailey, 2010).

Aim 1 Subscale Exploration: Impulse Control Difficulties and IPA During Pregnancy

While there was no significant actor or partner effect of self-reported total DERS on IPA, there was a significant association between the DERS impulse control difficulties

subscale and aggression during pregnancy. Specifically, there was a significant main effect of actor self-reported impulse control difficulties, meaning that the actor's impulse control difficulties were related to their own aggression. That is, as the actor's level of impulse control difficulties increased, their likelihood of aggressing also increased. There was also a significant main effect of partner self-reported impulse control difficulties, meaning that the partner's impulse control difficulties were related to the actor's likelihood of aggressing. That is, as the partner's level of impulse control difficulties increased, the actor's likelihood of aggressing also increased.

This is one of the first studies to demonstrate actor and partner associations between impulse control difficulties and IPA during pregnancy using dyadic data. The actor effect found in this study parallels research on impulse control difficulties and IPA outside of pregnancy using both dyadic and single informant data (Bliton et al., 2016; Shorey et al., 2011a; Watkins et al., 2014). Importantly, this finding is specific to impulse control difficulties in the context of emotion dysregulation, that is, acting impulsively when experiencing difficult emotions, as opposed to being generally impulsive, a trait which captures risk taking, inattentiveness, lack of inhibition and other characteristics across contexts and emotions (Miller, Zeichner, & Wilson, 2012). This finding aligns with research (both that is dyadic and that uses single informants) that suggests that actor impulse control difficulties specifically in the context of emotion dysregulation, rather than general actor impulsivity more broadly, are more strongly associated with aggression (Derefinko et al., 2011; Miller et al., 2012).

The significant main effect of partner self-reported impulse control difficulties on actor aggression highlights the relational nature of emotion dysregulation. This finding is

consistent with the limited previous dyadic research on impulse control difficulties and IPA, which also indicate that increased partner impulse control difficulties are significantly associated with increased likelihood of actor IPA (e.g., Watkins et al., 2014). A partner who has impulse control difficulties when upset, for example, might behave in ways that are risky or threatening. This behavior, in turn, may incite a higher level of reactivity from the actor, inducing a cycle of escalating responses between actor and partner that culminates in actor aggression (Lee et al., 2020; Levenson et al., 2014). Furthermore, when a partner responds impulsively to difficult feelings, the partner's behavior might be hard for the actor to predict, which could be interpreted as threatening and lead the actor to escalate their response to include aggression (Levenson et al., 2014).

The probability of both MOBs and FOBs aggressing changed at different rates as impulse control difficulties increased (see Figures 1a & 1b). In particular, MOBs had a higher likelihood of aggressing against FOBs at average levels of actor and partner impulse control difficulties. MOBs' probability of aggressing also increased at a faster rate than FOBs' probability as impulse control difficulties increased. This suggests that impulse control difficulties, both at the actor and partner level, may impact MOBs' aggressive behavior more than FOBs' aggressive behavior, particularly when actor or partner impulse control difficulties are high. Overall, the current study extends the literature on the link between impulse control difficulties and IPA by using dyadic data in a pregnancy sample, demonstrating that actor and partner impulse control difficulties are uniquely associated with aggression during pregnancy and might be especially predictive of pregnant women's aggression.

Aim 3: Associations of Self-Reported and Partner-Reported Emotion Dysregulation

The third aim was to examine the association of partner emotion dysregulation reported by the actor with the partner's self-report of their own emotion dysregulation through correlational analysis. FOBs' reports of MOBs' emotion dysregulation was not significantly correlated with MOBs' self-reported emotion dysregulation, while MOBs' reports of FOBs' emotion dysregulation was significantly correlated with FOBs' self-reported emotion dysregulation. In other words, MOBs' perception of FOBs' emotion dysregulation was more strongly aligned with FOBs self-perception than FOBs' perception of MOBs' emotion dysregulation was with MOBs' self-perception. This partially supports the hypothesis for Aim 3, which predicted that both MOBs' and FOBs' reports of their partners' emotion dysregulation would be moderately significantly associated with their partners' self-report. This finding also partially aligns with previous limited research on perception of partner emotion dysregulation, which indicates that an individual's perception of their partner's emotion dysregulation is low to moderately correlated with their partner's self-reported emotion dysregulation (Eldesouky et al., 2017; Impett et al., 2014).

The biological, hormonal, and psychological changes taking place during pregnancy that can result in increased emotion dysregulation might explain why, in this sample, FOBs didn't perceive MOBs' emotion dysregulation as MOBs perceived themselves (Kim, 2016; Tal et al., 2015). If an MOB's emotional responses change during pregnancy, it may feel harder for the FOB to predict, or these changes be harder for the MOB to identify herself, resulting in discordance between the two perceptions. Additionally, for 44 couples (38.9%) in this sample, FOBs reported lower emotion

dysregulation than MOBs reported for themselves (the largest of the 3 DERs differences score groups for MOB emotion dysregulation; see Table 6), suggesting that perhaps FOBs are positively biased towards their pregnant partners during pregnancy (i.e., reporting less dysregulation than MOBs are exhibiting). Future studies should explore associations between partners' reports of actors' emotion dysregulation and actors' self-reports outside of the pregnancy period to elucidate whether pregnancy specific changes in emotion dysregulation explain the discordance between FOBs' reports on MOBs' emotion dysregulation and MOBs' self-reports. Furthermore, additional research should examine potential biases (e.g., minimization, projection) at play during the pregnancy period that may prevent FOBs' perceptions of MOBs' emotion dysregulation from aligning with the MOBs' self-perceptions.

Aim 4: Actor-Partner Reporting Differences in Emotion Dysregulation and IPA

IPA Reporting Groups

Aim 4 was to assess how differences in emotion dysregulation correspond to differences in IPA reporting. As noted above, very few couples agreed that aggression occurred in their relationship: out of the 40 couples in which MOB-on-FOB aggression was endorsed, only 6 couples agreed that it occurred (i.e., MOB reported aggression *and* FOB reported victimization). Out of the 24 couples that endorsed FOB-on-MOB aggression, only 2 agreed that it occurred (i.e., FOB reported aggression *and* MOB reported victimization). This lack of agreement is consistent with previous literature on couple discordance of IPA reporting (Bates, 2010; Neal & Edwards, 2016) and underscores the necessity of utilizing dyadic data in studying IPA to get as much information as possible about whether IPA occurred. For example, if this study had only

relied on MOB report (and not asked FOBs for their reports), 16 couples in which MOB-on-FOB aggression occurred and 13 in which FOB-on-MOB aggression occurred (more than half of the couples who endorsed FOB-on-MOB aggression in this sample) would have been missed and coded as couples in which IPA *did not occur during pregnancy*. Moreover, the current findings also suggest that FOBs were willing to disclose their own aggression as well as the victimization they experienced from MOBs, and they were often the only ones to report aggression occurring in the relationship. FOBs' reports of IPA during pregnancy could therefore be an essential source of information for identifying couples who are at risk for or currently engaging in IPA during pregnancy.

It is important to note that all findings in this study are contingent on the assumption that using reports of IPA from both members of the couple is a more accurate strategy than only using one person's report. Further, maximum dyadic reporting assumes that using the highest report of IPA across either member of the couple is more accurate than requiring that both partners endorse aggression (Neal & Edwards, 2016). The prevailing explanation behind this observation is that individuals would have more incentive to deny IPA that is occurring in their relationship (to give a false negative, that is, to minimize something negative that is actually happening) than to endorse IPA that is *not* occurring (to give a false positive, to report that something negative is occurring when it is not actually happening; O'Leary & Williams, 2006). As such, an alternative method when utilizing dyadic data would be to define IPA as occurring only when both partners endorse it. If this method had been used in the current study, it would have identified only 6 couples (5.3%) engaging in MOB-on-FOB aggression and only 2 couples (1.8%) engaging in FOB-on-MOB aggression, which are not realistic estimates

based on previous literature on the prevalence of IPA during pregnancy (Gazmararian et al., 1996; Hellmuth et al., 2013a; Mojahed et al., 2021; Narayan et al., 2017).

DERS Difference Scores

The DERS differences scores were relatively evenly distributed for both MOBs and FOBs, although for both sets of DERS difference scores, the largest group was the "MOB higher than FOB" group. In other words, for MOB DERS difference scores, most MOBs self-reported higher emotion dysregulation than FOBs reported for MOBs ($n = 44$, 38.9%) and for FOB DERS difference scores, most MOBs reported higher FOB emotion dysregulation than FOBs self-reported ($n = 47$, 41.6%). This suggests that MOBs reported higher emotion dysregulation for both themselves and their partners than FOBs reported for MOBs or for themselves.

DERS Difference Score Groups by IPA Reporting Groups

Given the substantial disagreement between partners about the presence of IPA, it is difficult to examine whether less agreement on the DERS corresponded to less agreement on IPA reporting. Overall, the qualitative findings from the cross tabulation suggest a pattern in which the individual who reported MOB-on-FOB aggression was more likely to report higher levels of the MOB's emotion dysregulation. For example, for most of the couples (nine out of 16) in which FOBs were the sole reporters of MOB-on-FOB aggression, FOBs also rated MOBs' emotion dysregulation as higher than MOBs' self-reports. In other words, most FOBs who reported being victimized by MOBs also reported MOBs as having higher levels of emotion dysregulation. A similar pattern was seen for couples in which MOBs reported aggression, but FOBs did not report victimization: for most of these couples (11 out of 15), MOBs self-reported higher

emotion dysregulation than FOBs reported for them. In other words, most MOBs who reported aggressing against FOBs also self-reported higher levels of emotion dysregulation. Finally, most (four out of six) of the couples who agreed that MOB-on-FOB aggression occurred also agreed on MOBs' levels of emotion dysregulation. For FOB-on-MOB aggression, however, only couples in which MOBs were the sole reporter of FOB-on-MOB aggression followed this pattern: for most of these couples (six out of eight), MOBs also rated FOBs' emotion dysregulation as higher than FOBs' self-reported emotion dysregulation. In other words, most MOBs who reported being victimized by FOBs also reported higher levels of FOBs' emotion dysregulation. Further research with greater cell sizes is needed to elucidate how reporting on emotion dysregulation corresponds to reporting on IPA during pregnancy.

Clinical Implications

The results of this study are relevant to clinical work with pregnant couples, especially since pregnancy is a time of increased contact with healthcare providers (Deshpande & Lewis-O'Connor, 2013). Impulse control difficulties could function as a treatment target that could be used to help couples manage conflicts without aggressing against one another. It is important to note that couples interventions are not appropriate for all couples engaging in aggression or violence, especially violence that involves coercive controlling tactics or severe violent acts including use of a weapon, battering, or injury. At the same time, for couples at risk for, or currently engaging in situational aggression that involves mild aggressive acts (e.g., pushing or grabbing), interventions focused on identifying and reducing impulsive responses to difficult emotions while increasing the use of positive emotion regulation strategies (e.g., cognitive reappraisal)

could support couples in managing conflict without aggression. In fact, there is growing support for the use of couples interventions that focus on changeable relationship factors to reduce and eliminate reciprocal or situational IPA (Armenti & Babcock, 2016).

Findings are also relevant to screening and assessment to identify couples at risk for or currently engaging in IPA during pregnancy. Assessing for self-reported actor and partner impulse control difficulties in addition to IPA screening could help providers identify couples at risk for or engaging in IPA during pregnancy, given that underreporting of IPA, as well as lack of agreement that IPA is occurring, are seemingly common phenomenon.

Strengths and Limitations

This study is one of the first to elucidate the association between emotion dysregulation, particularly impulse control difficulties, and IPA during pregnancy using dyadic data. The use of dyadic data allowed for a deeper understanding of the complex relational nature of IPA and emotion dysregulation, particularly an individual's perception of their partner's emotion dysregulation, which is an understudied phenomenon. Furthermore, the lack of agreement in reporting IPA underscores the necessity of collecting data from both partners. An additional strength was the focus on the pregnancy period, which allowed for the examination of IPA during a unique developmental transition with significant consequences for the intergenerational transmission of family adversity. Finally, all associations were examined in an ethnically-diverse sample, expanding a literature that often utilizes White, college-age samples.

This study also had limitations. Although the CTS-2 captured type and severity of aggression, it did not capture frequency of aggressive acts or other contextual details such

as which partner typically initiates aggressive acts, which may be important for contextualizing a couple's experience of IPA. In addition, all data were collected cross-sectionally, so there may be alternative explanations for findings. For example, while actor or partner impulse control difficulties may predict IPA through inciting greater reactivity from the other member of the couple, which may escalate to aggression, IPA may also predict impulse control difficulties by inciting rash behavior in response to aggression. Prospective studies are needed to elucidate the directionality of this association. While the study sample was ethnically diverse, it included low-income pregnant women from only one metropolitan area in the U.S., so the results may not generalize to other samples or geographic regions. The sample also included couples in which both members participated in the study and were involved in the pregnancy, and in which more mild acts of aggression were most frequently occurring, rather than severe violence and/or coercive controlling behaviors, all of which could also impact generalizability of findings. Finally, this study relied on maximum dyadic reporting and related assumptions that affected the interpretations of all study findings. Thus, these findings should be replicated in other samples that use maximum dyadic reporting as well as other data aggregation decisions in identifying the presence of IPA within couples.

Future Directions and Conclusions

A main finding was that both actor and partner emotion dysregulation facets involving impulse control difficulties are significantly related to an actor's aggression during pregnancy, underscoring the importance of studying both emotion dysregulation and IPA as relational phenomena. Future dyadic research should build on this finding by studying the association between impulse control difficulties and other IPA-related

factors including additional types of IPA (e.g., psychological) or frequency of IPA occurrence. With additional research, actor and partner impulse control difficulties, as well as perception of partner emotion dysregulation, can be utilized to enhance screening and treatment efforts for couples at risk for or engaging in IPA during pregnancy to give families the healthiest possible start before babies are born.

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Appendix A

Table 1.

Frequencies of Physical Aggression Items Reported on the CTS-2 During Pregnancy

Physical Victimization Frequencies	N	%	Physical Aggression Frequencies	N	%
A partner grabbed me.	10	4.4	I pushed or shoved a partner.	17	7.5
A partner pushed or shoved me.	8	3.5	I slapped a partner.	7	3.1
A partner threw something at me that could hurt.	8	3.5	I grabbed a partner.	6	2.7
A partner slapped me.	3	1.3	I threw something at a partner that could hurt.	6	2.7
I had a sprain, bruise or small cut because of a fight with a partner.	2	.9	I slammed a partner against a wall.	3	1.3
A partner punched or hit me with something that could hurt.	2	.9	I punched or hit a partner with something that could hurt.	2	.9
A partner slammed me against a wall.	1	.4	I beat up a partner.	1	.4
A partner twisted my arm or hair.	1	.4	A partner had a sprain, bruise or small cut because of a fight with me.	1	.4
I went to the doctor because of a fight with a partner.	1	.4	I twisted a partner's arm or hair.	0	0
A partner used a knife or gun on me.	0	0	I used a knife or gun on a partner.	0	0
A partner choked me.	0	0	I choked a partner.	0	0
I needed to see a doctor because of a fight with a partner, but I didn't.	0	0	A partner needed to see a doctor because of a fight with me, but didn't.	0	0
I passed out from being hit on the head by a partner in a fight.	0	0	A partner passed out from being hit on the head in a fight with me.	0	0
A partner beat me up.	0	0	A partner went to the doctor because of a fight with me.	0	0
I had a broken bone from a fight with a partner.	0	0	A partner had a broken bone from a fight with me.	0	0
A partner burned or scalded me on purpose.	0	0	I burned or scaled a partner on purpose.	0	0
I felt physical pain that still hurt the next day from a fight with a partner.	0	0	A partner still felt physical pain the next day because of a fight we had.	0	0
A partner kicked me.	0	0	I kicked a partner.	0	0

Note. This table is specific to items occurring during pregnancy involving MOB or FOB.

Table 2.

Frequencies of Sexual Aggression Items Reported on the CTS-2 During Pregnancy

Sexual Victimization Frequencies	N	%	Sexual Aggression Frequencies	N	%
A partner insisted on sex when I did not want to (but did not use physical force).	14	6.2	I insisted on sex when a partner did not want to (but did not use physical force).	11	4.9
A partner made me have sex without a condom.	9	4.0	I made a partner have sex without a condom.	7	3.1
A partner insisted I have oral or anal sex (but did not use physical force).	4	1.8	I insisted a partner have oral or anal sex (but did not use physical force).	2	.9
A partner used force (hitting, holding down, using a weapon) to make me have oral or anal sex.	0	0	I used force (hitting, holding down, using a weapon) to make a partner have oral or anal sex.	0	0
A partner used force (hitting, holding down, using a weapon) to make me have sex.	0	0	I used force (hitting, holding down, using a weapon) to make a partner have sex.	0	0
A partner used threats to make me have oral or anal sex.	0	0	I used threats to make a partner have oral or anal sex.	0	0
A partner used threats to make me have sex.	0	0	I used threats to make a partner have sex.	0	0

Note. This table is specific to items occurring during pregnancy involving MOB or FOB.

Table 3.
Descriptive Statistics of DERS Variables

	N	Mean	Standard Deviation	Minimum	Maximum
DERS Self-Report Totals					
DERS total self-report (total sample)	221	72.05	22.84	36	138
MOB DERS total self-report	112	77.23	24.00	36	138
FOB DERS total self-report	109	66.72	20.35	36	116
DERS Report on Partner Totals					
DERS total report on partner (total sample)	221	73.65	24.41	36	145
MOB's report of FOB's total DERS	112	73.57	25.12	36	145
FOB's report of MOB's total DERS	109	73.73	23.79	36	129
DERS Self-Report Subscales					
Difficulty engaging in goal-directed bx when upset	221	12.06	5.34	5	25
Impulse control difficulties	221	11.14	5.07	6	28
Lack of emotional awareness	221	12.77	4.42	6	27
Limited access to emotion regulation strategies	221	15.23	6.58	7	38
Lack of emotional clarity	221	8.91	3.46	5	21
Nonacceptance of emotional responses	221	11.94	5.80	5	29

Note. Bx = behavior

71

Table 4.

Aim 1: Associations Between Self-Reported Emotion Dysregulation and IPA During Pregnancy Using APIMs

Model	Step	Predictors	*B*	*SE*	*p*	*OR*	95% CI
Total DERS	1	Actor self-reported total DERS	.030	.017	.072	1.031	.997 - 1.065
		Partner self-reported total DERS	.023	.016	.157	1.023	.991-1.057
		Gender	1.443*	.577	.014	4.234	1.349 – 13.293
	2	Actor self-reported DERS X partner self-reported DERS	-.001	.001	.524	.999	.999 – 1.001
		Actor self-reported total DERS X gender	.045	.038	.242	.956	.944 – 1.015
		Partner self-reported total DERS X gender	-.036	.001	.321	1.036	.987 – 1.050
Impulse Control Difficulties	1	Actor self-reported impulse control difficulties	.195*	.077	.013	1.216	1.043 – 1.418
		Partner self-reported impulse control difficulties	.156*	.073	.035	1.169	1.011 – 1.351
		Gender	1.409*	.579	.017	4.091	1.297 – 12.901
Nonacceptance of Emotional Reactions	1	Actor self-reported nonacceptance of reactions	.045	.064	.483	1.046	.922 – 1.187
		Partner self-reported nonacceptance of reactions	.071	.066	.283	1.074	.942 – 1.223
		Gender	1.62**	.601	.008	5.030	1.528 – 16.565
Difficulty Engaging in Goal Directed Behavior When Upset	1	Actor self-reported difficulty with goal directed bx	.094	.069	.174	1.099	.959 – 1.259
		Partner self-reported difficulty with goal directed bx	.024	.068	.717	1.025	.896 – 1.172
		Gender	1.40*	.564	.015	4.051	1.324 – 12.397
Limited Awareness of Emotional Reactions	1	Actor self-reported limited awareness of reactions	.000	.083	.998	1.000	.848 – 1.179
		Partner self-reported limited awareness of reactions	.095	.084	.262	1.099	.931 – 1.298
		Gender	1.47*	.557	.010	4.346	1.438 – 13.131
Lack of Access to Effective Emotion Regulation Strategies	1	Actor self-reported lack of access to strategies	.111	.060	.068	1.117	.991 – 1.259
		Partner self-reported lack of access to strategies	.027	.057	.633	1.028	.918 – 1.151
		Gender	1.26*	.580	.032	3.519	1.114 – 11.114
Limited Clarity of Emotional Reactions	1	Actor self-reported limited clarity	.170	.107	.114	1.185	.959 – 1.464
		Partner self-reported limited clarity	.126	.105	.232	1.135	.921 – 1.398
		Gender	1.487**	.559	.009	4.426	1.459 – 13.424

Table 5.

Aim 2: Associations Between Partner-Reported Emotion Dysregulation and IPA During Pregnancy Using APIMs

Model	Step	Predictors	B	SE	p	OR	95% CI
Total	1	Actor emotion dysregulation reported by partner	.013	.008	.083	1.013	.998 – 1.029
DERS		Partner emotion dysregulation reported by actor	.014	.008	.067	1.014	.999 – 1.030
		Gender	.790*	.338	.021	2.204	1.128 – 4.306
	2	Actor emotion dysreg rep by partner X Partner emotion dysreg rep by actor	.000	.001	.928	1.000	.998 – 1.001
		Actor emotion dysreg rep by partner X Gender	.001	.030	.969	1.001	.943 – 1.063
		Partner emotion dysreg rep by actor X Gender	.022	.032	.497	1.022	.959 – 1.090

Note. Dysreg = Dysregulation; Rep = Reported

* *p* < .05

73

Table 6.
Frequency of DERS Difference Score Groups

MOB DERS Difference Score	Frequency	Percent (%)
0 – MOB and FOB agree on MOB	31	27.4
1 – MOB self-report higher than FOB	44	38.9
2 – FOB higher than MOB self-report	33	29.2
FOB DERS Difference Score	**Frequency**	**Percent (%)**
0 – FOB and MOB agree on FOB	33	29.2
1 – FOB self-report higher than MOB	28	24.8
2 – MOB higher than FOB self-report	47	41.6

Table 7.
IPA Reporting Group Frequencies

MOB-on-FOB Aggression	Frequency	Percent (%)
0 – Neither partner reported MOB aggression	70	61.9
1 – FOB reported victimization by MOB	16	14.2
2 – MOB reported aggression towards FOB	15	13.3
3 – MOB reported aggression and FOB reported victimization	6	5.3
FOB-on-MOB Aggression	**Frequency**	**Percent (%)**
0 – Neither partner reported FOB aggression	84	74.3
1 – MOB reported victimization by FOB	8	7.1
2 – FOB reported aggression towards MOB	13	11.5
3 – FOB reported aggression and MOB reported victimization	2	1.8

Table 8a.

Cross Tabulation of MOB DERS Difference Scores by Reporting Groups for MOB Aggression

MOB DERS Difference Score	MOB-on-FOB Violence				Total
	0-Neither partner reported MOB aggression	1-FOB reported victimization by MOB	2-MOB reported aggression towards FOB	3-FOB reported victimization and MOB reported aggression	
0-MOB and FOB agree on MOB	22	3	1	4	30
1-MOB self-report higher than FOB	26	4	11	2	43
2-FOB higher than MOB self-report	21	9	3	0	33
Total	69	16	15	6	106

Note. 40 total couples endorsed MOB-on-FOB aggression but three couples' data are missing from the reporting groups because one of the partners' data was missing, so reporting patterns could not be determined for those couples.

Key: MOB DERS Difference Score (MOB self-report versus FOB report on MOB):
0 = Both partners agree on MOB's DERS score (Difference score is between -10 and 10)
1 = MOB's self-report is higher than FOB's report on MOB (MOB self-report - FOB report on MOB difference score > 10)
2 = FOB's report on MOB is higher than MOB's self-report (MOB self-report - FOB report on MOB difference score < -10)

Key: MOB-on FOB-Aggression
0 = Both partners agree that MOB did not aggress (FOB did not report victimization, MOB did not report aggression)
1 = FOB reported victimization by MOB but MOB did not report aggression towards FOB
2 = MOB reported aggression towards FOB but FOB did not report victimization by MOB
3 = Both partners agree that MOB aggressed (FOB reported victimization, MOB reported aggression)

Table 8b.

Cross Tabulation of FOB DERS Difference Scores by Reporting Groups for FOB Aggression

FOB DERS Difference Score	FOB-on-MOB Violence				
	0-Neither partner reported FOB aggression	**1-MOB reported victimization by FOB**	**2-FOB reported aggression towards MOB**	**3-MOB reported victimization and FOB reported aggression**	**Total**
0-FOB and MOB agree on FOB	27	0	5	1	33
1-FOB self-report higher than MOB	22	2	4	0	28
2-MOB higher than FOB self-report	34	6	4	1	45
Total	83	8	13	2	106

Note. 24 total couples endorsed FOB-on-MOB aggression, but one couple's data are missing from the reporting groups because one of the partners' data was missing, so reporting patterns could not be determined for that couple.

Key: FOB DERS Difference Score (FOB self-report versus MOB report on FOB):
0 = Both partners agree on FOB's DERS score (Difference score is between -10 and 10)
1 = FOB's self-report is higher than MOB's report on FOB (FOB self-report - MOB report on FOB difference score > 10)
2 = MOB's report on FOB is higher than FOB's self-report (FOB self-report - MOB report on FOB difference score < -10)

**Key: FOB-on-MOB Aggression**
0 = Both partners agree that FOB did not aggress (MOB did not report victimization, FOB did not report aggression)
1 = MOB reported victimization by FOB but FOB did not report aggression towards MOB
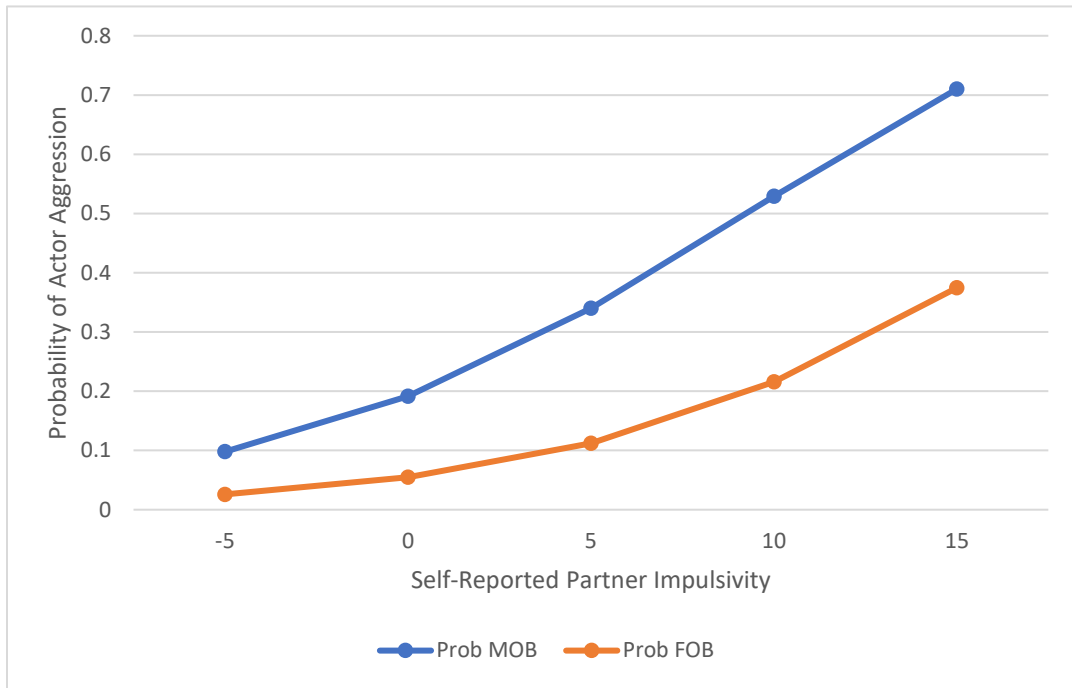2 = FOB reported aggression towards MOB but MOB did not report victimization by FOB
3 = Both partners agree that FOB aggressed (MOB reported victimization, FOB reported aggression)

Figure 1a. *Probability of Aggression by Self-Reported Actor Impulsivity*
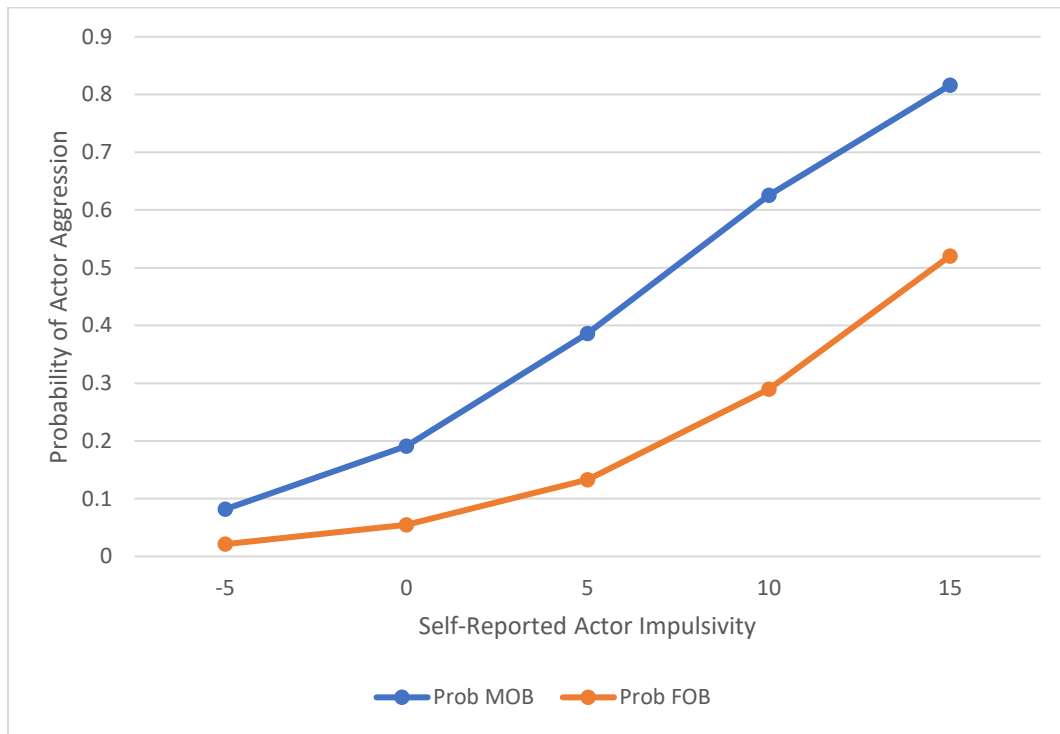
Note. Prob = Probability; MOB = Mother of baby; FOB = Father of baby

Figure 1b. *Probability of Aggression by Self-Reported Partner Impulsivity*

Note. Prob = Probability; MOB = Mother of baby; FOB = Father of baby