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Factors Distinguishing Reciprocal Versus Nonreciprocal Intimate Partner Violence Across Time and Reporter

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Abstract

Although intimate partner violence (IPV) is often conceptualized as occurring unilaterally, reciprocal or bidirectional violence is actually the most prevalent form of IPV. The current study assessed physical IPV experiences in couples and evaluated risk and protective factors that may be differentially associated with reciprocal and nonreciprocal IPV concurrently and over time. As part of a multi-wave longitudinal study, women and men reported on the frequency of their IPV perpetration and victimization three times across the transition to parenthood. Participants also reported on risk factors related to personal adjustment, psychosocial resources, attitudes toward gender role egalitarianism, and sociodemographic characteristics at each wave. Participants were classified into one of four IPV groups (reciprocal violence, male perpetrators only, female perpetrators only, and no violence) based on their self-report and based on a combined report, which incorporated both partners' reports of IPV for a maximum estimate of violence. Women and men were analyzed separately, as both can be perpetrators and/or victims of IPV. Cross-sectional analyses using self-reported IPV data indicated that IPV groups were most consistently distinguished by their levels of couple satisfaction, across gender; psychological distress also appeared to differentiate IPV groups, although somewhat less consistently. When combined reports of IPV were used, sociodemographic risk markers (i.e., age, income, and education) in addition to couple functioning were among the most robust factors differentiating IPV groups concurrently, across gender. In longitudinal analyses, sociodemographic vulnerabilities were again among the most consistent factors differentiating subsequent IPV groups over time. Several gender differences were also found, suggesting that different risk factors (e.g., women's social support and men's emotion regulation abilities) may need to be targeted in interventions to identify, prevent, and treat IPV among women and men.

Keywords

partner aggression; couple conflict; domestic violence; multiple informant; gender differences; family violence

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Background

Historically, physical intimate partner violence (IPV) has been conceptualized as occurring unilaterally, with one perpetrator, typically male, physically aggressing or threatening to aggress against one victim, typically female (Langhinrichsen-Rohling et al., 2012). However, reciprocal violence, in which two people aggress against one another, is the most prevalent pattern of IPV, occurring in 57.5% of all IPV across various research samples (Langhinrichsen-Rohling et al., 2012). Reciprocal IPV, also known as bidirectional or mutual IPV, is believed to be qualitatively and quantitatively different from unidirectional IPV in its frequency, severity, context, intent, and consequences (Bates, 2016; Charles et al., 2011; Renner & Whitney, 2012). Overlooking reciprocal IPV is thus a clinical failure to identify adverse outcomes that both partners may face, distinct from those involved in unidirectional IPV; it also represents an empirical failure to consider etiological factors or processes that may contribute to bidirectional violence (Bates, 2016). Researchers are increasingly recognizing the need to examine reciprocal versus nonreciprocal IPV, but further inquiry is necessary (Forgey & Badger, 2010).

Prior work assessing reciprocal IPV has utilized different methodologies, each with their own strengths and drawbacks. In single-informant studies, participants report how often their partners have perpetrated IPV against them, and how often they have perpetrated IPV against their partners (e.g., Forgey & Badger, 2010; Palmetto et al., 2013). In other studies, both partners in the couple relationships are assessed, but they may be asked only about their IPV perpetration (e.g., Roberts et al., 2011), with their victimization coded from their partners' responses. Although these are admirable early efforts to begin addressing reciprocity in IPV, these approaches possibly distort data by omitting one partner's perspective entirely or disregarding that partners may characterize their experiences of IPV differently. Best practice for evaluating reciprocal IPV is thought to require both partners of a couple to provide data on both their perpetration and victimization (Bates, 2016), keeping in mind that inter-partner agreement may vary based on the strategies used to assess IPV (Chapman & Gillespie, 2019). Therefore, IPV may be classified as present based on either a minimum estimate—in which both partners in the relationship must report violence—versus a maximum estimate, which combines all violence reported by either member of the couple or by both partners (Kan & Feinberg, 2010). Using this maximum estimate offers a more complete picture and allows for a closer examination of how findings differ due to informant variance in IPV assessment.

Dyadic models of reciprocal IPV indicate that the likelihood that either partner will engage in physical aggression may be related to individual factors, such as psychopathology and social support, or sociodemographic variables, such as age and income (Okuda et al., 2015; Palmetto et al., 2013). A wide range of risk factors have been linked with IPV broadly, including relationship dissatisfaction, depression, and substance use (Capaldi et al., 2012), with possible gender differences wherein more mental health problems are reported by women experiencing IPV than by men (Kan & Feinberg, 2010). IPV has also been more strongly linked to greater marital dissatisfaction among female victims relative to male victims (Ackerman & Field, 2011). However, few studies have investigated multiple factors that may differentiate reciprocal versus nonreciprocal IPV specifically (Melander et

al., 2010). Risk factors that are unique to reciprocal IPV or common to both reciprocal and nonreciprocal IPV should be examined for both women and men, as each may be perpetrators and/or victims of violence (Renner & Whitney, 2012).

Correlates of violence may vary by type of IPV and possibly by gender (Charles et al., 2011; Melander et al., 2010; Renner & Whitney, 2012). Psychopathology, substance use, and relationship functioning appear to be important for both women and men. In a cross-sectional study sampling adult married female soldiers, women experiencing severe reciprocal IPV reported being the most depressed of all women (Forgey & Badger, 2010). Women identifying as perpetrators only reported less depression than women experiencing reciprocal IPV but reported marital satisfaction comparable to that of nonviolent couples (Forgey & Badger, 2010). In a cross-sectional study of married and cohabiting adults that oversampled Black and Hispanic couples, couples experiencing reciprocal IPV reported alcohol problems among both women and men (Caetano et al., 2005), consistent with literature linking alcohol use with IPV (Cafferky et al., 2018; Capaldi et al., 2012), particularly for young women (Grest et al., 2018; Renner & Whitney, 2012). In contrast, couples with only female IPV perpetrators reported alcohol problems in women but not men (Caetano et al., 2005). In a study of male and female young adults, greater depression and substance use were each more strongly linked to reciprocal than unidirectional IPV perpetration, with a stronger effect observed for men than women on depression (Charles et al., 2011). However, few other gender differences were identified, suggesting that correlates of reciprocal IPV perpetration may be more similar than different for women and men (Charles et al., 2011). Overall, these findings suggest that factors related to intrapersonal and couple functioning may pose risks for individuals experiencing IPV, though it remains unclear whether these differ significantly by gender.

Whereas poor personal adjustment and couple distress have been studied extensively, potential protective factors against IPV have often been ignored. Intrapersonal adjustment factors such as high empathy (Ulloa & Hammett, 2016), emotion regulation (McNulty & Hellmuth, 2008; Shorey et al., 2015), and coping abilities (Corvo, 2014) could represent resources that may differentiate reciprocal from nonreciprocal IPV perpetration. Sociocultural beliefs about gender roles could also be relevant. Although sex role egalitarianism did not differ between married female soldiers experiencing reciprocal versus nonreciprocal IPV (Forgey et al., 2010), other studies have observed connections between traditional gender role attitudes and men's IPV perpetration (Grest et al., 2018), suggesting that more sex egalitarian attitudes may be protective.

Lastly, sociodemographic characteristics such as older age and higher income and educational attainment are commonly seen as protective factors for both reciprocal and nonreciprocal IPV (Caetano et al., 2005; Capaldi et al., 2012; Melander et al., 2010). Because these qualities are not amenable to direct intervention, they have sometimes been controlled for in prior studies (e.g., Kan & Feinberg, 2010). However, other models have included them (e.g., Charles et al., 2011; Melander et al., 2010). Controlling for them may eliminate variance unnecessarily and does not advance the goal of identifying which groups may be particularly likely to engage in reciprocal versus nonreciprocal IPV.

Although the vast majority of studies on reciprocal IPV have been cross-sectional, such analyses cannot provide conclusions regarding the directionality of effects, such as the role of depression as a precursor and/or consequence of IPV (Melander et al., 2010), or whether putative risk factors change over time. Findings from the few longitudinal studies on reciprocal IPV (e.g., Charles et al., 2011; Melander et al., 2010) indicate that differences in psychopathology, substance use, relationship qualities, and demographic characteristics may exist based on the type of IPV experienced. However, prior longitudinal studies (Charles et al., 2011; Melander et al., 2010) typically derive from larger long-term studies of individual health which do not gather data from both members in the couple nor use a multi-informant approach. In particular, the transition to parenthood is a critical time to examine IPV in couples longitudinally, as parenthood tends to accelerate declines in marital satisfaction and communication for new parents relative to non-parent couples (Doss & Rhoades, 2017). Further, parents' IPV across the transition to parenthood also predicts changes in at-risk parenting (Rodriguez et al., 2018), suggesting this key period likely impacts child outcomes as well.

Current Study

Using a longitudinal dataset, the present study evaluated risks or resources related to personal adjustment (i.e., psychological distress, substance use, relationship satisfaction, social support, coping skills, empathy, and emotion regulation), attitudes towards traditional gender roles, and sociodemographic characteristics (i.e., age, income, and educational attainment), to determine which factors differentiated reciprocal versus nonreciprocal IPV groups experienced concurrently and over time, for women and men separately. Given concerns about replicability in psychological science (Tackett et al., 2019), potential factors were investigated concurrently at each wave of data collection to evaluate consistency in whether observed patterns of IPV group differences would be replicated at each time point. Further, these risk and protective factors were tested longitudinally to determine which these factors could forecast differences in subsequent IPV group membership, which could be clinically meaningful. Individuals experiencing reciprocal IPV were hypothesized to exhibit the worst personal adjustment (i.e., high psychological distress and substance use), the weakest personal resources (i.e., low relationship satisfaction, social support, coping skills, empathy, and emotion regulation), most traditional gender role beliefs, and the most vulnerable sociodemographic profile (i.e., young age, low income, and educational attainment) of all groups. Additionally, individuals experiencing nonreciprocal IPV (i.e., female or male perpetrator only couples) were expected to demonstrate intermediate adjustment: better than those with reciprocal IPV but worse than those with no IPV. The present study used self-reports about IPV experiences but also combined reports between the partners in a couple for a maximum estimate of violence; this approach permitted an examination of potential differences in prevalence of each IPV type and its associated risk factors when both partners' perspectives on IPV are incorporated versus when only self-reports are used.

Method

Participants

Participants were enrolled in the larger longitudinal "Following First Families" (Triple-F) Study, which tracked at-risk parenting among first-time parents. At Time 1 (T1), 203 primiparous women and 151 male partners (86% of fathers available) were recruited in the last trimester of pregnancy. At T1, mean age for women was 26.1 years (*SD* = 5.87) and for men, 28.9 years (*SD* = 6.10). Women reported their racial/ethnic identity as: 50.7% White, 46.8% African American, 1% Asian, and 1.5% Native American; 3% of the women also identified as Hispanic/Latina, and 5.5% as biracial. Men reported their racial/ethnic identity as: 54% White, 45.3% African American, and .7% Asian; 4% of the men also identified as Hispanic/Latino and 4.7% as biracial. For women's educational level: 30.3% ≤ high school; 20.9% some college or vocational training; 21.4% college degree; and 27.4% > college degree. For men: 25.3% ≤ high school; 24.7% some college or vocational training; 27.3% college degree; and 22.7% > college degree. At T1, half of the sample reported an annual household income <$40,000, with 41% of women receiving public assistance and 45% of families within 150% of the federal poverty line.

Families were re-assessed when their child was 6 mo. (±2 weeks; Time 2 [T2]) and again at 18 mo. (± 3 weeks; Time 3 [T3]). At T2, 186 women (92.5% of 201 eligible) were retained with 146 male partners (92% of available fathers). At T3, 180 women (90% of 200 eligible) and 144 male partners were retained.

Measures

Measures were administered at all three time points except as noted below.

Intimate partner violence.—The *Revised Conflict Tactics Scale-Short Form* (CTS-2S; Straus & Douglas, 2004) assesses the frequency of IPV in the past year, including physical and psychological aggression. Of the 20 items on this questionnaire, 7 items on victimization and 7 items on perpetration were selected for this study. The item "I insulted or swore or shouted or yelled at my partner" and its associated partner item from the psychological aggression section were excluded given that this behavior was highly endorsed by most participants, leading to low group variability. Scores for victimization and perpetration subscales are weighted frequency counts, wherein responses of 0, 1, or 2 times receive corresponding scores; 3–5 times receive a score of 4; 6–10 times is scored 8; 11–20 times is scored 15; and more than 20 times is scored 25. Higher total scores reflect greater experience of IPV. The CTS-2S demonstrates concurrent validity with the well-established longer CTS-2 (Straus & Douglas, 2004). Based on CTS-2S responses on victimization and perpetration, four IPV groups were formed: no violence (NV), female perpetrators only (FPO), male perpetrators only (MPO), and reciprocal violence (RV).

Personal adjustment risk factors.—The *Brief Symptom Inventory-18* (BSI; Derogatis & Melisaratos, 1983) assesses current symptoms of psychological distress. Participants report how much 18 symptoms of depression and anxiety have bothered them in the last week on a 5-point scale from 0 (*not at all*) to 4 (*extremely*). Items are summed, with

higher totals reflecting higher levels of symptoms. The BSI has demonstrated high internal consistency (Gameiro et al., 2013) and convergent and factorial validity (Prinz et al., 2013). In this sample, the BSI had good internal consistency for women (α = .88 to .91) and men (α = .89 to .93) across time.

The substance use scale of the *Substance Abuse and Mental Illness Symptoms Screener* (SAMISS; Whetten et al., 2005) is a brief screening tool that includes 7 items on the frequency of alcohol and illicit drug use (e.g., "How often do you have 4 or more drinks on 1 occasion?"). Higher total scores suggest greater problematic use of substances. The SAMISS is an effective screening tool, correctly identifying 98.6% of substance use diagnoses (Whetten et al., 2005). The Substance Use scale demonstrated acceptable internal consistency in the current sample for women (α = .67 to .70) and men (α = .70 to .82) across time.

Personal adjustment resources.—The *Couple Satisfaction Index* (CSI; Funk & Rogge, 2007) is a measure of partner satisfaction. Although the original scale includes 32 items, the test authors specified that the CSI can be safely truncated to 16 or even 4 items depending on researchers' needs (Funk & Rogge, 2007). The first 10 items of the CSI-16 were selected for this study, which have the simpler vocabulary and concepts (Rodriguez et al., 2018). Items are summed, with higher total scores indicating greater relationship satisfaction. The CSI demonstrates discriminant validity and convergent validity with other measures of dyadic, marital, or relationship satisfaction (Funk & Rogge, 2007). In this sample, internal consistency for the CSI was high for women (α = .97 to .98) and men (α = .95 to .97) across time.

The *Social Support Resources Index* (SSRI; Vaux & Harrison, 1985) is a measure of satisfaction with social support. Participants were asked to think about two individuals who are most important to them and rate their levels of satisfaction with each of them in five areas on a 5-point scale, from 1 (*Not satisfied*) to 5 (*Extremely satisfied*). Items are summed across each source of social support, with higher total scores reflecting greater satisfaction. The SSRI has previously demonstrated high internal consistency and convergent validity with other measures of perceived social support (Vaux & Harrison, 1985). Internal consistency for the SSRI in the current sample was high for women (α = .90–.94) and men (α = .92–.94) across time.

The *Coping Self-efficacy Scale* (CSES; Chesney et al., 2006) assesses respondents' confidence about their ability to use problem-focused coping effectively. It includes 13 items on engaged coping strategies, rated on an 11-point scale from 0 *(cannot do at all*) to 10 (*certain I can do*). Items are summed, with higher total scores reflecting greater confidence about using engaged coping skills. The CSES has demonstrated high internal consistency and convergent validity with other coping measures (Chesney et al., 2006). In this sample, internal consistency for the CSES was high for women (α = .92 to .94) and men (α = .90 to .95) across time.

The *Interpersonal Reactivity Index* (IRI; Davis, 1983) measures empathic ability using 14 items rated on a 5-point scale from 1 (*Describes me very well*) to 5 (*Does not describe*

me well). The IRI consists of two 7-item subscales: Empathic Concern relates to affective sympathy; Perspective Taking concerns the ability to adopt others' viewpoints. Items were summed across both subscales, with higher total scores suggesting greater empathy. In this sample, reliability for the IRI was good for women (α = .82 to .84) and men (α = .81 to .82) across time.

The *Negative Mood Regulation Scale* (NMRS; Catanzaro & Mearns, 1990) uses 30 items to assess respondents' ability to regulate negative emotions. Each item begins with the stem, "When I'm upset, I believe that…" and is followed by a different strategy. Items are scored on a 5-point scale from 1 (*Strongly Agree*) to 5 (*Strongly Disagree*) and summed, with higher total scores reflecting poorer ability to regulate negative emotions. The NMRS has previously demonstrated good internal consistency, test-retest reliability, and concurrent and predictive validity with negative affect (Catanzaro & Mearns, 1990). Internal consistency for the NMRS in the current sample was high for women (α = .90 to .92) and men (α = .90 to .91) across time.

Gender role beliefs.—The Sex Role Egalitarianism Scale-Short Form (SRES; King & King, 1997) was administered at Time 1 only, evaluating attitudes about traditional gender roles. This measure uses 25 items that are scored on a 5-point scale from 1 (*Strongly Agree*) to 5 (*Strongly Disagree*). Items are summed, with higher scores indicating more egalitarian attitudes. The SRES demonstrated high internal consistency in the current sample for women (α = .91) and men (α = .92), similar to that obtained in past studies (Kingsbury & Coplan, 2012).

Demographic characteristics.—At each time point, both parents reported their age, annual household income, and highest level of educational attainment.

Procedure

Expectant mothers in their third trimester were recruited to participate with flyers distributed at local hospitals' OB/GYN clinics and community health centers. Interested women contacted the lab to arrange a 2-hour session at Time 1 and were invited for follow-up for 3-hour sessions at Times 2 and 3. Fathers were invited to participate, where available. Women and men independently provided informed consent and completed the protocol in separate rooms; all measures were delivered electronically via laptop computers. The university's Institutional Review Board approved all study procedures.

Data Analytic Plan

All analyses were conducted for women and men separately using SPSS 24.

Preliminary analyses.—At each time point, participants were categorized into one of four IPV groups based on their *self-reports* on the CTS-2S: no violence (NV), FPO (e.g., for women's self-report, females' report of any CTS-2S perpetration of female-to-male IPV, *or* for men's self-report, males' report of any CTS-2S victimization), MPO (e.g., for women, any female victimization, *or* for men, males' report of any perpetration of male-to-female IPV), and reciprocal violence (RV; both perpetration and victimization reported on the

CTS-2S by the respondent). At each time point, participants were also categorized using a *combined* (self and partner) report of IPV: if either partner reported that form of IPV within the dyad, both partners were characterized as experiencing IPV; this provided a maximum estimate of IPV. To be categorized in the FPO group, one or both partners reported female-to-male IPV only; in the MPO group, one or both partners reported male-to-female IPV only; and for the RV group, one or both partners reported both female-to-male and male-to-female IPV.

Statistics were conducted for women and men using both self-reported and combined report IPV data. Correlations among measures were performed by gender.

Although attrition was limited, differential attrition analyses were performed to evaluate whether participants who did not return for T2 and/or T3 differed from retained participants in their self-reported IPV victimization or perpetration. Independent samples *t*-tests were performed for women and men separately from T1 to T2 and T2 to T3, and results indicated no statistically significant differential attrition. Longitudinal analyses required participant data be available at both time points; no missing data due to attrition were estimated.

Primary analyses.—Analyses were conducted first using self-reports of IPV and then using combined reports of IPV. Parents without available partner data were excluded from the combined report analyses (i.e., comparable to sample sizes of men, $n = 151$ at T1, $n = 146$ at T2, and $n = 144$ at T3).

Cross-sectional Analyses.: At each time point, an initial multivariate analysis of variance (MANOVA) test was performed with all variables simultaneously to detect any significant differences between IPV groups (the independent variable) on any dependent variable (e.g., personal adjustment risk factors and resources and sociodemographic characteristics). Following these omnibus tests, univariate ANOVAs with IPV group as the independent variable was performed to determine which individual variables differed between the four IPV groups, including Tukey's HSD post hoc comparisons to pinpoint which groups differed.

Longitudinal Analyses.: IPV group served as the grouping variable. After the initial MANOVA, univariate ANOVAs were performed to determine whether variables from the earlier time point (e.g., risk factors, resources, and demographics) differed based on later IPV group membership, including post hoc comparisons with Tukey HSD test to discern group differences.

Results

Preliminary Analyses

IPV group frequencies varied based on reports used. Based on women's self-report data only, women were categorized as: 68.2% no violence (NV; $n = 137$), 9.5% FPO ($n = 19$), 4.5% victims only (MPO; $n = 9$), and 17.9% reciprocal violence (RV; $n = 36$) at T1; 76.9% NV ($n = 143$), 2.7% FPO ($n = 5$), 5.9% MPO ($n = 11$), and 14.5% RV ($n = 27$) at T2; and 78.9% NV ($n = 107$), 4.4% FPO ($n = 6$), 4.4% MPO ($n = 9$), and 12.2% RV ($n = 20$) at T3.

Based on their self-report data only, men were categorized as: 72.6% NV (*n* = 106), 6.2% MPO (*n* = 9), 6.2% victims only (FPO; *n* = 9), and 15.1% RV (*n* = 22) at T1; 75.4% NV (*n* = 107), 6.3% MPO (*n* = 9), 4.2% FPO (*n* = 6), and 14.1% RV (*n* = 20) at T2; and 73.6% NV (*n* = 106), 8.3% MPO (*n* = 12), 4.9% FPO (*n* = 7), and 13.2% RV (*n* = 12) at T3.

Based on the combined report from both partners, couples were categorized as: 55.5% NV (*n* = 81), 9.6% FPO (*n* = 14), 6.8% MPO (*n* = 10), and 28.1% RV (*n* = 41) at T1; 62.0% NV (*n* = 88), 4.9% FPO (*n* = 7), 10.6% MPO (*n* = 15), and 22.5% RV (*n* = 32) at T2; and 65.3% NV (*n* = 94), 6.9% FPO (*n* = 10), 8.3% MPO (*n* = 12), and 19.4% RV (*n* = 28) at T3. Although not the focus of our research questions, couple concordance regarding women's IPV perpetration was: 70.5% at Time 1, 78.2% at Time 2, and 79.9% at Time 3. Couple concordance regarding men's IPV perpetration was: 71.2% at Time 1, 73.2% at Time 2, and 79.9% at Time 3.

Correlations between measures at T1 by gender are reported in Table 1 for reader interest (see Supplemental Table 1 for other time points).

Primary Analyses

Cross-sectional analyses.—Results from the cross-sectional analyses appear in Table 2. The omnibus MANOVA for each analysis appears in the top row (overall *F* by time point, gender, and self- or combined report), with the univariate ANOVA test result (*F*) next to each measure, with superscripts used to signify which groups differed based on Tukey's.

Women T1.: Based on women's self-reported IPV data at T1, analyses indicated that women with RV reported greater psychological distress and substance use and lower couple satisfaction relative to women not victimized (i.e., NV or FPO), and reported lower social support and coping skills relative to women with NV. Victimized women in the MPO group reported lower couple satisfaction than the FPO or NV group and lower social support than the NV group. Women in the FPO group also reported lower empathy than those in the NV group. With regard to demographics, women perpetrating IPV (i.e., FPO or RV) reported younger age, lower household income, and less educational attainment than women in the NV group. However, when analyses used combined report of IPV data, groups did not significantly differ in women's personal adjustment risk factors. Personal adjustment resources appeared more relevant, with women with RV reporting lower couple satisfaction and less egalitarian gender role attitudes in comparison to women with NV. Using combined reports, women with RV reported younger age and lower household income and educational attainment than women not perpetrating IPV (i.e., NV or MPO). Women in the FPO group also reported lower household income and educational attainment than victimized women in the MPO group.

Women T2 & T3.: Results at T2 and T3 based on self-reported IPV data indicated that groups did not differ in personal adjustment risk factors, with the possible exception of greater psychological distress for women in the self-report RV group at T2 compared to NV and greatest psychological distress in the FPO group using combined report at T3. Personal adjustment resources appeared more consistently relevant across self-report and combined report. Women with self-reported RV reported significantly lower couple satisfaction and

less social support than women with NV at T2 and T3. However, using combined report, women in the FPO group reported the lowest couple satisfaction at T2 and T3 and the lowest social support at T3. Additionally, at T2 and T3, women in the RV group were younger, had lower household income, and had less educational attainment than women in the NV group. Note that the FPO group, particularly with combined report, had the lowest income and educational level at T2.

Men T1.: Based on men's self-reported IPV data at T1, analyses indicated that men with RV reported significantly higher psychological distress and lower couple satisfaction than men with NV, but no other variables distinguished IPV groups (note that the FPO group reported the highest psychological distress and lowest couple satisfaction). However, when analyses instead used combined report IPV data, some personal adjustment resources became relevant in addition to the self-report only findings. Specifically, men with RV also reported lower social support and coping skills, as well as less egalitarian gender role attitudes, than men in the NV group. Likewise, men in the RV group were younger than NV men and had lower household income than NV or MPO men; RV men also reported the lowest educational attainment of all groups.

Men T2 & T3.: At T2, analyses based on men's self-reported IPV data indicated a similar pattern for psychological distress and couple satisfaction. In addition, men with RV reported lower empathy and poorer mood regulation abilities than men not victimized (i.e., NV or MPO). This pattern of T2 findings largely held at T3, with the exception that psychological distress no longer distinguished IPV groups; instead, men in the RV group reported higher levels of substance use than the NV group. With regard to demographics, men with RV were younger than NV men at T2 and NV and FPO men at T3, had less educational attainment relative to men with NV at T2, and had lower household income than NV or MPO men at T2 and T3. This pattern of results largely held when combined report IPV data was used, with the additional findings that men with RV reported significantly lower couple satisfaction than MPO men at T2, and men in the FPO group reported significantly lower income than NV men at T2.

Longitudinal analyses.

Results from the longitudinal analyses appear in Table 3. The omnibus MANOVA for each analysis again appears in the top row, with the univariate ANOVA test result next to each measure and superscripts to signify group differences based on Tukey's.

Women.—Based on women's self-report IPV data at T2, analyses indicated that the T2 RV group, compared to the NV group, reported greater psychological distress and lower couple satisfaction at T1, as well as younger age, lower household income, and less educational attainment at T1. This pattern largely held for analyses using combined T2 IPV data, except that groups did not differ significantly on T1 psychological distress. Note also that, with combined report, women in the FPO group reported the lowest income and educational attainment.

From T2 to T3, women's psychological distress and couple satisfaction at T2 no longer differentiated later IPV group status when self-report was used but did with combined report. Based on women's self-report, personal adjustment resources appeared relevant, with the T3 RV group reporting lower social support and coping skills at T2 than the T3 NV group. However, these differences disappeared when using combined report; instead, FPO women reported the lowest social support. Results for sociodemographic group differences remained the same from T2 findings when using self-report. When using combined report, the RV group was younger than the NV and FPO groups and had lower household income than the NV and MPO groups.

Men.—Based on men's self-reported IPV data at T2, analyses indicated that men in the RV group, relative to men in the NV group, reported lower coping skills and less egalitarian gender role attitudes at T1, as well as younger age, lower household income, and less educational attainment at T1. When analyses were performed using combined T2 IPV data, T1 coping and gender role attitudes no longer differentiated T2 IPV group status; only the pattern of results for sociodemographic group differences were robust, with the additional finding that men in the FPO group reported significantly lower income than those in the NV group.

A very different pattern emerged from analyses by T3 from men's T2 characteristics and self-reported T3 IPV data. Men in the RV group at T3 reported higher psychological distress than all other groups, as well as lower empathy and poorer mood regulation abilities than men not victimized (i.e., NV or MPO). The RV group was also significantly younger than the NV or FPO groups and had lower household income than the NV group. These findings were mirrored using combined reports, with the exception of empathy findings.

Discussion

The present study assessed correlates of reciprocal versus nonreciprocal IPV for women and men concurrently and over time, based on self-reports or combined reports of couples' IPV. By using a longitudinal design, the present study was able to address the replicability of patterns in group differences and identify which risks or resources were robust across three waves of data. Findings indicated that correlates of violence did vary by type of IPV and reporter used. In all cross-sectional analyses based on self-reported IPV, IPV groups were consistently characterized by differing levels of couple satisfaction for both women and men and by social support and sociodemographic characteristics (i.e., age, income, and education) for women only, with significantly poorer functioning and higher demographic risk noted among individuals with reciprocal IPV. Men's sociodemographic risk, women and men's psychological distress, women's coping, and men's emotion regulation and empathy were less consistent factors, exhibiting significant differences in concurrent IPV group status in only two of the three cross-sectional analyses. When cross-sectional analyses relied on combined ("maximum estimate") reports of IPV rather than self-reports, couple satisfaction, and sociodemographic markers appeared to be the most robust factors related to concurrent IPV group status, across gender. When analyzing data longitudinally, age, income, and education were the most consistent in differentiating women's and men's later IPV group

status, across reporter; social support was also a robust factor across time and reporter for women but not for men.

On the whole, individuals experiencing reciprocal IPV tended to report the worst personal adjustment and most at-risk sociodemographic profile of all groups, as hypothesized. This pattern is consistent with previous findings of poorer intrapersonal functioning and greater sociodemographic vulnerabilities for women and men experiencing reciprocal IPV (Caetano et al., 2005; Charles et al., 2011; Forgey & Badger, 2010). Yet results also indicated poor wellbeing for couples in the unidirectional IPV groups, as demonstrated by high psychological distress and low couple satisfaction among FPO men and MPO women, although differences between these groups and the reciprocal IPV group were not consistently significant. Yet these non-significant results could reflect the smaller sample size of unidirectional IPV groups. For both women and men, less than 10% of the sample was categorized in each of the unidirectional IPV groups (i.e., FPO and MPO) at any given time point, based on their self-reported IPV, with as low as 2.7% of women at Time 2 reporting being IPV perpetrators only (FPO). Given that small sample size is associated with lower statistical power to detect effects, replication of the current model is necessary with a larger sample, with larger numbers in the MPO and particularly FPO groups.

Self-reported cross-sectional results provided evidence that multiple risk factors differentially characterized IPV groups, with some commonalities across gender. For both women and men, IPV groups could consistently be distinguished by their levels of couple satisfaction at each time point, in accordance with previous literature on correlates of reciprocal IPV (Forgey & Badger, 2010) and IPV more broadly (Capaldi et al., 2012). The robustness of this finding suggests that relationship distress should be a prime target for clinical intervention to reduce IPV, regardless of gender. Less consistently, mental health concerns differentiated IPV groups at two of three time points for both women and men, with individuals experiencing reciprocal violence reporting the highest levels of psychological distress at Times 1 and 2 (during the immediate strains associated with a transition to parenthood) but not Time 3, generally supporting previous literature linking psychopathology with IPV (Okuda et al., 2015).

Other gender differences in IPV correlates were identified. Beyond couple satisfaction, IPV groups were most consistently distinguished for women by age, income, education, and social support, each exhibiting significant differences at all time points. For sociodemographic risk, women experiencing reciprocal IPV were younger, lower income, and less educated at each time point than women experiencing no IPV, aligning with prior findings linking IPV with youth and social disadvantage (Okuda et al., 2015). However, for men, these three markers of sociodemographic risk were significant only at the latter two time points, with no evidence of group differences prenatally. These findings suggest that markers for sociodemographic risk may be more consistently useful in identifying women at risk for reciprocal IPV than men.

In addition, social support satisfaction and coping were more consistently relevant in distinguishing IPV groups for women than for men. Compared to women experiencing no IPV, women experiencing reciprocal violence were less satisfied with their social support

at all time points and reported poorer coping skills at two of three time points. However, significant group differences in social support satisfaction were only evident among men at Time 2, and coping skills did not differentiate IPV groups at any time. High positive social support and strong coping self-efficacy seem to mitigate the negative psychological consequences for IPV victims (DeCou et al., 2015; Sylaska & Edwards, 2014), whereas lower social support and poorer coping abilities are associated with increased risk of IPV perpetration (Corvo, 2014; Okuda et al., 2015). Future research could further probe women's perceptions of the quantity and quality of their social support or their beliefs about physical aggression as a maladaptive expression of coping. Clinicians may also consider helping women develop the skills to build satisfying social support networks and apply more adaptive coping strategies to address IPV.

On the other hand, IPV groups were differentiated by emotion regulation abilities and empathy more consistently for men than for women. Specifically, men experiencing reciprocal IPV reported poorer abilities to regulate negative mood and lower empathy relative to men with no violence or men perpetrating violence at the latter two time points—after the birth of their child. However, significant group differences in emotion regulation and empathy each only appeared for women at one time point, with worst mood regulation skills for women experiencing reciprocal IPV at Time 3 and lowest empathy among female perpetrators at Time 1. The IPV literature has primarily studied emotion regulation deficits among male perpetrators (McNulty & Hellmuth, 2008; Shorey et al., 2015), although some evidence has connected both men and women's physical aggression to emotion regulation difficulties (Shorey et al., 2011). Given present findings of self-reported deficits in emotion regulation in men who were both perpetrators and victims of IPV, future work could consider how men's difficulties managing negative affect or poor impulse control plays a role in reciprocal IPV (Shorey et al., 2011). Interventions might also target improving emotion regulation abilities among men at risk for IPV or who have reported any IPV.

A methodological strength of this study was its use of combined reports between partners in a couple for a maximum estimate of IPV (cf. Kan & Feinberg, 2010), beyond self-reports of IPV. As expected, prevalence of both reciprocal and nonreciprocal IPV increased when combined data were used relative to self-reports, suggesting that relying exclusively on self-reported iPV data likely amplifies underreporting of IPV. When considering concurrent correlates of IPV based on combined data instead of self-reports, relationship satisfaction continued to demonstrate effects when combined reports were used, exhibiting robust differences between iPV groups at all times for both women and men; psychological distress also continued to be a significant risk factor at two of three time points for both women and men. Yet a number of differences emerged. For women, social support became a less consistent factor (from significance at three times to just one), and prior group differences in coping and empathy became non-significant. Age, income, and education generally remained robust with the exception of women's education at Time 3. For men, empathy became a less consistent factor (from significance at two times to just one), and substance use and coping skills each became significant differential factors at one time point. Age, income, and education also became significant differential factors at Time 1 in addition to the prior sociodemographic risk findings, with the exception of men's education at Time 3. in sum, when combined data were used rather than self-reports,

couple dissatisfaction remained one of the most robust risk factors, newly joined by sociodemographic characteristics; psychological distress remained robust to a lesser degree, and other factors related to personal adjustment became less relevant for women.

Although the current study benefits from its multi-informant approach, this study remains limited by its reliance on self-reports and the absence of indirect assessment of several variables, such as couple functioning, substance use, empathy, emotion regulation, and coping abilities—all of which may be subject to misrepresentation. Even when multiple informants are used to assess such variables, intrapersonal factors contribute to discrepancies in partners' perspectives (as seen for partner reports on emotion regulation; Pu et al., 2019). In multi-informant studies, several sources of self-report biases remain, including attention, selective recall, and social desirability (Möricke et al., 2016). Such biases are likely heightened when disclosing IPV, a sensitive topic that is frequently unrecognized and underreported by both women and men, thus undermining the validity of IPV assessments (Follingstad & Rogers, 2013). For practical and ethical reasons, IPV cannot be observed in the laboratory, but researchers have begun to innovate methods to improve IPV self-report assessment, such as correction scales to assess respondent validity (Follingstad & Rogers, 2013), or experimental paradigms such as implicit priming and restricted response latencies to enhance reporting accuracy (Ortiz & Mattson, 2018). The field would benefit from establishing a gold standard of IPV measurement that would likely prioritize multimethod assessment (Follingstad & Rogers, 2013).

The current study also examined IPV data longitudinally in order to determine which variables could be useful for predictive clinical purposes. Based on self-reported IPV data, age, income, and education appeared most consistent in differentiating women's and men's later IPV group status across time, with one exception that men's IPV group status at Time 3 was not differentiated by their education at Time 2. Additionally, social support satisfaction consistently differentiated later IPV group status for women but not for men. Otherwise, women and men's psychological distress, women's couple satisfaction, women and men's coping, men's empathy, men's mood regulation, and men's gender role beliefs were each associated with subsequent IPV group status across one of the two windows of time—with several of these factors representing areas for intervention prenatally. When combined reports of IPV were used instead, findings indicated that age, income, and education remained the most consistent factors differentiating women's and men's later IPV group status, with the one exception that IPV groups at Time 3 were not differentiated by education at Time 2 for either women or men. In addition, women's couple satisfaction and social support were more consistently associated with subsequent IPV group status, whereas for men, substance use and mood regulation appeared to be associated with later IPV group status across one of the two windows of time. Overall, this set of findings suggest that sociodemographic characteristics are the most robust risk factors that can distinguish later IPV groups and underscore the need for prevention and community outreach among younger adults, low-income areas, and/or other high-risk, often underserved populations.

Other limitations of this study concern the choice of risk factors assessed and analyses performed in the model, as well as the nature of the sample which may limit generalizability of results. Although the present investigation focused on vulnerabilities or resources

related to personal adjustment and sociodemographic risk, future work could explore other predictors of IPV, including situational or transactional factors that may provide a context for IPV, such as retaliation or self-defense as motives for violence (Charles et al., 2011). Reliability of the substance use measure was relatively low for women, suggesting additional work may need to consider substance issues for women. Further, to limit the scope of this article, the current analyses did not pinpoint the strongest predictors of reciprocal versus nonreciprocal IPV, nor did the current analyses model change in group membership, which could be performed in future work. Likewise, future studies could conduct dyadic analyses, examining cross-over effects from one partner to another (cf. Tucker et al., 2017), or model change in IPV group status or trajectories, to expand upon present findings. In addition, this study involved couples in the United States across the transition into parenthood, a stressful period during a couple's relationship (Doss & Rhoades, 2017). And despite considerable racial diversity in the current sample, proportionally fewer adults identified as Hispanic/Latinx, a group warranting further study. A larger sample size would also permit analyses that differentiate by racial group. Replication of this study would also be beneficial in other samples, including cross-cultural studies, treatment-seeking samples of adults with substantiated family violence or mental health issues, or other community samples, such as same-sex couples or parents of older children or adolescents.

Overall, this study evaluated personal risks and resources to determine which factors differentiate reciprocal versus nonreciprocal IPV groups concurrently and across time, by gender and by reporter. Present findings suggest that sociodemographic vulnerabilities are perhaps the most consistent risk factors that can differentiate subsequent IPV group status among the current sample of new parents, indicating that parents' social milieu may present challenges in their abilities to interact with their partners adaptively. Although age, income, and education are not amenable to behavioral modification, these factors provide a context for the parents who are the most likely to need and benefit from prevention and treatment services. Current findings suggest that within such services, couple satisfaction and mental health challenges are likely some of the most relevant clinical targets across gender; interventions may also need to include some distinct targets for women versus men. Such improvements in identifying and intervening in IPV will be critical to prevent and treat the adverse physical and mental health sequelae of reciprocal IPV, which may have been previously overlooked or underrecognized in clinical settings.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Biography

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Table 1.

Correlations between Measures at Time 1.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. CTS-2S victimization		.80***	.30***	.28***	−.45***	−.14	−.09	−.14	.07	−.23**	−.21*	−.26***	−.16
2. CTS-2S perpetration	.72***		.27***	.15	−.31***	−.14	−.12	−.11	.11	−.23**	−.18*	−.15	−.11
3. Brief Symptom Inventory-18	.33***	.21**		.27***	−.29***	−.24**	−.30***	−.14	.11	−.19*	−.28***	−.21*	−.10
4. SAMISS	.28***	.10	.27***		−.29***	−.15	.02	−.15	.03	−.05	−.05	−.02	.02
5. Couple Satisfaction Index	−.34***	−.23***	−.31***	−.13		.47***	.35***	.07	−.22**	.24**	.19*	.34***	.14
6. Social Support Resources Index	−.16*	−.10	−.27***	−.15*	.43***		.58***	.29***	−.31***	.21**	.24**	.37***	.24**
7. Coping Self-efficacy Scale	−.15*	−.14*	−.28***	−.19**	.18*	.45***		.24**	−.53***	.26***	.22**	.29***	.16*
8. Interpersonal Reactivity Index	−.11	−.15*	−.02	−.03	.06	.30***	.38***		−.29***	.32***	.18*	.18*	.16*
9. Negative Mood Regulation Scale	.09	.07	.25***	−.10	−.14*	−.34***	−.52***	−.42***		−.51***	−.12	−.26**	−.06
10. Sex Role Egalitarianism Scale	−.16*	−.20***	−.02	.14*	.14	.22***	.27***	.49***	−.38***		.49***	.46***	.49***
11. Age	−.16*	−.27***	−.17*	.23***	.30***	.12	.07	.10	−.03	.46***		.56***	.44***
12. Income	−.24***	−.28***	−.11	.13	.41***	.19**	.03	.03	.03	.37***	.68***		.60***
13. Education	−.15	−.28***	−.04	.12	.31**	.24***	.06	.07	−.01	.39***	.62***	.74***	

Note. Women's correlations below the diagonal. Men's correlations above the diagonal.

CTS-2S = Revised Conflict Tactics Scale; SAMISS = Substance Abuse and Mental Illness Symptoms Screener.

* $p < .05$.

** $p \leq .01$.

*** $p \leq .001$.

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Table 2.

Cross-sectional Analyses with Group Means.

	Time 1				Time 2				Time 3			
	Women SR	**Women CR**	**Men SR**	**Men CR**	**Women SR**	**Women CR**	**Men SR**	**Men CR**	**Women SR**	**Women CR**	**Men SR**	**Men CR**
F	1477.43	1757.07	1255.52	1926.87	937.94	1353.08	1042.17	1379.98	972.16	1580.47	1337.64	1724.95
BSI	10.00***	2.88*	5.62***	5.18**	3.14*	2.58	4.42**	2.79*	1.66	8.99***	2.50	1.57
NV	7.99^{d}	8.30	3.73^{d}	3.44^{d}	5.45^{d}	4.83	2.91^{d}	2.84^{d}	5.08	4.03^{b,d}	3.32	3.31
FPO	8.68^{d}	10.57	9.11	4.14	6.40	8.86	5.17	3.71	8.50	12.00^{a,c}	6.57	5.40
MPO	15.33	14.10	7.22	6.30	8.55	6.73	4.78	4.33	6.50	3.58^{b}	3.83	3.75
RV	15.94^{a,b}	12.56	8.91^{a}	8.24^{a}	10.59^{a}	9.00	7.85^{a}	6.28^{a}	7.90	7.93^{a}	7.06	5.96
SAMISS	5.37***	.33	1.36	.88	2.33	.23	.66	.56	.26	.19	4.77**	4.22**
NV	1.59^{d}	1.81	4.94	4.83	2.36	2.68	4.27	4.27	2.89	2.83	3.65^{d}	3.82^{d}
FPO	.47^{d}	1.29	4.22	4.07	3.00	2.29	6.00	4.43	3.25	2.90	6.86	5.40
MPO	.89	1.80	2.67	3.60	3.00	2.20	3.67	3.47	2.75	2.42	3.92	2.17^{d}
RV	2.83^{a,b}	1.98	5.32	5.34	3.70	2.63	4.30	4.78	2.41	3.11	6.47^{a}	5.93^{a,c}
CSI	13.65***	9.31***	5.55***	8.34***	7.41***	5.33**	4.72**	8.64***	8.81***	9.67***	4.32**	3.59*
NV	53.36^{c,d}	56.17^{d}	54.57^{d}	55.73^{b,d}	51.16^{d}	53.19^{d}	53.26^{d}	53.92^{d}	49.23^{d}	51.64^{bd}	50.08^{b}	50.49
FPO	52.21^{c,d}	52.43	47.33	48.21^{a}	50.80	45.00	46.83	54.00	48.75^{d}	37.90^{a,c}	38.86^{a,c}	43.30
MPO	37.11^{a,b}	55.40	53.13	54.30^{a}	47.55	55.07^{d}	50.56	53.00^{d}	49.63^{d}	54.25^{b,d}	54.75^{b}	54.33
RV	41.78^{a,b}	48.05^{a}	47.86^{a}	48.90^{a}	40.00^{a}	47.16^{a,c}	44.85^{a}	44.19^{a,c}	34.77^{a,b,c}	41.79^{a,c}	44.89	45.00
SSRI	9.35***	2.51	1.81	5.17**	7.42***	1.22	4.21**	2.57	7.17***	6.59***	1.77	2.07
NV	43.23^{c,d}	43.37^{d}	41.69	42.89^{d}	42.70^{d}	43.09	41.87	42.06	41.40^{d}	42.31^{b,d}	40.10	40.39
FPO	41.42	42.43	40.78	39.64	44.20	41.00	33.33	37.57	36.00	35.40^{a}	35.14	36.70
MPO	36.22^{a}	40.80	36.78	40.70	41.73	42.13	36.22	39.20	40.38	42.25	40.25	40.58
RV	37.17^{a}	39.98^{a}	38.86	37.46^{a}	36.19^{a}	40.55	38.10	38.00	33.38^{a}	36.78^{a}	36.05	36.21

	Time 1				Time 2				Time 3			
	Women SR	**Women CR**	**Men SR**	**Men CR**	**Women SR**	**Women CR**	**Men SR**	**Men CR**	**Women SR**	**Women CR**	**Men SR**	**Men CR**
CSES	2.76*	1.04	2.38	3.62*	1.31	.60	2.15	.92	3.13*	1.00	1.98	.73
NV	100.34^{d}	97.93	106.33	108.64^{d}	99.61	98.30	107.70	107.28	99.31	98.85	103.41	101.93
FPO	96.47	99.86	105.00	102.50	105.20	87.14	92.17	96.00	75.88	85.90	102.00	104.80
MPO	94.00	97.20	91.89	98.80	101.45	94.53	100.33	103.80	88.75	98.42	106.92	109.08
RV	88.92^{a}	91.05	97.32	96.61^{a}	90.96	97.81	96.75	101.41	89.71	94.18	89.94	97.74
IRI	3.13*	.52	.28	2.35	1.22	1.51	3.84*	4.00**	1.41	2.51	3.63*	2.36
NV	56.74^{b}	56.48	53.26	54.28^{d}	56.29	56.77	53.30^{d}	53.30^{d}	55.99	55.69	53.50^{d}	53.31
FPO	51.26^{a}	53.57	54.11	54.07	60.00	53.43	51.83	49.86	51.50	54.60	53.43	54.50
MPO	54.11	56.50	51.89	52.60	57.73	59.07	55.78^{d}	56.87^{d}	56.50	61.50^{d}	54.92^{d}	55.25
RV	54.68	55.78	51.91	50.29^{a}	53.59	54.38	46.90^{a,c}	48.81^{a,c}	53.14	53.79^{c}	47.63^{a,c}	49.61
NMRS	.92	1.38	.33	.28	.73	1.93	4.10**	4.18**	4.06**	3.08*	4.79**	3.00*
NV	63.66	64.17	62.63	62.48	66.02	66.69	65.19^{d}	64.13^{d}	63.30^{d}	64.24	64.83^{d}	64.81^{d}
FPO	65.00	66.79	62.89	62.71	67.00	75.00	63.17	70.14	70.38	64.90	61.57	64.60
MPO	72.22	74.60	66.00	63.10	58.09	57.33	57.33^{d}	59.80^{d}	66.00	55.50^{d}	63.58^{d}	62.08
RV	66.44	64.54	66.24	65.50	63.70	66.97	76.58^{a,c}	73.97^{a,c}	77.27^{a}	72.64^{c}	79.53^{a,c}	74.79^{a}
SRES	3.07*	4.77**	1.63	4.38**								
NV	108.38	110.41^{d}	100.99	102.91^{d}								
FPO	99.37	104.29	101.00	102.57								
MPO	106.89	107.20	94.00	98.40								
RV	101.92	100.02^{a}	92.91	91.41^{a}								
Age	12.61***	14.49***	2.49	13.53***	7.47***	10.18***	4.44**	8.97***	8.42***	4.99**	5.35**	5.90***
NV	27.61^{b,d}	29.16^{d}	29.66^{d}	31.21^{d}	27.76^{d}	29.49^{d}	30.44^{d}	31.36^{d}	28.53^{d}	29.29^{d}	31.29^{d}	31.43^{d}
FPO	22.74^{a}	26.00	28.22	28.07	23.80	24.71	29.00	27.14	26.88	30.70^{d}	32.71^{d}	32.50^{d}
MPO	24.89	27.60^{d}	27.56	28.70	25.82	25.87	27.22	27.60	26.88	28.33	28.42	30.25

	Time 1				Time 2				Time 3			
	Women SR	**Women CR**	**Men SR**	**Men CR**	**Women SR**	**Women CR**	**Men SR**	**Men CR**	**Women SR**	**Women CR**	**Men SR**	**Men CR**
RV	22.11^{a}	23.10^{a,c}	26.00^{a}	24.63^{a}	22.56^{a}	24.13^{a}	25.45^{a}	25.66^{a}	22.32^{a}	25.04^{a,b}	25.79^{a,b}	26.25^{a,b}
Income	15.46***	14.85***	.84	12.88***	4.82***	11.18***	6.35***	9.27***	4.26**	4.66**	3.91**	5.99***
NV	7.64^{b,d}	8.63^{b,d}	7.71	8.60^{b,d}	7.09^{d}	8.53^{b,d}	8.19^{d}	8.63^{b,d}	7.32^{d}	7.81^{d}	8.08^{d}	8.14^{d}
FPO	4.42^{a}	5.50^{a,c}	6.89	5.86^{a,c}	4.20	4.00^{a}	7.67	4.43^{a}	6.50	7.20	8.86	8.70
MPO	5.78	9.50^{b,d}	7.22	9.70^{b,d}	7.55	8.13^{d}	8.33^{d}	8.27^{d}	7.75	9.50^{d}	8.83^{d}	9.83^{d}
RV	3.42^{a}	4.71^{a,c}	6.41	5.10^{a,c}	4.26^{a}	4.78^{a,c}	4.50^{a,c}	5.41^{a,c}	4.18^{a}	5.29^{a,c}	5.37^{a,c}	5.57^{a,c}
Educ.	10.96***	13.59***	1.65	8.88***	3.96**	6.38***	4.32**	6.44***	5.69***	2.02	3.12*	1.93
NV	4.95^{b,d}	5.40^{d}	4.60	4.83^{d}	4.81^{d}	5.28^{b,d}	4.78^{d}	4.94^{d}	4.86^{d}	5.02	4.35^{b}	4.43
FPO	3.74^{a}	4.36^{c}	5.44	5.00^{d}	4.20	3.57^{a}	5.17	4.14	5.00	4.70	5.86^{a,d}	5.00
MPO	4.56	6.10^{b,d}	4.33	5.60^{d}	4.91	5.00	4.56	4.80	4.75	5.25	4.58	4.75
RV	3.44^{a}	3.83^{a,c}	4.18	3.68^{a,b,c}	3.67^{a}	4.06^{a}	3.55^{a}	3.69^{a}	3.41^{a}	4.25	3.95^{b}	3.89

Note. NV = No violence, FPO = Female perpetrators only, MPO = Male perpetrators only, RV = Reciprocal violence, SR = Self-report, CR = Combined report.

Omnibus MANOVA *F* listed on top row (all $p < .001$).

Post hoc univariate ANOVA *F*-values listed on first row for each measure.

$^{*}p < .05$ (light shading)

$^{**}p \leq .01$ (medium shading)

$^{***}p \leq .001$ (dark shading).

Superscripts indicate sig. difference with other group ($p < .05$):

^{a}No violence

^{b}Female perpetrators only

^{c}Male perpetrators only

^{d}Reciprocal violence.

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Table 3.

Longitudinal Analyses with Group Means.

	T1 Characteristics → T2 IPV Group				T2 Characteristics → T3 IPV Group			
	Women SR	**Women CR**	**Men SR**	**Men CR**	**Women SR**	**Women CR**	**Men SR**	**Men CR**
F	946.68	1441.87	972.83	1224.91	819.89	1302.71	1238.67	1525.11
BSI	9.28***	2.25	.78	1.85	.90	4.57**	7.32***	4.24**
NV	8.14^{d}	8.13	4.25	3.93	5.91	4.79^{d}	2.99^{d}	3.13^{d}
FPO	14.80	12.71	4.17	2.67	5.57	8.00	1.71^{d}	1.44^{d}
MPO	14.36	9.27	6.25	5.77	6.50	4.75	4.50^{d}	3.92
RV	16.48^{a}	12.13	6.31	6.63	9.09	11.29^{a}	10.47^{a,b,c}	7.91^{a,b}
SAMISS	.20	1.90	1.05	.50	.19	.86	3.22*	2.87*
NV	1.71	1.89	5.00	4.99	2.54	2.52	3.76	4.07
FPO	1.40	2.71	5.83	4.33	3.14	3.40	6.43	5.33
MPO	1.45	1.80	3.63	3.69	2.25	2.17	3.17	1.92
RV	2.00	1.09	3.69	4.81	2.41	2.14	5.53	4.74
CSI	4.22**	3.90**	1.88	1.96	1.23	3.39*	2.44	1.13
NV	51.92^{d}	54.63^{d}	54.23	54.45	49.34	51.58	52.51	52.17
FPO	39.60	46.14	47.00	49.83	51.14	43.00	47.86	49.78
MPO	47.91	55.00	55.25	57.15	51.75	54.67	53.08	53.83
RV	44.26^{a}	49.34^{a}	54.93	52.15	44.59	47.04	45.53	48.35
SSRI	2.69*	3.46*	1.06	.96	5.69***	3.67*	2.35	1.03
NV	42.43	42.90	41.94	42.16	42.51^{d}	42.97^{b}	41.59	41.34
FPO	37.80	37.71	37.50	39.00	37.14	36.20^{a}	38.43	39.67
MPO	43.27	44.87	39.63	40.46	43.50	43.17	41.42	42.00
RV	38.74	39.88	40.06	39.85	36.71^{a}	41.15	35.80	38.13
CSES	1.15	.21	3.47*	2.06	2.74*	1.74	1.97	1.24
NV	98.24	97.63	107.49^{d}	107.94	100.93^{d}	100.20	106.31	105.72

	T1 Characteristics → T2 IPV Group				T2 Characteristics → T3 IPV Group			
	Women SR	**Women CR**	**Men SR**	**Men CR**	**Women SR**	**Women CR**	**Men SR**	**Men CR**
FPO	110.20	94.14	100.50	101.00	99.14	84.90	107.14	108.78
MPO	95.09	93.53	104.25	103.15	106.13	104.67	105.08	107.58
RV	92.26	96.53	90.50^{a}	97.11	87.00^{a}	97.93	90.73	96.04
IRI	.65	1.13	2.26	1.28	2.50	2.30	3.88*	2.49
NV	55.99	55.42	53.93^{d}	53.76	56.99	57.42	53.45^{d}	53.18
FPO	58.20	54.14	53.17	50.17	51.57	52.10	52.43	53.00
MPO	57.82	59.07	53.25	55.00	53.00	58.42	56.17^{d}	57.00^{d}
RV	54.38	56.75	48.44^{a}	51.11	52.82	53.96	46.27^{a,c}	49.09^{c}
NMRS	.05	.11	1.52	.64	.73	1.64	5.05**	2.84*
NV	64.24	64.55	62.42	63.24	64.58	67.21	64.10^{d}	65.01
FPO	62.20	67.00	68.67	66.17	63.86	68.00	62.29	62.00
MPO	62.91	63.67	61.38	59.62	68.25	55.75	60.33^{d}	57.75^{d}
RV	64.56	65.66	71.00	66.70	70.55	68.29	79.53^{a,c}	72.83^{c}
SRES	1.03	.31	3.79*	2.38				
NV	107.03	109.18	102.94^{d}	102.98^{d}				
FPO	115.80	107.86	101.00	98.50				
MPO	110.18	108.93	91.50	101.00				
RV	103.93	106.31	89.88^{a}	93.19^{a}				
Age	7.07***	9.60***	3.59*	7.47***	8.85***	5.20**	5.44**	5.73***
NV	27.15^{d}	28.88^{d}	30.35^{d}	31.20^{d}	27.66^{d}	28.36^{d}	30.74^{d}	30.92^{d}
FPO	23.20	24.14	28.17	27.67	27.00	29.80^{d}	31.71^{d}	31.33^{d}
MPO	25.18	25.40	26.00	26.85	25.88	27.25	27.42	29.25
RV	22.07^{a}	23.63^{a}	26.00^{a}	25.78^{a}	21.32^{a}	24.04^{a,b}	24.93^{a,b}	25.48^{a,b}
Income	4.62**	8.31***	3.13*	6.55***	5.83***	5.47***	3.14*	4.71**
NV	7.03^{d}	8.36^{b,d}	8.35^{d}	8.76^{b,d}	7.13^{d}	7.58^{d}	8.20^{d}	8.39^{d}

	T1 Characteristics → T2 IPV Group				T2 Characteristics → T3 IPV Group			
	Women SR	**Women CR**	**Men SR**	**Men CR**	**Women SR**	**Women CR**	**Men SR**	**Men CR**
FPO	5.20	4.43[a]	7.17	4.50[a]	6.57	6.90	9.29	8.44
MPO	7.45	7.87	8.50	8.31	7.00	9.08[d]	8.25	9.08[d]
RV	4.15[a]	5.16[a]	5.63[a]	6.19[a]	3.4[a]	4.68[a,c]	5.40[a]	5.52[a,c]
Educ.	3.84[*]	7.02[***]	3.93[**]	6.13[***]	6.00[***]	1.62	2.67	2.14
NV	4.81[d]	5.30[b,d]	4.90[d]	5.06[d]	4.82[d]	4.98	4.64	4.75
FPO	4.00	3.4[a]	5.00	4.17	5.00	4.60	5.86[d]	5.22
MPO	4.91	4.93	4.88	4.92	4.75	5.08	4.58	4.58
RV	3.70[a]	4.09[a]	3.6[a]	3.8[a]	3.27[a]	4.25	4.00[b]	4.00

Note. NV = No violence, FPO = Female perpetrators only, MPO = Male perpetrators only, RV = Reciprocal violence, SR = Self-report, CR = Combined report.

Omnibus MANOVA *F* listed on top row (all $p < .001$).

Post hoc univariate ANOVA *F*-values listed on first row for each measure.

[*] $p < .05$ (light shading)

[**] $p \leq .01$ (medium shading)

[***] $p \leq .001$ (dark shading).

Superscripts indicate sig. difference with other group ($p < .05$):

[a] No violence

[b] Female perpetrators only

[c] Male perpetrators only

[d] Reciprocal violence.

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