

Intimate Partner Violence and Positive Parenting Across Early Childhood: Comparing Self-Reported and Observed Parenting Behavior

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The current study examined self-reported and observed positive (i.e., nurturing, sensitive, and responsive) parenting behavior among women who experienced intimate partner violence (IPV) during pregnancy and through their early parenting years. Mother–child dyads were assessed during the third trimester of pregnancy and each year postpartum until age 4. Latent growth curve models of self-reported positive parenting suggested that IPV experienced during pregnancy was related to women reporting more gradual reductions in positive parenting between ages 1 and 4 and higher levels of positive parenting behavior at age 4. However, IPV experienced during pregnancy was associated with lower levels of observed positive parenting at age 4. These findings suggest that mothers who experience IPV during pregnancy may positively distort their perceptions of their positive parenting during early childhood, such that it is inconsistent with actual parenting behavior.

Keywords: intimate partner violence, positive parenting, pregnancy, parenting behavior

Intimate partner violence (IPV) is a common trauma experienced by families, particularly among those with young children (Holmes et al., 2018). IPV has well-documented negative associations with mothers' mental health (Pico-Alfonso et al., 2006), but it also affects the mother–child relationship and, thus, the developing child through its negative effects on maternal parenting (see Chiesa et al., 2018, for a meta-analysis). However, IPV victimization is not static and neither is parenting. IPV within a family may change over time as a result of multiple factors, including decreases in aggression as male partners age (Fritz & O'Leary, 2004) or when the woman changes romantic partners (Shott et al., 2012). Furthermore, women who report that they no longer experience IPV when their infants are young demonstrate positive changes in their parenting attitudes (i.e., representations) toward their children (Theran et al., 2005). In addition to changes in IPV experiences, parenting behaviors also shift and change over time as children develop and attain new emotional, cognitive, and physical capabilities (Bornstein et al.,

2008). Therefore, it is important for research to understand IPV as a force that may influence the typical developmental course of parenting behavior. In the present study, we examined how the trajectory of IPV victimization, beginning during pregnancy is associated with the trajectory of parenting behaviors across early childhood.

Several theories have been proposed to understand the relationship between women's IPV victimization and their parenting behavior. The ecological model of parenting (Belsky, 1984) suggests that the quality of the marital/partner relationship strongly influences the quality of parenting. Similarly, family systems theory suggests that negative valence in one relationship can affect and influence the quality of other family relationships resulting in a "spillover" effect (e.g., Erel & Burman, 1995; Margolin et al., 2004). In romantic relationships where IPV is present, the conflict may spill over to the parent–child relationship, negatively influencing parenting behavior through multiple mechanisms (Sears et al., 2016). For instance, the experience of IPV within the adult romantic relationship may inform expectations for the romantic relationship (i.e., for more conflict, mistrust, and discomfort in closeness) that inform expectations for the parent–child relationship (Levendosky et al., 2006, 2011). Second, the stress of the experience of IPV itself may spill over into the mother's capacity to parent more positively (Margolin & Gordis, 2003). A meta-analysis of 11 studies of IPV and both observed and self-reported positive parenting found that higher levels of IPV victimization were related to lower levels of positive parenting, defined differently across studies as parenting sensitivity, parental engagement, or parental positive emotions (Chiesa et al., 2018). This body of evidence suggests that IPV can bleed into the caregiving system to inform how parents interact with their children.

Extant literature that supports spillover theories of IPV and maternal parenting is mixed, though. Generally, IPV is associated with lower levels of both self-reported and observed maternal warmth and nurturance (e.g., Levendosky et al., 2006; Levendosky & Graham-Bermann, 2000;) and higher levels of self-reported and

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observed harsh parenting (e.g., Casanueva & Martin, 2007). Verbal and physical conflict within the partner relationship is also associated with disengaged maternal representations and more passive parenting (Sokolowski et al., 2007). However, other studies indicate that mothers experiencing IPV self-report higher levels of warmth and positive parenting (e.g., Lapierre, 2008; Levendosky et al., 2000), and at least one reports no differences between mothers who do and do not experience IPV (e.g., Gewirtz et al., 2011).

There are three limitations with the extant literature on IPV victimization and parenting. The first limitation is that the findings have used a variety of self-report or observational methods, without using both together to validate findings. Parenting researchers have questioned the validity of using parental self-report alone, suggesting that responses may be influenced by both systematic biases and social desirability (e.g., Morsbach & Prinz, 2006). In general, there is not a high agreement between self-report and other/observer reports of parenting (Schofield et al., 2016). IPV is a trauma that causes alterations in cognition and self-perception (Pill et al., 2017), thus potentially leading to less accurate reports of one's own behavior. Avoidance of negative emotions, a common trauma response, could lead women experiencing IPV to rate their parenting more positively. Additionally, one qualitative study found that women experiencing IPV were motivated to be good parents and felt that they had strategies to try to mitigate the harm of the violence to their children's well-being (Lapierre, 2008). Women may be motivated to report better parenting in order to appear to others that they are able to parent well in a stressful environment (Lapierre, 2008; O'Brien et al., 1994). The second concern for interpreting this literature is that these studies are primarily cross-sectional, thus they do not allow for examination of how the trajectory of IPV may influence the trajectory of parenting. A longitudinal study on children aged 2–3 years showed that IPV and parenting were negatively associated (Gustafsson et al., 2015). While this study had two assessments, these were only one year apart during a relatively limited phase of early development.

The third concern is that most studies of parenting in the context of IPV begin their assessments after childbirth. This is problematic because research indicates that parenting begins during pregnancy. Women begin to form their identities as mothers and develop expectations for the postpartum relationship with the child during this time (Ammaniti et al., 1992). These expectations and attitudes toward parenting during the prenatal period are associated with the way mothers parent their children postpartum (Dayton et al., 2010) and can be negatively affected by IPV (Huth-Bocks et al., 2004). More specifically, IPV experienced during pregnancy is associated with a greater risk for subsequent maternal child abuse (Casanueva & Martin, 2007; Chan et al., 2012) and lower quality maternal representations (Huth-Bocks et al., 2004). These findings suggest that maternal parenting may be particularly sensitive to IPV that occurs during pregnancy. However, many of the longitudinal studies cited above examined shorter-term (occurring in the first-year postpartum) rather than longer-term (occurring later in childhood) parenting outcomes, making it difficult to link IPV during pregnancy to the longer trajectory of parenting across early childhood. In the current study, we examine how the trajectory of IPV victimization, beginning during pregnancy, specifically relates to positive parenting.

Positive or nurturing parenting behaviors are defined as those behaviors that encourage exploration of the environment and

include the use of warmth, contingent responsiveness, and sensitivity (Fox, 1992; Lyons-Ruth & Block, 1996). Mothers high in positive parenting engage with their infants in a contingent manner, using comforting vocalizations toward the infant, touch, and positive displays of affect, thus facilitating the infant's need for exploration, safety, and emotional regulation (Bernier et al., 2016). Children are most dependent on their mothers during infancy and are highly sensitive to maternal responsive parenting (e.g., Bornstein & Tamis-LeMonda, 1989). As infants mature into toddlers, they develop more autonomy from their mothers. The increasing maturation of their emotion regulation system leads to more behavioral autonomy (Calkins et al., 1998; Perry et al., 2016), thus shifting parenting from primarily nurturing caregiving behaviors to include limit-setting. Several longitudinal studies find that positive parenting trajectories change across early childhood, but that these trajectories differ depending upon the risk. For example, sensitivity increased in low-risk (i.e., two-parent household, higher maternal education) mothers of infants from ages 3 to 7 months (Planalp et al., 2013) but decreased from 4 to 18 months in high-risk (i.e., low-income, presented at community clinics) mothers (Mitchell et al., 2019; Nuttall et al., 2015). Another study of low-risk mothers found that positive behavior increased over the preschool years (Célia et al., 2018). Finally, maternal abuse history predicted lower levels of positive parenting behavior during children's preschool years (Madigan et al., 2015). These studies suggest that risk generally predicts changes in positive parenting behavior and that significant experiences such as trauma and victimization predict less positive parenting.

The Present Study

Limitations in the current literature, including inconsistent results due to use of either self-reported or observed parenting measures, lack of longitudinal studies, and exclusion of pregnancy as a period that predicts later parenting behavior have made it difficult to interpret the relationships between IPV and positive parenting behavior early in the mother–child relationship. The present study aimed to resolve these limitations by examining IPV victimization across pregnancy and early childhood and parenting behavior across early childhood. An important strength of this study is that both self-reported and observed positive parenting were examined to determine potential differences in the impact of IPV on different measures of parenting.

We hypothesized that (a) the level of IPV victimization in pregnancy would predict the level of self-reported positive parenting at age 4 and changes in self-reported positive parenting from ages 1 to 4, and (b) changes in IPV victimization from pregnancy through child age 4 would predict the level of self-reported positive parenting at age 4 and changes in self-reported positive parenting from ages 1 to 4. Specifically, we expected that IPV would decrease from ages 1 through 4, as the stress of a new child and pregnancy on the household diminishes over time. There is disagreement in the literature on whether the pregnancy is a protective period for IPV; however, some international studies have found that IPV is stable pre- and postpartum, or that it decreases slightly over time (Bowen et al., 2005; Islam et al., 2021). We also expected that self-reported positive parenting would increase from ages 1 through 4 as mothers increase engagement with their children and scaffold their development and communication; similar to what previous

longitudinal studies of early parenting have identified (Célia et al., 2018), however, we predicted that higher IPV would be associated with lower self-reported positive parenting. Finally, we included observed parenting behavior at age 4 and hypothesized that level of IPV victimization in pregnancy and changes in IPV victimization from pregnancy through child age 4 would also predict parenting at age 4, such that higher IPV would be associated with lower levels of observed positive parenting, consistent with Levendosky and Graham-Bermann (2000).

Since parenting behavior is influenced by other sources of stress, including stress from socioeconomic factors (e.g., Hoff et al., 2002), monthly family income was included as a covariate in the model. In addition, maternal age has been associated with parenting behavior, such that older mothers tend to be more nurturing than younger mothers (Nuttall et al., 2015), so maternal age was also included as a covariate.

Method

Participants

Two hundred and six mother-child dyads participated in a longitudinal study that examined the influences of IPV victimization on women and their children from pregnancy through child age 10. This study was funded by the Centers for Disease Control (CDC) and the National Institute of Justice. All procedures and materials were approved by the Institutional Review Board of Michigan State University. The present study used data from pregnancy to child age 4, with data collection waves once during the 3rd trimester of pregnancy and yearly from child age 1 to age 4. Four mother-child dyads were removed from the final data set due to either parent or child death during the first 4 years of the study resulting in a final sample size of 202. By age 4, 177 dyads remained in the study, representing an attrition rate of 14%.

At recruitment, mothers had an average age of 25 years ($SD = 5$), an average monthly family income of \$1,823 ($SD = \$1,505$), and 64% were living with their partner. "Partner" was defined as a man with whom the woman had a romantic relationship for at least 6 weeks during pregnancy. More than half of participants year-to-year endorsed being in the same relationship as the previous year (74% at age 1, 67% at age 2, 63% at age 3: 63%, 57% at age 4). Sixty-three percent of participants identified themselves as White, 25% as Black/African American, 5% as Latina, 4% as Biracial, 1% as Native American, 1% as Asian American, and 1% as other. Forty-five percent of the women had a high school diploma or some high school education, 42% had some college education, and 13% had a bachelor's degree or a graduate degree.

Procedure

Pregnancy

Pregnant women were recruited through flyers posted in clinics, public spaces, and social service offices. Pregnant women were screened for eligibility, including, (a) third trimester of pregnancy, (b) between 18 and 40 years old, (c) in a heterosexual romantic relationship for at least 6 weeks, and (d) English fluency. Due to the project goal of understanding the effects of IPV during pregnancy on mothers and children, participants were oversampled for IPV, relative to the general population, by additionally screening for

IPV. This method was successful such that in the final sample, about half of the women reported experiencing IPV during their pregnancy. Participants were compensated with cash payment and provided with a list of community resources.

Child Ages 1–4

Women were contacted every 90 days to ensure that their contact information was up-to-date to limit attrition. In-person interviews took place around the children's 1st, 2nd, 3rd, and 4th birthdays. During these interviews, demographic, IPV, and maternal parenting self-report questionnaires were administered. At the age 4 interview, mothers were asked to engage in a free-play session with their child for 14 min. One-hundred and six mother-child pairs took part in the videotaped interactions. Following the visit, mothers were compensated with cash payment and provided with a list of community resources.

Measure

Intimate Partner Violence

Women were preliminarily assessed during the telephone screening using the *Conflict Tactics Scale (CTS; Straus, 1979)* to determine whether they had experienced IPV during pregnancy, at any prior time point, or not at all. Items on the CTS assess threats of harm or verbal abuse (e.g., "threatened with a knife or gun") as well as experiences of physical harm (e.g., "Kicked, bit, or hit with a fist") using the following 8-point scale: "1 *time in past year*," "2 *times in past year*," "3–5 *times in past year*," "6–10 *times in past year*," "11–20 *times in past year*," "more than 20 *times in past year*," "Not in the past year but it did happen before." In the current study, the internal consistency was .91. The study was enriched to include women who endorsed physical abuse on the CTS. Once women were enrolled in the study, the *Severity of Violence Against Women Scales (SVAWS; Marshall, 1992)* was administered to assess IPV. The SVAWS offered a more comprehensive assessment of different behaviors of IPV than the CTS. Women completed the SVAWS when they were pregnant and annually through ages 1–4. The SVAWS is a 46-item self-report questionnaire used to assess physical, emotional, and sexual violence. Participants rated their responses on a 4-point scale that ranged from "Never" to "Many Times." Items include "demanded sex whether you wanted to or not" and "punched you." Severity is commensurate with the frequency of experiences. Scores were summed at each time period to create a total IPV score for pregnancy, age 1, 2, 3, and 4. Internal consistencies for the five waves of data collection ranged from .94 to .95. Among women who endorsed IPV during pregnancy (excluding women who reported no IPV during that period), the average SVAWS score was 10.75 ($SD = 14.00$) with a range of 1–71.

Self-Reported Positive Maternal Parenting

The Parent Behavior Checklist (PBC; Fox, 1994) is a 100-item parenting measure for parents with children ages 1–4. Items are rated on a 4-point scale ranging from "Almost Never/Never" to "Almost Always/Always." The Nurturing subscale has questions that tap concepts such as facilitating self-regulation and growth (e.g., reading to a child, taking a child on walks), joy (e.g., playing with a child, enjoying child, a surprising child with fun), and responsivity

(e.g., holding a child when scared, helping a calm child when overactive, praising the child when they do well). Higher scores reflect more positive/nurturing parenting. Women completed the PBC annually through children ages 1–4. Internal consistency for the PBC items across the four waves of data collection ranged from .74 to .89.

Observed Positive Maternal Parenting

A revised version of the Eyberg Coding Manual (Robinson & Eyberg, 1981) was used to code maternal behaviors in a 14-min, videotaped play session between mothers and their 4-year-old children. Maternal codes were rated on 5-point scales (1 = *no behavior* to 5 = *intense behavior*), scored at 1-min intervals. The three maternal codes used were positive affect ($M = 2.62$, $SD = .48$), positive/neutral feedback ($M = 2.28$, $SD = .29$), and facilitating self-regulation ($M = 3.94$, $SD = .65$). These were defined as the following: Positive affect—laughing with the child; Positive/neutral feedback—praising child or responding without criticism to child's behavior/verbal expressions; Facilitation—supporting child's efforts to function competently and autonomously. Scores were then averaged across all of the intervals for each behavioral code. Twenty percent of the observations were double-coded; interrater reliabilities using weighted kappas for the codes range from .84 to .94.

Analytic Approach

Latent growth curve models (LGCMs; McArdle & Epstein, 1987) were used to assess the influence of IPV, both its intercept factor and its change factor (change over time from pregnancy through age 4) on self-reported parenting and on observed parenting at age 4. Data were modeled in Mplus (Mplus version 8.1, Muthén & Muthén, 2017). Missing data were handled using full-information maximum likelihood estimation (Enders & Bandalos, 2001). As suggested by Bollen and Curran (2006) for fitting conditional LGCMs, we used a model building approach in which univariate models were fit to represent change over time in each construct (IPV, self-reported positive parenting) prior to determining a change in parenting conditional upon IPV.

For the unconditional model of IPV, data were fit using zero-inflated Poisson (ZIP) models to account for zero-inflation because about half of the current sample was recruited as a no IPV comparison group. SVAWS scores at each wave of data collection found that less than half of the sample initially reported no experiences of IPV, and the proportion of nonendorsement or zero data generally increased over time (No IPV reported: 41% at pregnancy, 59% at age 1, 57% at age 2, 68% at age 3, 63%, at age 4). The ZIP distribution is a mixture of a Poisson distribution of count data with an excess of zero counts. The ZIP model is increasingly used in behavioral and health research to prevent biased estimation of parameters due to extra zeros, or a high proportion of nonevents, in count data (Lambert, 1992; Lee et al., 2006; Liu, 2007). These models assume that excess zeros are generated through a different process from the count data (i.e., a count value for a number of experiences of IPV, vs. a zero for no IPV experienced). Thus, these processes can be modeled independently in a Poisson count model as well as a logit model for predicting excess zeros. In this study, a ZIP model was employed within the growth curve model framework

to estimate a logit model (e.g., probability of not reporting any experiences of IPV at each wave of data collection) and count model (e.g., sum score of IPV experiences among mothers who reported them each year) of the IPV trajectory. The count model tests the study hypotheses as this model examines the influence of IPV and its change over time. We fit three models. The first was an intercept-only model with three parameters (intercept mean, intercept variance, and residual variance), in which the latent factor reflects the average level for the average individual over time. The second was a linear change model with six parameters (intercept and slope means, intercept and slope variances and their covariance, and residual variance), in which the intercept factor was centered at the prenatal assessment and the slope factor is interpreted as the annual rate of a linear change from the prenatal assessment to age 4 for the average individual and the third was a latent basis model that additionally estimated three basis coefficients in which the intercept factor was again centered at the prenatal assessment and the change factor reflected a total change in IPV from the prenatal assessment to age 4 for the average individual such that estimates of the basis coefficients reflect the percent-change at a given wave (Ram & Grimm, 2007). As suggested by Lambert (1992), the best-fitting ZIP models were selected based on Akaike's information criteria (AIC) and Schwarz's Bayesian information criterion (BIC) where lower values indicate better model fit.

For the unconditional model of self-reported parenting, we fit three models. The first was an intercept-only model with three parameters (intercept mean, intercept variance, and residual variance), in which the latent factor reflects the average level for the average individual over time. The second was a linear change model with six parameters (intercept and slope means, intercept and slope variances and their covariances, and residual variance), in which the intercept factor was centered at the age 4 assessment and the slope factor was interpreted as the annual rate of linear change between ages 1 and 4 for the average individual. The third was a latent basis model that additionally estimated two basis coefficients in which the intercept factor was again centered at the age 4 assessment and the change factor reflected a total change in self-reported positive parenting between ages 1 and 4 for the average individual such that estimates of the basis coefficients reflected the percent-change at a given wave (Ram & Grimm, 2007). Model fit was assessed with multiple indices, including χ^2 (Hu & Bentler, 1999), the comparative fit index and Tucker–Lewis fit index (CFI and TLI; Bentler, 1990), and root mean square error of approximation (RMSEA; Hu & Bentler, 1999). For CFI and TLI, values above .90, and for RMSEA, values below .08 were acceptable for model fit.

To test our hypotheses, we combined the selected LGCMs for IPV victimization and self-reported positive parenting described above along with a latent factor for observed parenting at child age four; this factor was indicated by positive affect, positive feedback, and facilitating self-regulation. It was identified by fixing the factor variance at 1 and estimating the loading for each indicator. The intercept and slope factors for self-reported parenting and the factor for age 4 observed parenting were regressed on the intercept and slope factors for IPV and two covariates: Maternal age and family income at the initial wave (pregnancy). The observed and self-reported parenting factors were allowed to covary. IPV intercept and slope factors were allowed to covary with the income and maternal age covariates.

Results

Descriptive statistics, sample size, and correlations among repeated study variables are presented in Table 1. Repeated measures for IPV victimization and self-reported positive parenting were positively correlated with themselves over time. Self-reported positive parenting behavior was sometimes positively correlated with IPV victimization over time. Maternal age was not associated with the level or slope of IPV victimization, observed parenting at age 4, or the level or slope of self-reported positive parenting behavior. Self-reported positive parenting behavior was also negatively associated with pregnancy income. Finally, IPV victimization over time and income at pregnancy were also negatively correlated.

Unconditional Models of IPV Victimization across Pregnancy and Early Childhood

For the IPV trajectory models, count data were fit using ZIP models. The logit model, which contained the no IPV or zero data for each year, was not examined due to convergence issues. Thus, the following analyses refer to only the count IPV (endorsing at least one item on the SVAWS) data for each year. AIC and BIC were smaller for the linear model (AIC = 4226.83, BIC = 4243.37) than for the intercept-only model (AIC = 4813.96, BIC = 4820.58). The AIC and BIC for the latent basis model (AIC = 4213.54, BIC = 4240.00) were smaller than for the linear model. Therefore, the latent basis model was selected. The average level of IPV victimization in pregnancy was estimated to be 1.25 (*SE* = 0.17, *p* < .001) and the estimated variation in the intercepts was 2.32 (*SE* = 0.21, *p* < .001). The average total IPV change from pregnancy to child age 4 was 0.75 (*SE* = 0.45, *p* = .09) and the estimated variation in the true change was 2.32 (*SE* = 0.21, *p* < .001). Estimates of latent basis coefficients were as follows: Age 1—0.30, *SE* = .09, *p* < .01, indicating that 30% of the decrease in IPV victimization occurred in the first year; 2—0.64, *SE* = 0.23, *p* < .01, and 34% of the decrease in IPV victimization occurred between ages 1 and 2; and at age 3—0.96, *SE* = 0.26, *p* < .01, indicating 32% of the decrease in IPV victimization occurred between ages 2 and 3. Very little change occurred between ages 3 and 4 (4% of the decrease). The estimated covariance between the intercept and change factors was 0.20 (*SE* = 0.27, *p* = .46), reflecting that initial levels of IPV victimization were not associated with changes in IPV victimization.

Unconditional Models of Self-Reported Positive Parenting

Change in self-reported positive parenting behavior from ages 1 to 4 was also tested in a series of LGCMs. Since both the no-growth ($\chi^2 = 80.20, df = 23, RMSEA = .12, CFI = .83, TLI = .84$) and linear models showed poor fit ($\chi^2 = 56.93, df = 23, RMSEA = .10, CFI = .90, TLI = .89$), a latent basis model with basis coefficients set to 1, freely estimated, and 0 was tested. This model demonstrated acceptable fit ($\chi^2 = 10.26, df = 6, RMSEA = .06, CFI = .99, TLI = .99$). The level of self-reported positive parenting behavior for the average individual at child age 4 was estimated to be 37.69 (*SE* = 0.67, *p* < .001), and the estimated variation in the intercepts was 57.65 (*SE* = 7.29, *p* < .001). The total change from child age 1 to 4 for the average individual was 5.12 (*SE* = 0.63, *p* < .001) and the estimated variation in the true change was 17.71

Table 1
Sample Descriptive Statistics

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|
| 1. Positive parenting (Age 1) | — | | | | | | | | | | | | | |
| 2. Positive parenting (Age 2) | .64** | — | | | | | | | | | | | | |
| 3. Positive parenting (Age 3) | .49** | .69** | — | | | | | | | | | | | |
| 4. Positive parenting (Age 4) | .50** | .63** | .66** | — | | | | | | | | | | |
| 5. IPV (Pregnancy) | .17* | .23** | .28** | .29** | — | | | | | | | | | |
| 6. IPV (Age 1) | 0.06 | 0.05 | .21** | 0.01 | .27** | — | | | | | | | | |
| 7. IPV (Age 2) | .17* | 0.11 | .23** | 0.09 | .39** | .31** | — | | | | | | | |
| 8. IPV (Age 3) | 0.08 | 0.14 | .18** | .18* | .34** | .22** | .30** | — | | | | | | |
| 9. IPV (Age 4) | .17* | .22** | .24** | .18* | .25** | .25** | .35** | .41** | — | | | | | |
| 10. Positive affect (Age 4) | -.30** | -.24** | -.28** | -.28** | -.20* | -.09 | -.19* | 0.04 | -.01 | — | | | | |
| 11. Positive feedback (Age 4) | -.013 | -.20* | -.30** | -.19* | -.26** | -.11 | -.16* | 0.00 | -.13 | .40** | — | | | |
| 12. Facilitates Self reg. (Age 4) | -.30** | -.33** | -.40** | -.28** | -.36** | -.16* | -.27** | -.09 | -.24** | .44** | — | | | |
| 13. Pregnancy family income | -.24** | -.30** | -.25** | -.31** | -.23** | -.08 | -.01 | -.15 | 0.04 | .16* | .27** | — | | |
| 14. Maternal age at pregnancy | -.07 | -.014 | -.06 | -.15* | -.12 | -.08 | 0.01 | 0.01 | -.12 | .17* | .17* | .21** | — | |
| Valid N | 184.00 | 182.00 | 175.00 | 175.00 | 202.00 | 186.00 | 183.00 | 162.00 | 176.00 | 160.00 | 160.00 | 160.00 | 201.00 | 202.00 |
| Mean | 42.83 | 38.13 | 37.30 | 37.26 | 6.34 | 6.37 | 4.09 | 3.33 | 3.60 | 2.62 | 2.28 | 3.95 | 1823.64 | 24.79 |
| SD | 8.50 | 9.37 | 9.36 | 8.78 | 12.02 | 15.52 | 11.31 | 9.38 | 10.50 | 0.48 | 0.29 | 0.65 | 1518.65 | 4.98 |
| Minimum | 25.00 | 20.00 | 20.00 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.57 | 1.50 | 2.14 | 0.00 | 17.00 |
| Maximum | 69.00 | 66.00 | 63.00 | 67.00 | 71.00 | 120.00 | 77.00 | 66.00 | 94.00 | 4.93 | 3.57 | 5.00 | 9500.00 | 40.00 |

Note. IPV = intimate partner violence.

($SE = 7.06, p < .05$); estimates of latent basis coefficients at ages 2 and 3 were not significant. Therefore, self-reported positive parenting behavior increased between ages 1 and 4 and there were significant between-person differences in increases over time. The estimated correlation between the intercept and change factors was $-.46$ ($SE = .11, p < .001$), reflecting that lesser increases in self-reported positive parenting were associated with greater levels of self-reported positive parenting at age 4.

The Influence of IPV Victimization Across Time on Self-Reported and Observed Parenting

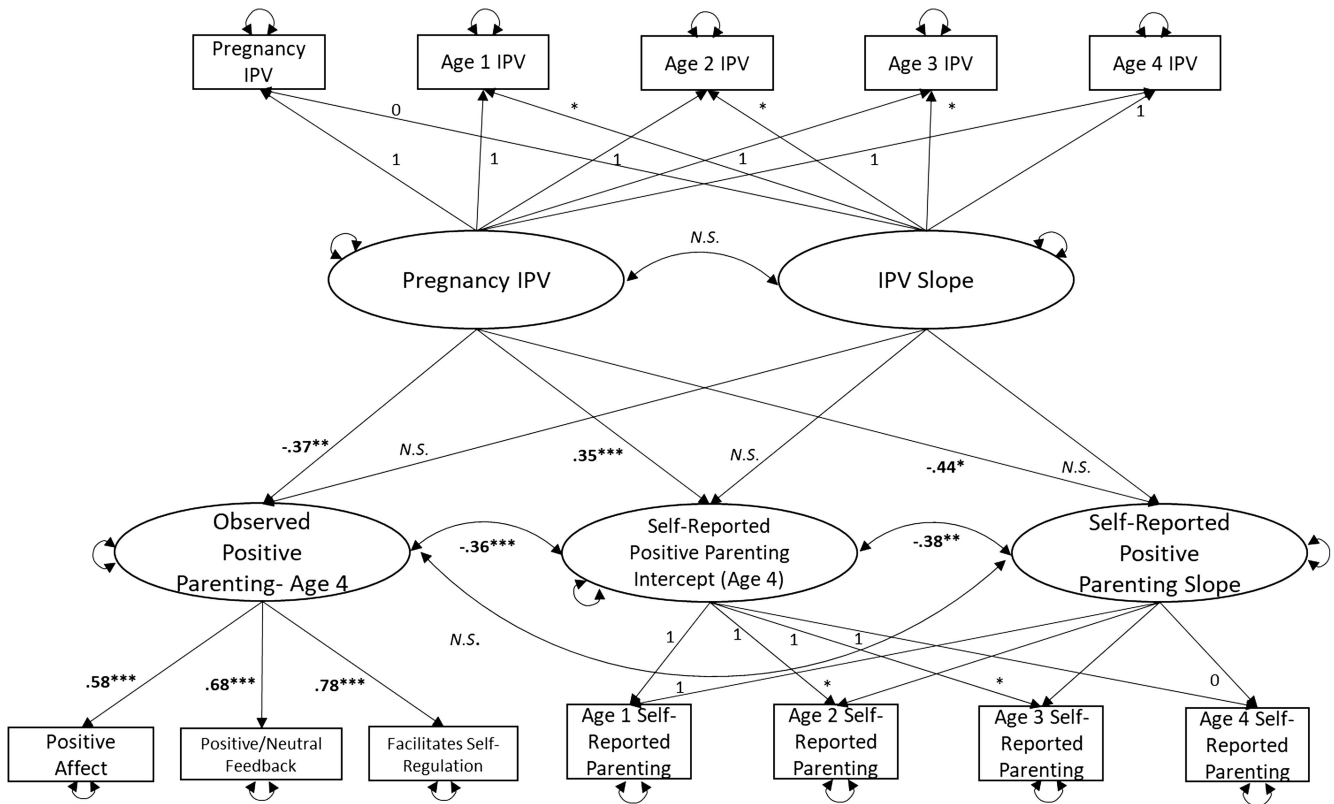
We tested associations between IPV victimization and parenting in a single, multivariate conditional model. The intercept and change factors of IPV were then included as predictors of intercept and

change factors of self-reported positive parenting and an observed parenting factor. Monthly family income and maternal age at pregnancy were included in the model as covariates. Maternal age and monthly income during pregnancy did not predict observed parenting at age 4 or the slope of self-reported parenting but did predict the intercept of self-reported positive parenting at age 4, suggesting that income during pregnancy is related to a mother's assessment of her positive parenting behaviors years later, but that this may not factor into observed behavior. Again, zero inflation in the estimates of IPV victimization at each wave of the study was accounted for in the ZIP LGCM of IPV. Thus, this model tested the influence of IPV victimization on self-reported and observed parenting only for women who experienced any IPV victimization between pregnancy and child age 4. See Table 2 for model results and a path diagram for this model in Figure 1. Higher levels of

Table 2
Unstandardized Estimates From the Final Model Used to Test Study Hypotheses

| Parameters | Estimate | Standard Error | <i>p</i> value |
|--|----------|----------------|----------------|
| Structural model | | | |
| IPV level → parenting level (age 4) | 1.54 | 0.47 | <.001 |
| IPV level → parenting change | -1.15 | 0.55 | <.01 |
| IPV level → observed parenting (age 4) | -0.27 | 0.10 | <.05 |
| IPV change → parenting level (age 4) | 0.31 | 0.41 | .45 |
| IPV change → parenting change | 0.31 | 0.35 | .38 |
| IPV change → observed parenting (age 4) | -0.08 | 0.09 | .39 |
| Parenting level with observed parenting | -2.34 | 0.71 | <.01 |
| Parenting change with observed parenting | 0.14 | 0.68 | .84 |
| Intimate partner violence (IPV; pregnancy to age 4) | | | |
| Level factor mean (pregnancy) | 1.14 | 0.16 | <.001 |
| Level factor variance | 2.49 | 0.37 | <.001 |
| Change factor mean | -0.79 | 0.24 | <.01 |
| Change factor variance | 4.06 | 1.75 | <.01 |
| 1 year basis coefficient | 0.34 | 0.05 | <.001 |
| 2 year basis coefficient | 0.69 | 0.19 | <.001 |
| 3 year basis coefficient | 1.03 | 0.23 | <.001 |
| Level and change covariance | 0.48 | 0.37 | .20 |
| Self-reported positive parenting (age 1 to 4) | | | |
| Level factor mean (age 4) | 38.00 | 2.19 | <.001 |
| Level factor residual variance | 44.81 | 6.19 | <.001 |
| Change factor mean | 5.97 | 3.17 | .06 |
| Change factor residual variance | 14.83 | 7.60 | .05 |
| 2 year basis coefficient | 0.14 | 0.10 | .17 |
| 3 year basis coefficient | -0.06 | 0.10 | .54 |
| Level and Change covariance | -9.86 | 4.64 | <.05 |
| Observed parenting (age 4) | | | |
| Positive affect loading | 0.24 | 0.06 | <.001 |
| Positive feedback loading | 0.17 | 0.03 | <.001 |
| Facilitating self-regulation loading | 0.44 | 0.06 | <.001 |
| Covariates (Income from pregnancy to age 4) | | | |
| Preg. income → parenting level (age 4) | -0.10 | 0.04 | <.05 |
| Preg. income → parenting change | -0.01 | 0.04 | .82 |
| Preg. income → observed parenting (age 4) | 0.01 | 0.01 | .33 |
| Maternal age → parenting level (age 4) | 0.004 | 0.11 | .97 |
| Maternal age → parenting change | 0.04 | 0.12 | .76 |
| Maternal age → observed parenting (age 4) | 0.03 | 0.03 | 0.31 |
| Preg. income and IPV level covariance | -9.38 | 2.63 | <.001 |
| Preg. income and IPV change covariance | -4.68 | 3.66 | .20 |
| Maternal age and IPV level covariance | -1.35 | .71 | .08 |
| Maternal age and IPV change covariance | -1.37 | 1.14 | .23 |
| Maternal age and preg. income covariance | 23.05 | 5.84 | <.001 |

Figure 1
 Path Model of the Standardized Estimates From the Model Used to Test IPV and Parenting Hypotheses



Note. Path model is not fully specified. Covariate effects of maternal age family monthly income in pregnancy are not included in the diagram for readability.
 * $p < .05$. ** $p < .01$. *** $p < .001$.

pregnancy IPV victimization were associated with higher self-reported positive parenting at age 4 and a shallower change in self-reported positive parenting over time. In contrast, higher levels of pregnancy IPV victimization were associated with lower levels of observed parenting at age 4. Levels of self-reported positive parenting at age 4 were negatively associated with observed parenting at age 4. The change in IPV victimization from pregnancy to age 4 did not predict the change in self-reported positive parenting or observed parenting at age 4. Changes in self-reported positive parenting from age 1 to 4 were not associated with observed parenting at age 4.

Discussion

The main findings from this study demonstrate that pregnancy IPV victimization is a significant predictor of women’s later parenting and that pregnancy IPV victimization influences the trajectory of parenting across early childhood. Few studies to date have examined how to change over time in interpersonally stressful experiences such as IPV influences changes in parenting behavior. Specifically, we found that pregnancy IPV predicted more positive self-reported parenting at age 1, and a shallower decrease in positive parenting through ages 1 to 4. However, pregnancy IPV was negatively related to age 4 observed positive parenting behavior, which suggests that, although mothers who experience IPV may

perceive or at least report their early parenting behavior as positive, their observed parenting behavior is not consistent with this perception. Changes in IPV over time did differentially predict self-reported and observed parenting behavior. These mixed findings are discussed further below.

An important strength of this study was the inclusion of both self-reported and observed parenting behavior. Consistent with our expectations based both on parenting research generally (Schofield et al., 2016) and research on the effects of trauma on cognition (Pill et al., 2017), we did not find similar results for the two different methods to assess parenting behavior. Consistent with two prior qualitative studies which found that mothers reported that they were better parents in order to protect their children from the effects of IPV (Lapierre, 2010; Levendosky et al., 2000), we found that the self-reports of positive parenting were related to higher levels of IPV. In contrast, higher levels of IPV were related to less observed positive parenting. One explanation is that mothers experiencing IPV may be positively distorting their perceptions of their parenting behavior. Self-aggrandizing distortions, which can be considered defensive strategies for maintaining the relationship with the child and satisfaction with the parenting role, have been noted in low-risk samples. (Wenger & Fowers, 2008). Distortion in the positive direction may also reflect a defensive strategy for maintaining one’s maternal identity or parenting self-efficacy in the context of IPV.

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The fact that pregnancy IPV, but not the slope of IPV from pregnancy to year 4 postpartum, predicted the trajectory of self-reported parenting and observed parenting underscores that pregnancy is a critical period for shaping maternal parenting postpartum. The development of maternal identity during pregnancy may aid in self-efficacy and adaptation to caring for the infant (Mercer, 2004). The development of the maternal identity during pregnancy is a strong predictor of parenting postpartum (Porcerelli et al., 2015). IPV experienced during pregnancy may threaten maternal identity development and promote the use of positive distortion in order to maintain this process. Pregnancy is considered a period of intense emotional preparation for the postpartum attachment relationship, and working models developed during this period, particularly in the context of pregnancy IPV, are considered predictors of parenting behavior (Dayton et al., 2010). Thus, pregnancy IPV may overwhelm one's ability to engage in consistently positive behaviors toward the child (Levendosky et al., 2006) regardless of the development of maternal identity and regardless of experiences of IPV postpartum.

Although the self-report and observed parenting findings are inconsistent with each other and were negatively associated in the current sample, the findings are not necessarily contradictory. Prior research by Rossman and Rea (2005) suggested significant variability in parenting by IPV-exposed women, with some women engaging in high levels of both authoritative and permissive parenting behaviors. Hibell et al. (2020) found differing relationships between IPV and positive parenting when using measures of self-reported and observed parenting behavior in a sample of IPV-exposed mothers; they suggested that self-report measures may contain multiple dimensions of parenting within the same construct and that these may be different than those seen in observational measures. In addition, IPV-exposed mothers can demonstrate both more positive and more negative affect while engaging with their children (Graham-Bermann & Levendosky, 1998). That is, higher levels of positive parenting do not preclude higher levels of harsh/negative parenting by the same women. Even so, one alternative explanation of the discrepancy is that mothers experiencing IPV may be motivated to give socially desirable responses on self-report measures if they fear that their children will be removed from their care due to exposure to IPV. Another possibility is that they may really be striving to be better parents and their self-reports indicate this motivation, rather than more objective reality (Lapierre, 2008). As noted by others (e.g., Aspland & Gardner, 2003), observational studies of parenting are less sensitive to reactivity and self-presentation bias and, therefore, may be more representative assessments of parenting behavior. A separate study of low-risk mothers also suggested that using a single observation of parenting behavior at one time may not be enough to get an accurate or predictive assessment of parenting, given variability over time (Madigan et al., 2016). Altogether, these findings suggest that multiple assessments of parenting across time, modalities, and with attention to context are ideal for future parenting research. Although IPV during pregnancy was not related to the slope of IPV or its change over time, measurement artifacts, including floor effects and regression to the mean, may explain the lack of an association. The ability to detect an association between intercept and slope is also dependent on the scaling of basis coefficients when a latent basis model is used to identify the shape of a growth curve (Rovine & Molenaar, 1998).

There are several limitations to the present study. First, given the use of both a self-report measure of positive parenting and observational coding of parenting behavior that were conceptually similar, the difference in methodology may have contributed to differences in findings. The self-report questionnaire assessed specific behaviors (e.g., "I read to my child at bedtime"), whereas the behavioral coding scheme assessed the quality of parenting behaviors in a laboratory context. Second, the present research also involved a limited examination of maternal parenting and IPV. Prior to the current study, attempts were made to examine a corresponding latent factor for observed negative (i.e., harsh, unresponsive, and insensitive) parenting, with the goal of including both positive and negative self-reported and observed parenting into an analytic model. Due to convergence issues, we were not able to examine a latent factor model for negative parenting behavior. A third limitation is that only the experience of women's IPV victimization was included; we did not include data on IPV perpetration in pregnant women. Inclusion of these data in the future may help to clarify whether women are experiencing situational couple violence, which is typically mild and bidirectional, or intimate terrorism, which is typically more severe and unidirectional. Relatively low endorsement of IPV in our sample suggests that most women experienced situational couple violence. Thus, these results should be interpreted with respect to differences in patterns of violence experienced across different individuals and situations. Fourth, there is some evidence that parenting practices are associated with ethnicity (Jambunathan et al., 2000), but we did not have enough representation of minority racial and ethnic groups to examine differences in our model without using a binary race variable. Finally, one consideration of LGCMs is the increased likelihood of large slope variances, especially when there is high variability in individual intercepts and individual slopes. Thus, they should be interpreted with caution. Alternative models may provide a better fit for these data. For instance, the zero-inflated negative binomial model is better suited for overdispersed data with large variance-to-means ratios (Yang et al., 2017). A test of this model resulted in a nonpositive definite error, which limits the interpretability of this model. We suspect that this error may be due to low means in the IPV variable and a high proportion of zeros in the data in combination with our relatively small sample size; however, we are unable to identify cutoffs for sample size in the literature.

The results of this study extend previous research on the association between IPV and maternal parenting by providing a longitudinal examination of both variables, including during pregnancy. The results also suggest that the negative associations between IPV and parenting begin even before the child is born and persists across early childhood, highlighting the importance of early intervention. Lapierre (2008) argues that current perspectives on IPV and parenting operate from a deficit model of motherhood. This perspective may be experienced as punitive and blaming of IPV-exposed mothers and lead them to avoid seeking treatment. Instead, Lapierre argues that a trauma-informed stance that accounts for maternal responses to IPV is important for developing more supportive and less blaming interventions. It is possible that the motivation to be better parents may lead to changes in actual or observable parenting behavior over time and a decreased discrepancy in self-reported and observed parenting. It may also be the case that this discrepancy diminishes over time as women leave violent relationships and process their trauma. Further, evidence from a

group-based intervention (Graham-Bermann & Miller, 2013) suggested that mothers who experience IPV often voice feelings of guilt and fear related to IPV exposure for themselves and their children. Given these considerations and evidence from the current study, future interventions should focus on more supportive practices, including validating and enhancing maternal protectiveness of the child's safety in the face of IPV. Interventions that use video feedback (using videotaped parent-child interactions in parenting-based therapies) may be useful in understanding and resolving possible distortions in perceptions of parenting behavior (e.g., Schechter et al., 2015).

In summary, this study examined the longitudinal association between IPV and maternal positive parenting from pregnancy through child age 4. Results indicate that pregnancy IPV predicted both maternal reports of positive parenting across early childhood and observed preschool-age parenting, although in opposite directions, suggesting that the pregnancy period may be especially sensitive to negative interpersonal experiences such as IPV. Further, the pregnancy period, during which women are forming their maternal identities, importantly predicts both long-term perceptions of parenting as well as actual parenting behavior.

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